

Manual on the economic accounts for Agriculture and Forestry EAA/EAF 97

(Rev.1.1)



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**MANUAL ON THE
ECONOMIC ACCOUNTS
FOR AGRICULTURE
AND FORESTRY
EAA/EAF 97 (REV. 1.1)**

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FOREWORD

1. Economic accounts for agriculture have been published by the Statistical Office of the European Communities since 1964. For the first few years, the concepts, definitions and rules of accounting were not uniform and it was not until 1969 that the six original Member States began to use the European System of Integrated Economic Accounts (ESA)⁽¹⁾ as the basis for their calculations covering the period from 1963 onwards. In 1969 also, the system of **Economic Accounts for Agriculture** (EAA) was supplemented by the system of **Economic Accounts for Forestry** (EAF), which was based on the ESA from the outset.
2. Since the concepts, ideas and rules of accounting laid down in the ESA represent only a general framework applicable to the economy as a whole and cannot therefore make provision for all aspects specific to each of its individual industries, they had to be amplified to cover the specific requirements of agriculture and forestry. This was done initially in 1969 in two working documents produced by the SOEC Committee on Agricultural Statistics' Working Party on Economic Accounts for Agriculture ⁽²⁾. These were regularly expanded in the course of the next few years. The work subsequently carried out by the Working Party on Economic Accounts for Agriculture has made it possible to develop a common methodology for all the Member States. This aims to provide a coherent, practical and readily-comprehensible tool for the compilation and use of the EAA and the EAF. It was first published in 1989 ⁽³⁾.
3. The revision of the System of National Accounts in 1995 ⁽⁴⁾ and the need to adapt to economic and structural developments in the agriculture and forestry sectors have led to radical changes in the basic methodology used for the economic accounts for agriculture and forestry. These have been studied by a Task Force set up for this purpose and formally adopted by the Working Party on Economic Accounts for Agriculture. This study of the amendments to the basic methodology had to satisfy two, often conflicting, demands: on the one hand, methodological consistency with the ESA to allow harmonisation of the EAA and EAF both between Member States and with the central framework of the national accounts; and on the other hand, it had 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 accounts, it also refers to any adaptations to specific characteristics in the field of agriculture and forestry. Certain more specific methodological amendments, which had been adopted by the Working Party on Economic Accounts for Agriculture since 1989, have also been incorporated.

⁽¹⁾ Statistical Office of the European Communities, European System of Integrated Economic Accounts - ESA, 2nd edition, Luxembourg 1979.

⁽²⁾ Statistical Office of the European Communities, Economic Accounts for Agriculture: Explanatory Notes to the Tables, Doc. F/LG/19 and Economic Accounts for Forestry: Explanatory Notes to the Tables, Doc. F/LG/20.

⁽³⁾ Statistical Office of the European Communities, Manual on the Economic Accounts for Agriculture and Forestry, Theme 5, Series E, Luxembourg 1989 (and Addendum, 1992).

⁽⁴⁾ Statistical Office of the European Communities, European System Accounts - ESA 1995, , Luxembourg 1996.

I. GENERAL FEATURES OF THE ACCOUNTS

A. 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 (SNA 93)⁽⁵⁾, 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 95 is characterised by the use of three types of unit and two distinct ways of breaking down the national economy.
- 1.04.1. 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). 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).
- 1.04.2. Thus, the economy may be broken down in two different ways:
- (i) into institutional sectors or sub-sectors, 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).
- 1.05. The main purpose of the Economic Accounts for Agriculture and Forestry is to analyse the production process and primary income generated by it. The accounts are therefore based on the industry concept.
- 1.06. The Economic Accounts for Agriculture and Forestry are a satellite account providing complementary information and concepts adapted to the particular nature of the agricultural and forestry industries. Although their structure very closely matches that of the national accounts, their compilation requires the formulation of appropriate rules and methods.
- 1.07. In addition to the description of the agricultural production process and the income which it generates, it is interesting to measure the **disposable income of agricultural households** ⁽⁶⁾. Apart from income from agricultural activity, agricultural households may have other sources of income (from property, social transfers, etc.). These two types of income (income generated by agricultural production and the total income of agricultural households) are measured for two distinct purposes, which require **two distinct methods of breaking down the economy**: the first,

⁽⁵⁾ System of National Accounts, 1993. Joint publication by the United Nations, International Monetary Fund, Commission of the European Communities, OECD and World Bank.

⁽⁶⁾ See Eurostat (1995) Manual of total income of agricultural households (Rev.1), Theme 5, Series E, Luxembourg.

for the *EAA*, is based on **production units**; which are defined by reference to an activity branch, the second is based on **households** (i.e. institutional units) whose main source of income is independent of agricultural activity ⁽⁷⁾.

B. THE BASIC UNIT AND THE AGRICULTURAL INDUSTRY

1. Basic unit

- 1.08.1. In order to analyse flows generated by the production process and the use of goods and services, it is necessary to select 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 a first but practically-oriented operational approach (ESA 95, 2.105.)⁽⁸⁾.
- 1.08.2. The local KAU is defined as the part of a KAU which corresponds to a local unit. The KAU groups all the parts of an institutional unit in its capacity as producer contributing to the performance of an activity at class level (4-digits) in NACE Rev.1 (the reference classification for economic activities, cf. 1.30.1.) and corresponds to one or more operational subdivisions of the institutional unit. The institutional unit's information system must be capable of indicating or calculating for each local KAU at least the value of output, intermediate consumption, compensation of employees, the operating surplus and employment and gross fixed capital formation (ESA 95, 2.106.).
- 1.08.3. 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. 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 subdivided into the same number of local KAUs. Ancillary activities (purchases, sales, marketing, accounting, transport, warehousing, maintenance, etc.; cf. 1.18.2.), however, cannot lead to the creation of a local KAU.
- 1.09. 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. Thus, a local KAU may carry out one or more secondary activities alongside its principal activity (ESA 95, 2.107.).
- 1.10. 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 (ESA 95, 2.103.). The principal activity of a local KAU is the activity whose value added is greater than that of any other activity carried out within the unit. The classification of the principal activity is determined with reference to NACE Rev.1, first at the highest level of the classification and then at more detailed levels (ESA 95, 3.10.).

⁽⁷⁾ Recognising differing needs of analysts, the FAO has recommended the use of three types of unit as basic units for describing the Economic Accounts for Food and Agriculture, i.e. institutional units (including households), establishments (which are equivalent to the local KAUs referred to in the ESA) and products as recommended by the 1993 SNA - equivalent to the local KAUs referred to in the ESA - (cf. FAO (1996) System of Economic Accounts for Food and Agriculture, United Nations, Rome).

⁽⁸⁾ 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. 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 units of homogeneous production 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, 9.53. to 9.61.).

2. Agricultural industry

- 1.11.1. 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, an industry includes all local KAUs in the same class (4-digit level) of NACE Rev.1 and therefore engaged in the same activity as that defined in NACE Rev.1.
- 1.11.2. 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 and EAF so as (i) to approach the EAA from the **economic situation of agriculture**, i.e. to take the existence of certain (**inseparable**) non-agricultural 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.
- 1.11.3. 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 secondary activities** of agricultural units.
- 1.12. 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 co-operatives, 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.1 four-digit class are performed on the same holding. 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.
- 1.13. 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 and forestry 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**.
- 1.14. Since an industry comprises a group of **units** which carry out 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. 1.44.1., for the EAF: cf. 1.44.2.).
- 1.15.1. The agricultural industry is treated as a grouping of all KAUs at local level which perform the following economic activities (cf. Sections 1.31.1. to 1.33.3. for the precise definition of the 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.
- 1.15.2. In addition to agricultural holdings, the agricultural industry comprises units made up of groups of producers (e.g. co-operatives) which produce wine and olive oil and specialised units which provide machines, material and personnel for contract work.
- 1.15.3. 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, equipment and labour.
- 1.15.4. If, however, the work defined above is **not** performed entirely by specialised units (e.g. if the holder hires machines but employs his own workers) this activity must be recorded in Division 71 of NACE Rev.1 ("*Renting of machinery and equipment without operator*"); in this case, amounts paid to enterprises working under contract by the holders must be recorded as "other goods and services" under "intermediate consumption" (cf. 2.48.).
- 1.16. Since the purpose of the EAA is to measure, describe and analyse the formation of income from agricultural economic activity (which, in the Member States of the EU, is almost exclusively a commercial activity), it was decided to **exclude units which produce solely for own final consumption** (e.g. kitchen gardens and private livestock rearing). This type of "small" unit should be recorded if it is above the minimum threshold used in the survey on the structure of agricultural holdings. The appropriateness of using a threshold higher than this minimum threshold, though perfectly possible, must be justified. It should, however, be pointed out that agricultural production for own final consumption by holders whose holdings are larger than the minimum size must be recorded in the EAA.

3. Inseparable non-agricultural secondary activities

- 1.17. The use of the local KAU as the basic unit for the agricultural industry entails recording non-agricultural secondary activities where they cannot be distinguished from the main agricultural activity.
- 1.18.1. Non-agricultural inseparable secondary activities of local agricultural KAUs are defined as activities closely linked to agricultural production for which information on any of production, intermediate consumption, compensation of employees, labour input or gross fixed capital formation cannot be separated from information on the main agricultural activity during the period of statistical observation.
- 1.18.2. 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 consumption by the producer or as payment in kind (including compensation in kind paid to employees);
 - they must not be ancillary activities. The latter are supplementary activities (e.g. sales, marketing, warehousing, transport for own account; see ESA 95, 3.12. and 3.13., and SNA 93, 5.9. to 5.16.) carried out by an 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 activities involving gross fixed capital formation of non-agricultural products (such as buildings or machines) for own account. This production for own final consumption 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.
- 1.18.3. Only that part of a specific non-agricultural secondary activity which **is not separable** 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 non-agricultural secondary activities that are inseparable is not so much the nature of the product as the type of activity ⁽⁹⁾. 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.
- 1.18.4. Two main types of inseparable non-agricultural secondary activity may be distinguished:
- **Activities which represent a continuation of agricultural activity and which use agricultural products.** This type of activity can be found in most of the European Union 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.
 - **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.

⁽⁹⁾ Note however that some secondary activities are always considered separable from agricultural activity e.g. renting out of buildings or dwellings.

- **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 a third party. When performed for own account, they are ancillary activities, which are not recorded in the accounts (cf. 1.18.2).
 - **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.**
- 1.18.5. The list of non-agricultural secondary activities 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).
- 1.18.6. 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 production is recorded (with the exception of kitchen gardens and private livestock rearing; cf. 1.16.). The same rules apply to forestry within the EAF.
- 1.18.7. 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; co-operatives 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 Sections 1.31.3. and 1.31.4., and to the inseparable non-agricultural secondary activities.

C. MEASUREMENT OF OUTPUT

- 1.19.1. According to the ESA 95, 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 ⁽¹⁰⁾ on an adaptation of this ESA rule, with the inclusion in agricultural output of part of the production consumed by the agricultural units themselves (cf. 2.10.1. to 2.13.).

⁽¹⁰⁾ The measurement of output was previously based on the concept of the "**national farm**", a unique, notional agricultural holding performing all the agricultural production in a national economy, agricultural output being the sum of all products leaving the national farm. It was decided to discard the concept of the national farm because of improvements in (i) economic analysis of the agricultural accounts (technical coefficients and rates of value added), (ii) the consistency between the production accounts and the generation of income accounts, (iii) the comparison of technical coefficients and rates of value added between sub-branches and Member States, and (iv) consistency with the ESA and its principles.

Thus in the EAA, agricultural output represents the sum of production by all units in the industry (excluding production for intermediate consumption by the same unit), plus production used as intermediate consumption by the same unit, **provided** this output is intended for **two different basic activities** (such as crop products intended for use as animal feedingstuffs) and it meets certain criteria (set out in paragraph 2.20.7).

- 1.19.2. The ESA rule has been adapted because of the special nature of the agricultural industry:
- the amount of agricultural production 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. 1.12.). The aim of the accounts in sub-dividing 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.
- 1.19.3. 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.
- 1.19.4. 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. Details of this are explained in Chapter II.

D. SEQUENCE OF ACCOUNTS

1. Sequence of accounts as provided for in the ESA 95

- 1.20. The EAA and EAF are based on a sequence of inter-related accounts. In the ESA 95, the full sequence of accounts includes current accounts, accumulation accounts and balance sheets. 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.
- 1.21.1. The **current accounts** deal with the production, 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 95, 8.04.).
- 1.21.2. The full sequence of accounts referred to above applies only to institutional units, sectors and sub-sectors. The ESA 95 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.

2. Sequence of accounts of the EAA and EAF

1.21.3. As the Economic Accounts for Agriculture and Forestry are based on the industry concept, the sequence of accounts in accordance with the ESA 95 has to be limited to the first accounts of the current accounts:

- the **production account**;
- the **generation of income account**

whose balancing items are value added and operating surplus respectively (cf. Tables 1 and 2 below).

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

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

1.21.5. 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** may be considered some time in the future.

1.22.1. On the basis of the tables and accounting structure in the ESA 95, the **sequence of accounts in the Economic Accounts for Agriculture and Forestry** can be depicted as shown below. It does not, however, correspond to the **format in which the data are transmitted** (cf. Appendices V. and VI.).

1.22.2. It should be borne in mind that transactions and stocks referred to *in italics* in Tables 3 and 4 are items which:

- **are not relevant for the Economic Accounts for Agriculture and Forestry** 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 *Property income attributed to insurance policy holders* and D.45 *Rent* under Resources of Table 3 and headings B.8n *Net saving*, B.10.1 *Changes in net value 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.9 *Capital transfers, payable*, D.91 *Capital taxes* and D99 *Other capital transfers* in Table 3 and headings P.53 *Acquisitions less disposals of valuables*, K.2 *Acquisitions less disposals of non-produced non-financial assets*, K.21 *Acquisitions less disposals of land and other tangible non-produced assets* and K.22 *Acquisitions less disposals of intangible non-produced assets (production rights, etc.)* in Table 4. Some of these (e.g. D.91, K.2, K.21 and K.22) may be recorded in the EAA/EAF at some later date.

1.23.1. 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.

A. Current accounts

Table 1: Production account

Uses		Resources	
P.2	Intermediate consumption	50	
B.1b	Gross value added	50	
K.1	Consumption of fixed capital	10	
B.1n	Net value added	40	
			P.1 Output 100

Table 2: Generation of income account

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

Table 3: Entrepreneurial income account

Uses		Resources	
D.4	Property income	10	
D.41	Interest	5	
D.45	Rent	5	
			B.2.n/ B.3n Net operating surplus/ net mixed income 35
			D4 Property income 1
			D.41 Interest 1
			<i>D.42 Distributed income of corporations</i>
			<i>D.43 Reinvested earnings on direct foreign investment</i>
			<i>D.44 Property income attributed to insurance policy holders</i>
			<i>D.45 Rents on land and sub-soil assets</i>
B.4n	Net entrepreneurial income	26	

B. Accumulation accounts

Table 4: Capital account

Changes in assets			Changes in liabilities and net worth		
B.10.1	<i>Change in net worth due to saving and capital transfers</i>		B.8n	<i>Saving, net</i>	
			D.9	Capital transfers, receivable	10
			D.92	Investment grants	5
			D.99	Other capital transfers	5
			D.9	<i>Capital transfers, payable</i>	
			D.91	<i>Capital taxes</i>	
			D.99	<i>Other capital transfers</i>	
P.51	Gross fixed capital formation	100	B.10.1	<i>Changes in net worth due to saving and capital transfers</i>	
P.511	Acquisitions less disposals of tangible fixed assets	85			
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			
P.511f	GFCF in other works except land improvements (other buildings, structures, etc.)				
P.512	Acquisitions less disposals of intangible fixed assets (software etc.)	10			
P.513	Additions to the value of non-produced non-financial assets	5			
P.513a	Major land improvements	4			
P.513b	Costs of transferring ownership of land and production rights	1			
K.1	Consumption of fixed capital	10			
P.52	Changes in inventories	5			
P.53	<i>Acquisitions less disposals of valuables</i>				
K.2	<i>Acquisitions less disposals of non-produced non-financial assets</i>				
K.21	<i>Acquisitions less disposals of land and other tangible non-produced assets)</i>				
K.22	<i>Acquisitions less disposals of intangible non-produced assets (production rights, etc.)</i>				
B.9	<i>Net lending(+)/Net borrowing(-)</i>				

- 1.23.2. 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 his family which cannot be distinguished from his profits as an entrepreneur. This is referred to as “mixed income” (ESA 95, 8.19.).
- 1.23.3. **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.
- 1.23.4. 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 and forestry because, although certain flows may be clearly attributable to these industries, 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).

E. COMPILATION OF ECONOMIC ACCOUNTS FOR AGRICULTURE AND FORESTRY

1. Sources of data and methods of calculation

- 1.24.1. One of the main characteristics of the EAA and EAF 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.
- 1.24.2. The evaluation of crop production 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 second method 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.
- 1.24.3. Statistics on slaughterings, exports/imports of live animals and the size of herds are the main sources of data for measuring animal production. 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.
- 1.24.4. A more detailed description of the methods of calculation is given in Chapter II., under the description of transactions in products.
- 1.24.5. 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).

- 1.24.6. 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.).

2. Compilation and transmission of the Economic Accounts for Agriculture and Forestry

- 1.25. The complete list of activities in the agricultural and forestry industries (cf. Sections 1.31.1. to 1.32.) and, for each industry, the exhaustive lists of components of intermediate consumption and gross fixed capital formation, are set out in separate appendices (Appendices I.A., I.B., I.C., II.A., II.B. and II.C.). The full lists of agricultural and forestry activities have been reduced to "minimum" lists based on Divisions 01 and 02 of NACE Rev.1. These minimum lists must be used in the data transmission tables (cf. Appendices V. and VI.).

a) Compilation of the EAA/EAF production account

- 1.26. Because of the specific nature of the Economic Accounts for Agriculture and Forestry, transactions in products used to compile the EAA/EAF production account, i.e. the value of output and intermediate consumption, can be recorded using a series of tables showing the volumes, prices and values of the products of the various activities. To this end, three calculation tables for the EAA and two for the EAF are reproduced in Appendices III. and IV. The use and transmission of these tables are *optional*. However, it is thought that they could be useful to the Member States for compiling their EAA/EAF accounts. They also make it possible to verify the consistency of the data on the resources and uses of the various agricultural products.

b) Agriculture

- 1.27.1. Tables 1 and 2 of Appendix III., which relates to agriculture, are calculation tables, i.e. the output of the agricultural industry is obtained gradually by means of a progressive calculation relating to activities or groups of activities. Table 1 shows output expressed in terms of quantities and Table 2 the prices and value of the output of activities or groups of activities.
- 1.27.2. The 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 (cf. 1.31.5.).
- 1.27.3. It is only possible, however, to aggregate the necessary data insofar as the indications of quantities or prices made available for the groups of activities are still meaningful, i.e. insofar as the groups of products are not too mixed. Table 2 also features several lines for which, for obvious reasons, quantitative data are unsuitable (as, for example, the subheading "Plantations" under "Plants and flowers" which records the value of fixed capital created by the planting of orchards, vineyards, etc.).
- 1.27.4. The two tables differ in the layout of their columns. The first part of **Table 1** concerns the calculation of the **resources** of the products of agricultural activities during a given period, based on data relating to gross output, losses during processing and stocks at the beginning of the period. The second part concerns the **use** of these products. A distinction is made between intermediate consumption with its separate data for seeds, planting stock, animal feedingstuffs and others (e.g. olives for olive production ⁽¹¹⁾), and other uses such as the processing of agricultural

⁽¹¹⁾ Table 1 of Appendix III. depicts the calculation of the output of agricultural activities, in quantity terms, on the basis of resources and uses. As can be seen from that table, not all the components of uses are part of the EAA output of a given product. In fact, neither the intra-unit consumption of olives intended for the manufacture of olive oil nor of seeds are to be recorded in the output of the EAA (cf. 1.36.3. and 2.20.7.).

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 stock), sales outside the industry and sales abroad, and sales to other agricultural units. 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 stock are obtained. In the third part, **production** is calculated from the data in the first two parts of the Table.

- 1.27.5. The first part of **Table 2** contains indications of prices per unit of quantity of the various products of activities or groups of activities. It does this separately for each of the categories of use listed in Table 1 and 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. 2.20.1. to 2.20.10. and 2.28.1.).
- 1.27.6. The second part of Table 2 is a summary of Table 1 and the first part (prices) 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 in current prices (for the current year n) but also in the prices of the preceding year (n-1).
- 1.27.7. **Table 3** shows the breakdown of **intermediate consumption** into the different categories of goods and services used. Only the data relating to value are needed. The actual consumption of intermediate consumption goods to be recorded corresponds to the difference between purchases and changes in input stocks on the agricultural holdings. Data in current prices and in prices of the preceding year have to be provided for the three components.

c) Forestry

- 1.28. **Tables 1 and 2** in Appendix IV. relate to the **forestry industry**, showing the calculation of the **output** of forestry activities (in terms of quantity and value in both current prices and in the prices of the preceding year) and **intermediate consumption** (purchases, changes in stocks and their total value in current prices and in the prices of the preceding year) respectively.

d) Transmission of EAA and EAF data

- 1.29. The tables used by the Member States of the European Union for transmitting EAA and EAF data are set out in Appendices V. and VI. respectively. They are based on the minimum lists of agricultural and forestry activities and intermediate consumption. There is some grouping of the items in the generation of income account, the entrepreneurial income account and the capital account which are used in the Economic Accounts for Agriculture and Forestry.

F. THE CLASSIFICATION

1. General

- 1.30.1. The Economic Accounts for Agriculture and Forestry are an integral part of the European System of Accounts and therefore for their compilation use is made of the SOEC's General Classification of Economic Activities, NACE Rev.1. NACE Rev.1 is a 4-level nomenclature of activities which was compiled in 1990. 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 the SOEC in 1970.
- 1.30.2. NACE Rev.1 is a more detailed version of ISIC Rev.3⁽¹²⁾, adapted to specifically European circumstances. NACE Rev.1 is also directly linked to the statistical classification of products by

(¹²) ISIC Rev.3: United Nations International Standard Industrial Classification of all Economic Activities.

activity (CPA) within the European Economic Community, which in turn is based on the United Nations' Central Product Classification (CPC).

- 1.30.3. NACE Rev.1 is a classification of activities which is used for defining industries in the national accounts. It is based on the 4-level coding system described below:
- a preliminary level, containing headings identified by an alphabetical code denoting "Sections";
 - an intermediate level, containing headings identified by a 2-letter alphabetical code denoting "subsections";
 - a second level, containing headings identified by a 2-digit numerical code denoting "divisions";
 - a third level, containing headings identified by a 3-digit numerical code denoting "groups";
 - a fourth level, containing headings identified by a 4-digit numerical code denoting "classes".
- 1.30.4. 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 and forestry industries, with an additional, 2-digit differentiation providing a more detailed definition of the headings.
- 1.30.5. The industry corresponds to the group of kind-of-activity **units** at local level engaged in the same or similar **economic activity**. At the most detailed level of classification, an industry includes all local KAUs in the same class (4 digits) of NACE Rev.1 and which are therefore engaged in the same activity as defined in this nomenclature (ESA 95, 2.108.). A definition of the field of the agricultural (forestry) industry therefore requires a precise statement of:
- its characteristic **activities**;
 - the characteristic **units** of the EAA (EAF).

2. Definition of the characteristic activities of agriculture and forestry

- 1.31.1. The agricultural industry as described in the EAA corresponds to Division 01 in NACE Rev.1. The list of activities which defines this industry (cf. Appendix I.A.) has the same structure as that described above and is an integral part of NACE Rev.1.
- 1.31.2. The Economic Accounts for Agriculture and Forestry are a satellite account in the framework of the national accounts, whose concepts, principles and rules are based on the ESA 95. 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 and forestry. These particular requirements derive mainly from the specific purposes of the EAA and EAF, 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 definition of a list of **characteristic agricultural (forestry) activities**, which obviously has to be based on NACE Rev.1.
- 1.31.3. 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.1 "Agriculture, hunting and related service activities". Division 01 comprises ⁽¹³⁾:
- Group 01.1: Growing of crops; market gardening; horticulture;
 - Group 01.2: Farming of animals;
 - Group 01.3: Growing of crops combined with farming of animals (mixed farming);

⁽¹³⁾ See also Chapter 4 "Explanatory notes" in: Eurostat: *NACE Rev.1, Statistical classification of economic activities in the European Community*, Theme 2, Series E, Luxembourg, 1996.

- Group 01.4: Agricultural and animal husbandry service activities, except veterinary activities;
 - Group 01.5: Hunting, trapping and game propagation, including related service activities.
- 1.31.4. The **list of characteristic agricultural activities of the EAA** corresponds to these five groups of activities (01.1 to 01.5), but with the following differences:
- inclusion of the production of wine and olive oil (exclusively using grapes and olives grown by the same holding), the growing of **vegetable materials used for plaiting, Christmas trees, fruit trees, vines and ornamental nursery trees** (which come under Division 02, Forestry);
 - exclusion of the activities relating to the **production of seeds** upstream and downstream of multiplication and **certain activities which, in NACE Rev.1, are considered as agricultural services** (i.e. the operation of irrigation systems, the design, planting and maintenance of gardens, parks and green areas for sports facilities and the like, tree pruning and hedge trimming; only agricultural contract work is taken into account here).
- 1.31.5. 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 (cf. Appendix V., data transmission table for the EAA). 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.
- 1.32. The forestry industry as described in the EAF is Division 02 of NACE Rev.1 ("*Forestry, logging and related service activities*"). This Division is not subdivided into different groups. Only two classes of activity (**forestry and logging** and **related service activities**) are distinguished. The brief list of activities used to define this industry (see Appendix II.) is also found in NACE Rev.1 with the exception of production activities relating to vegetable materials used for plaiting, vines, fruit trees and nursery Christmas trees. As with the EAA, a minimum list (cf. Appendix VI.) was drawn up based on the list of characteristic activities of forestry used to define Group 02.0. This list serves as the basis for EAF Table 1, in which data on production are to be entered.

3. Definition of the characteristic units of agriculture

- 1.33.1. 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.1:
- Group 01.1: Growing of crops; market gardening; horticulture
 - production of seeds: only the units engaged in seed multiplication;
 - production of wine (olive oil): only those units engaged in this type of production from grapes (olives) grown by the same units **and groups of producers (e.g. co-operatives)**⁽¹⁴⁾;
 - Group 01.2: Farming of animals;
 - Group 01.3: Growing of crops combined with farming of animals (mixed farming)
 - Group 01.4: Agricultural and animal husbandry service activities, except veterinary activities
 - excluding units which perform agricultural service activities other than contract work (i.e. units which operate irrigation systems or perform services relating to the design, planting and maintenance of gardens, parks and green areas for sports facilities and the like, and tree pruning and hedge trimming).

⁽¹⁴⁾ A distinction is therefore made between the three types of unit producing wine: food businesses, groupings of agricultural producers and agricultural holdings.

- Group 01.5: Hunting, trapping and game propagation, including related service activities.
- 1.33.2. The above list should be extended to include units producing Christmas trees, fruit-trees, vines and ornamental nursery trees and production units producing vegetable materials used for plaiting.
- 1.33.3. 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. 1.15.1. and 1.15.2.). It should be remembered that units which produce exclusively for own final consumption are not included among the characteristic units of agriculture (i.e. kitchen gardens and private livestock rearing by non-holders).

4. Observations concerning various items

a) Group 01.1 "Growing of crops; market gardening; horticulture"

- 1.34.1. **Group 01.1 "Crops"** is a systematic breakdown making it possible to classify all crop production activities in the Member States of the European Union plus harvesting activities (plants or wild fruit).
- 1.34.2. In order to be recorded, the production of **fodder crops** must be part of an economic activity.
- 1.34.3. Unlike in NACE Rev.1, which attributes the production of **nursery trees** to forestry, this activity 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⁽¹⁵⁾. 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.
- 1.34.4. 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⁽¹⁶⁾. 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.
- 1.35. **Production of grape must, wine and olive oil:** the CPA treats wine and olive oil as **food products**. NACE Rev.1 classifies the production of wine and olive oil under Subsection DA "Agri-food industries" (Classes 15.93 "Manufacture of wines" and 15.41 "Manufacture of crude oils and fats"). Only the production of wine grapes and olives comes under agriculture (Class 01.13 "Growing of fruit, nuts, beverage and spice crops"). However, **following the convention** adopted

⁽¹⁵⁾ There are some discrepancies between the NACE definitions in the individual languages. According to the German and English NACE versions, only the operation of forest tree nurseries is part of NACE 02.01 ("Forestry and logging"). The inclusion of nurseries producing fruit trees, vines and ornamental nursery trees in the agricultural branch would thus not represent a deviation from NACE.

⁽¹⁶⁾ 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 specialized holdings.

- by NACE Rev.1, when wine (olive oil) is produced from grapes (olives) grown by the same unit of production, it is attributed to agriculture (Class 01.13). This convention makes it unnecessary to distinguish between the unit which grows the grapes and the unit which produces the wine. As a result, all wine (olive oil) production from grapes (olives) by the same unit, i.e. an agricultural holding, forms part of characteristic agricultural activities.
- 1.36.1. 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' co-operatives). 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 agro-food businesses is excluded from the EAA (since it is clearly industrial by nature).
- 1.36.2. 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.
- 1.36.3. 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. 2.20.4.). **Grape must** which is not vinified during the reference period should be included in the period's production. 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 in the appropriate row as a component of production.
- 1.37. **Plantations** (e.g. vineyards and orchards) are fixed capital goods, and their establishment has to be recorded under output. If the establishment of plantations is carried out for own account, the corresponding value is shown in the output table of Appendix III where the row "Plantations" intersects with the column "Own-account produced fixed capital goods". When carried out by specialized units on contract basis, the corresponding value is shown where the row "Plantations" intersects with the column "Sales".

b) Group 01.2 "Farming of animals"

- 1.38.1. As with crop-growing activities (cf. 1.34.1.), this group comprises a systematic breakdown of all the livestock and animal products produced in the Member States of the European Union. Details are given in Appendix I.A.
- 1.38.2. In the CPA, **hatching eggs** are classified together with eggs in one subcategory. However, **by convention**, they are treated, in the EAA, as semi-finished output of poultry production ⁽¹⁷⁾.
- 1.38.3. **Horse breeding** is a characteristic activity of the EAA agricultural industry 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 recreational, cultural and sporting activity: Division 92) (cf. 2.76.1). Therefore, income 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

⁽¹⁷⁾ The reason for this deviation is that, in practice, the process of production of hatching eggs and of eggs for consumption is quite different, and there is not one single output "eggs" for which the destination could be decided after its production. From the start of the production process, hatching eggs are destined to the production of poultry. They are thus treated, in the EAA, in the same way as piglets which are considered as semi-finished output of pig production.

production process is excluded from the EAA. A similar treatment is applied to bulls bred for bullfights.

- 1.39. In the economic accounts, **by-products** ⁽¹⁸⁾ 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 production should be shown in the EAA.

c) **Group 01.4 “Agricultural and animal husbandry service activities, except veterinary activities”**

- 1.40.1. The activities in Group 01.4 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; the design, planting and maintenance of gardens, parks, and green areas for sports facilities and the like; tree pruning and hedge trimming, etc.).
- 1.40.2. Agricultural service activities in the second group 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. They may, however, be recorded as inseparable non-agricultural secondary activities (within the meaning of the EAA). The traditional approach, in which agriculture is described as the cultivation of the soil, includes, by extension, all work designed to use and exploit natural resources for crop and animal production of benefit to mankind. Despite their growing economic importance, it was felt that taking account of services related to the environment would amount to an unacceptable widening of the classical approach described above.

Agricultural contract work

- 1.41.1. 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.
- 1.41.2. Notable among these activities are manuring, liming, ploughing, sowing, weeding, pest control, plant protection, hay harvesting, threshing and the shearing of sheep; in forestry, examples include land reclamation, tillage, cutting, hewing and stacking wood and hauling it to the roadside.

⁽¹⁸⁾ 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.

- 1.41.3. A characteristic feature of all these activities is that they are generally necessary as part of the production process for agricultural and forestry products and are linked to the production of these products.
- 1.41.4. Activities which are not **directly** related to the production of agricultural products, i.e. which do not take place at the **agricultural production stage**: e.g. transport for account of third parties - deliveries of milk to dairies and, in the forestry sector, the transport of timber from the roadside - is an example of a non-agricultural activity constituting part of a different industry which should not feature in the EAA or EAF (unless they are activities which are inseparable from the principal agricultural activity; cf. 1.09.).
- 1.41.5. 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 which they require, with the result that he continues to carry out the activity as such, with the help of the machines, this activity comes under Division 71 of NACE Rev.1. This situation mainly occurs with simple machines requiring relatively few repairs, and mainly during peak periods, when the machines are in greatest demand (cf. 1.15.4.).
- 1.41.6. 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).
 - 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 for 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 co-operatives** ⁽¹⁹⁾ These are large co-operatives 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 CEA, 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).

⁽¹⁹⁾ The equipment and machines belong to the co-operative, unlike with pools of machines, where they are generally the property of individual holdings.

- 1.41.7. 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. In the case of forestry, for example, the preparation of soil carried out by contractors who normally perform this type of work (e.g. ploughing), is not agricultural but forestry contract work (and should therefore be attributed to forestry).
- 1.41.8. 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 95 (Section O of NACE Rev.1). By the same token, work linked to the creation and maintenance of parks, gardens, golf courses and road-side plantations must **not** be treated as an agricultural (or forestry) production process.
- 1.41.9. **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.
- 1.41.10. 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 01.5 "Hunting, trapping and game propagation, including related service activities"

- 1.42. This group of activities comprises the following activities: (i) the hunting and trapping of animals for food, for their pelt or hide, for research purposes, zoos, or for use as pets; (ii) the production of furieries, skins of reptiles or birds originating from hunting or trapping activities; (iii) restocking with game; (iv) services to promote hunting and trapping for commercial purposes. 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 as part of the class "Farming of other live animals".

e) Forestry activities

- 1.43. **Other forestry production activities**: this heading includes the production of forest reproductive material and by-products from wood production. Some of these by-product production activities may correspond to the production of secondary products (e.g. ornamental branches and Christmas trees by the topping method) while others may correspond to main production activities (with production of wood as a by-product of the main production of natural cork, resin or tanning bark, for example). It should be noted that the product of other production activities may be attached to the forestry activity industry as other inseparable non-forestry secondary activities (game, wild mushrooms, berries, fish caught in forest lakes and water courses, non-energy minerals without ores, peat, products from quarries located in forests).

5. Discrepancy between the EAA/EAF industry and the agricultural/forestry branch of the central framework of the National Accounts

1.44.1. The EAA agricultural industry, as defined in Sections 1.31.3. to 1.33.3., 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. They can be summarised as follows:

EAA agricultural industry	=	NA agricultural branch
	+	Wine and olive oil production units (groupings of producers, co-operatives, etc.)
	+	Production units producing material for plaiting
	+	Production units producing, in nurseries, Christmas trees, fruit trees, vines and ornamental trees
	-	Units engaged in seed production (for research or certification)
	-	Production units providing associated agricultural services other than agricultural contract work (i.e. the operation of irrigation systems, designing, planting and maintaining gardens, parks and green areas for sports facilities and the like; tree pruning and hedge trimming)
	-	Non-holders kitchen gardens and private non-holder livestock rearing

1.44.2. Similarly, the differences between the forestry industry of the EAF and that of the National Accounts can be summarised as follows:

EAF forestry industry	=	Forestry industry in the National Accounts
	-	Production units producing material for plaiting
	-	Production units producing, in nurseries, Christmas trees, fruit trees, vines and ornamental trees

II. TRANSACTIONS IN PRODUCTS

- 2.01.1. 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 95 are: output, intermediate consumption, final consumption expenditure, actual final consumption, gross capital formation, exports of goods and services and imports of goods and services.
- 2.01.2. As mentioned in Sections 1.21.3. and 1.21.4., only output, intermediate consumption and gross capital formation are taken into account in the EAA and EAF. 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.

A. GENERAL RULES

1. Reference period

- 2.02. For the Economic Accounts for Agriculture and Forestry, the reference period is the **calendar** year.

2. Units

a) Quantities

- 2.03.1. 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.
- 2.03.2. In the EAF, the quantities of timber felled should be shown in **1 000 m³** of **raw wood without bark to one decimal place**.

b) Prices

- 2.04.1. In the EAA, prices should be shown **per tonne** (per **10 hl** for wine and grape must). They should be indicated **per m³** in the EAF.
- 2.04.2. In the EAA and EAF, prices should 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.

c) Values

- 2.04.3. Values should be shown in **millions** of units of national currency (in the case of Spanish peseta and Italian lire: **billions**).

3. Time of recording

- 2.05. The ESA 95 (1.57.) 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.

a) Output

- 2.06.1. 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.
- 2.06.2. In the ESA 95, 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 95 (3.58.), the output of agricultural products should be recorded as if it is produced continuously over the entire production period (and not simply when the crops are harvested or animals slaughtered). Growing crops, standing timber and stocks of fish or animals reared for the purposes of human consumption should be treated as stocks of work-in-progress during the production process, and transformed into stocks of finished products when the process is completed.
- 2.06.3. 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 reference 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 and EAF 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 reference period)⁽²⁰⁾.
- 2.06.4. However, for farm products whose production cycle is shorter than the reference 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. 2.67.2.). In these cases, growing crops are not considered to be stocks of work-in-progress.
- 2.06.5. 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), plantations, and standing timber. 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. 2.67.2.).
- 2.06.6. When products with a long production cycle which have been recorded as work-in-progress are harvested (crop production), slaughtered (animals) or felled (standing timber), the production process is completed and the work-in-progress is transformed into stocks 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 value of the finished product in proportion to the costs incurred each period (SNA 93, 6.96.).
- 2.06.7. **Animals:** animal production normally requires a period of time, possibly spanning several reference years 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).
- 2.06.8. 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

⁽²⁰⁾ Cf. Paragraphs 6.72. to 6.79. and 6.94. to 6.100. of the SNA.

- 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.
- 2.06.9. 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 gross fixed capital formation right from their birth (own-account GFCF i.e. they are considered as work-in-progress and their growth is registered as production, cf. ESA 95, 3.112.). Otherwise, animals are included in stocks 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). Animals which have been removed from breeding herds before being slaughtered should also be counted as stocks and not capital assets.
- 2.06.10. 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. 2.19.2.).
- 2.06.11. **Wine:** production 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 a reference period in the same way as eggs hatching in incubators and shown in the EAA as wine in the form of work-in-progress.
- 2.06.12. **Assets cultivated in plantations:** goods intended for own-account gross fixed capital formation (other than livestock) such as plantations yielding repeat products should be recorded as GFCF at the time of production of the assets concerned.
- 2.06.13. **Standing timber:** output of standing timber for felling spans several years and 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) ⁽²¹⁾. Nevertheless, the implementation of the ESA rule is relatively complex. It also requires a large number of data (especially for calculating output) which makes it difficult, which is why although the ESA 95 recommendation forms the reference principle to be applied in the drawing up of the EAF, it is agreed that in cases where standing timber stocks are relatively regular (i.e. their volume does not fluctuate substantially from one year to the next), timber output is to be recorded only at the time of felling ⁽²²⁾.

b) Intermediate consumption

- 2.07.1. 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.
- 2.07.2. 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 ⁽²³⁾.
- 2.07.3. **Services** are recorded at the time of **purchase**. Since services cannot be stored, the time of purchase is also the time of consumption.
- 2.07.4. The following services are an exception to this rule:

⁽²¹⁾ The value of timber output as work-in-progress should be estimated in advance on the basis of a rate of discount for computing the present value of the expected future returns and the actual costs incurred, plus a mark-up for the estimated operating surplus or an estimate of mixed income.

⁽²²⁾ In this practical rule, standing timber is not considered as stocks of work-in-progress.

⁽²³⁾ Cf. 2.09.2. to 2.09.4. for the time at which stocks are recorded.

- services connected with the purchase of goods, such as trade and transport services, are recorded as intermediate consumption at the time the goods in question are consumed (cf. 2.50.2);
- 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.

c) Gross fixed capital formation

- 2.08.1. Gross fixed capital formation 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. 2.54.1.). Secondly, own-account gross fixed capital formation 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 stocks as work-in-progress, cf. 2.06.9.).
- 2.08.2. 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 gross fixed capital formation at the end of the period.
- 2.08.3. 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 gross fixed capital formation since the land is a non-produced asset. The net acquisition of land (and other non-produced tangible assets) is recorded in the capital account ("acquisitions of non-financial assets account").

d) Changes in stocks

- 2.09.1. Changes in stocks correspond to the difference between goods entering and goods withdrawn from stocks over the reference period.
- 2.09.2. **Goods entering stocks** are either goods intended for consumption in the production process later (input stocks), 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 stocks), in which case they are recorded as stocks when their production is completed.
- 2.09.3. 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 recorded as stocks at the end of that period (except for short-cycle standing crops, cf. 2.06.4.; 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 stocks).
- 2.09.4. **Goods withdrawn from stocks** are, in the case of input stocks, goods entering the production process or, in the case of output stocks, goods leaving the industry to be sold or to serve some other use. In the first case, the goods are deducted from the industry stocks at the time of their actual intermediate consumption in the production process; in the second case, they are deducted from the stocks at the time of their sale or other use.

B. OUTPUT

(cf. ESA 95, 3.07.-3.58.)

1. General comments on the concepts of output in the ESA 95 and EAA

- 2.10.1. In the ESA 95, the term "production" denotes the process and "output" the resulting goods and services; it is important to bear this distinction clearly in mind. According to the ESA 95 (3.14.), output covers all products manufactured during the accounting period.
- 2.10.2. According to the **ESA 95**, 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 stocks at the end of the 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 separately. They are therefore recorded neither as output nor as intermediate consumption of the unit.
- 2.11. The **concept of output used in the EAA and EAF** which is related to the concept of "**total output**" is based on an adaptation of the ESA 95, since some agricultural goods and services produced and consumed during the same accounting period 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 Section 2.20.7. The difference between the ESA 95 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.
- 2.12. As mentioned in Section 1.19.2., this modification 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 sub-branches 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 currently play an important role in the formation and development of agricultural income.
- 2.13. Although it is not proposed by the ESA 95, the rule adopted in the EAA is provided for by the SNA (cf. SNA 93, Annex I., 15.) because of the special nature of agriculture, and by the FAO Methodological Manual⁽²⁴⁾. 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.

⁽²⁴⁾ FAO (1996) System of economic accounts for food and agriculture, United Nations, Rome.

2. Output of agricultural activity: quantities

- 2.14. In Elaboration Tables 1 and 2 of the Economic Accounts for Agriculture and in Table 1 of the Economic Accounts for Forestry (in Appendices III. and IV.), output is progressively broken down by the different items of a minimum list, first in quantity terms (Table 1 of the EAA and EAF) (cf. 1.27.1 to 1.27.7. for a more detailed description).

Schematic representation of resources and uses of agricultural products

Gross output						
Losses	Usable output					Initial stocks (IS)
Total available resources						
Intra-unit consumption	Processing by producers	Own final consumption	Total Sales	S(*)	Final stocks (FS)	
					FS-IS (**)	

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

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

- 2.15. The starting point for this progressive calculation ⁽²⁵⁾ is either:

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

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

a) Gross output

Gross output: (1q) ⁽²⁶⁾

- 2.16.1. In accordance with the industry concept, all the products of the agricultural activities of agricultural units within the industry (as mentioned in Sections 1.31.3. and 1.31.4.) need to be measured. In line with the convention adopted in Section 1.18.6. (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 which produce solely for own consumption (cf. 1.16).
- 2.16.2. For those items of the minimum list which comprise a range of fairly different products (e.g. fruit, vegetables), there is little meaning in entering one overall quantity figure. In such cases and where only data on values are available, quantity data can be omitted.

⁽²⁵⁾ The EAF do not yet contain this type of progressive calculation because of the difficulty in acquiring data; quantities and prices are shown only as overall figures.

⁽²⁶⁾ This column is for completion by those countries whose official harvest statistics include wastage.

b) Losses

Losses: (2q)

- 2.17.1. This includes 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.
- 2.17.2. Products offered for sale by producers but remaining unsold and therefore spoiled (particularly fruit and vegetables) should also be entered here. They must be *listed separately*.
- 2.17.3. Any entry in the "Losses" column (2q) in the rows provided, of data on livestock production depends on the stage of development of these animals and their use, as well as the methods of calculation and type of basic statistical material of each country. If output is calculated from data on initial and final stocks and from sales of animals and their transfer to capital assets, it is unnecessary to record any losses (whatever the type) occurring during the production of animals regarded as work-in-progress (such as animals for slaughter in their fattening period) since such losses are already deducted from the changes in stocks of work-in-progress. On the other hand, losses (whether routine, accidental or exceptional) of animals used as factors of production (dairy cows, breeding animals, etc.) should be entered in the accumulation accounts (the "Other changes in the volume of assets" account) and have no impact on the value of animal output.
- 2.17.4. Losses occurring during production in the reference period concerned, as well as losses of animals imported for rearing or fattening or born during previous periods should also be mentioned if the estimation of animal production is not based on stocks data but instead on a well-founded calculation such as actual birth figures.
- 2.17.5. Similar treatment should be given to losses of own-account produced fixed capital goods such as plantations yielding repeat products (vineyards, fruit trees, etc.). It should be stressed that losses affecting plantations which are already producing must be recorded as fixed capital consumption or entered in the "Other changes in the volume of assets" account.
- 2.17.6. A detailed description of the recording of losses in agriculture is presented in Appendix VIII.

c) Usable output

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

- 2.18. This is the first item to be entered by countries whose reference harvest statistics do not include losses (cf. 59.2). 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.

d) Initial stocks

Initial stocks: (4q)

- 2.19.1. These constitute the finished or semi-finished stocks of own products existing on the holdings of the industry (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. 2.72 and following regarding the treatment of livestock).
- 2.19.2. The "Poultry" row should also include eggs hatching in incubators at the start of the reference period since they are regarded as semi-finished poultry products (cf. 2.06.10.).

e) Total available resources

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

f) Intra-unit consumption

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

- 2.20.1. These columns must show agricultural products produced **within the agricultural unit** (local KAU) and used by the unit as inputs into the production process within the same accounting period.
- 2.20.2. All agricultural products (except livestock, cf. 2.23.4. and 2.75.2) 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).

Classification of intra-unit consumption

- 2.20.3. Intra-unit consumption can be broken down according to the use of the products concerned:
- 2.20.4. **Products consumed within the industry by the same agricultural activity (i.e. the same class of activity, at NACE Rev.1 four-digit level):**
- seed (for cereals, vegetables, flowers, etc.): re-used for the same crop;
 - wine grapes and grape must: used in wine production;
 - olives: used in olive oil production;
 - milk: used in livestock feed.
- 2.20.5. **Products consumed within the industry by a different agricultural activity (i.e. a different class of activity, at NACE Rev.1 four-digit level).**

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). Crop products used in animal feed 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 feed 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

- 2.20.6. Agricultural products undergoing intra-unit consumption are not included in the measurement of the agricultural 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.

2.20.7. These criteria are as follows:

1. **The two activities exercised should come under different four-digit levels of NACE Rev.1** (Division 01: “Agriculture, hunting and related service activities”). The application of this criterion thus precludes, for example, the valuation of milk used for livestock feed and 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.

2.20.8. In line with the definition of the selection criteria for including intra-unit consumption products in the measurement of output (cf. 2.20.7.), **only crop products used in animal feed (marketable or not) are to be recorded in the agricultural output of the industry.**

2.20.9. 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. 2.20.7.). When the change from output to intermediate consumption takes longer than the reference year in question, then the corresponding quantities of output should be listed in the “final stocks” column of the product concerned during the reference year.

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

g) Processing by producers

Processing by producers: (10q)

2.21.1. Entries under this heading should show 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. 1.18.1.). 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. Products resulting from processing at the producer’s will naturally be indicated in the output of the Agriculture ‘sub-sector’ in the National Accounts(cf. 1.04.1. and 1.04.2.).

2.21.2. 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. 1.17.). 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.

h) Own final consumption

Own final consumption: (11q)

2.22.1. This includes:

- (i) products consumed by the farmers’ households which produced them;
- (ii) 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.

- 2.22.2. 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 "*Manufacture of food products, beverages and tobacco*" industries (Subsection DA of NACE Rev.1), 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. 2.29.3.) and included in the output of the agricultural industry.
- 2.22.3. The imputed rental value of the owner-occupied housing unit is **not** recorded here but in the branch "*Letting of own property*" (Class 70.20 of NACE Rev.1). Letting of accommodation is a non-agricultural activity which is always considered to be separable from agricultural activity.

i) Sales

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

- 2.23.1. 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).
- 2.23.2. 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. Animals classed as fixed assets and taken out of the productive herd are transferred into stocks 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 livestock own-account produced fixed capital goods ⁽²⁷⁾ then recorded in the production account.
- 2.23.3. **Livestock considered to be stocks:** the disposal of livestock considered to be stocks to another holding constitutes a sale in accordance with the definition given above. This sale may be offset by a removal from stocks if the livestock is recorded as stocks at the start of the reference period (otherwise, only sales are recorded).
- 2.23.4. The acquisition of livestock is a stock entry 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 stock entries of work(products)-in-progress 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)⁽²⁸⁾. In view of this special treatment of trade in live animals between agricultural units, there is no intermediate consumption under "livestock and animal products" ⁽²⁹⁾.
- 2.23.5. **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 gross fixed capital formation of agriculture). In the case of trading between resident holdings, sales and corresponding purchases offset each other (except for the transfer costs).

⁽²⁷⁾ Output for these animals is calculated by adding own-account produced fixed capital goods (=entries less disposals of assets) and sales (=disposals).

⁽²⁸⁾ 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".

⁽²⁹⁾ An identical treatment applies to other agricultural and forestry products having the character of stocks (such as standing timber destined to be felled).

- 2.23.6. **Recording of imports of live animals (not intended for immediate slaughter):** As in the case of trade between resident holdings, livestock treated as stocks (other than animals for immediate slaughter) and imported during the reference period by units of the agricultural industry are recorded as stock entries 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.
- 2.23.7. 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 stocks), all imports are considered to be of animals intended for building up stocks 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.

j) Own-account produced fixed capital goods

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

- 2.24.1. 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⁽³⁰⁾;
 - animals produced in agricultural units and transferred to their fixed capital (cf. 2.62.13.). 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. 2.73.).
- 2.24.2. Since 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, none of the quantities concerned should be indicated at the intersection of column 13q with the "Plantations" row.

k) Final stocks

Final stocks: (14q)

- 2.25.1. 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.
- 2.25.2. 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 in stocks.

l) Total uses

Total uses: (15q) (not including intra-unit consumption)

- 2.26. This entry is the sum of columns 10q to 14q.

⁽³⁰⁾ Cf. 2.61.1. and following. It should be noted that forest plantations of trees not yielding repeat products do not constitute fixed capital goods. They are considered as stocks (of work-in-progress) which provide output once only, when they are felled (and are thus not used repeatedly in a production process for over a year) (cf. 2.06.13.).

m) Change in stocks

Change in stocks: (16q) = (14q) minus (4q) = additions to stocks (A) minus withdrawals from stocks (W)

- 2.27. This column indicates the change in stocks in the industry (excluding stocks at the various marketing stages) during the reference year. It is measured by calculating the difference between stock entries and withdrawals, or the difference between final and initial stocks. In the latter case other changes in volume and holding gains (net of losses) are to be deducted in the calculation of values (cf. 2.68.5. and following).

n) Output of agricultural activities

Output of agricultural activities: (17q)

- 2.28.1. In accordance with the concept of output and the above-mentioned rules for recording intra-unit consumption, processing of agricultural products and own final consumption (cf. Sections 2.20.8., 2.21.1. and 2.22.1.), the output of agricultural activities can be depicted as follows:

Resources	Uses	Agricultural output of the agricultural industry
Gross output	Sales (total, excluding trade in animals between agricultural holdings)	X
	Change in stocks (with producers)	X
- Losses	Own-account produced fixed capital goods (plantations yielding repeat products, productive animals)	X
	Own final consumption (of agricultural products)	X
= Usable output	Processing by producers (of agricultural products, separable activities)	X
	Intra-unit consumption:	
	<ul style="list-style-type: none"> ▪ for the same activity: (seeds, milk for livestock feed, wine grapes, olives for olive oil, hatching eggs) 	
	<ul style="list-style-type: none"> ▪ for a separate activity: 	
	<ul style="list-style-type: none"> • crop products used in animal feed (cereals, oilseeds, fodder crops, marketable or not, etc.) 	X
	<ul style="list-style-type: none"> • animal by-products used in crop production (slurry, manure) 	

- 2.28.2. Compared with the former "final output" concept on which the EAA used to be based, the new 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)**.

2.28.3. For the EAF, the following special features should be noted:

- In line with the stipulation set out in Section 2.06.13., stock changes for standing timber are only included when they are not regular. In cases where standing timber stocks are relatively regular, timber output is to be recorded only at the time of felling. It should be noted that new forest plantations of trees not yielding repeat products, constituting additions to existing stocks of forest areas do not constitute own-account fixed capital because these assets are not intended to be used continually for their production (instead they have a single production stage)⁽³¹⁾. Only the **actual cut** during the reference period should be treated as raw timber production. Major reductions of resources caused by extraordinary fellings (e.g. as a result of favourable market conditions, or natural disasters such as windthrow, or attack by pests or fungus diseases, etc.) should also be treated as output within the EAF definition. To make it possible to estimate such distortions in comparisons between countries and over time, these **exceptional timber cuts** should be included in Table 1 of the EAF as a **sub-entry** with an explanatory note.
- As in the EAA, all products of forestry production and inseparable non-forestry secondary activities are included in the output of the forestry industry. Likewise, the timber production of units producing exclusively for own final consumption is excluded from output.

3. Output of inseparable non-agricultural secondary activities

2.29.1. A distinction is made between two types of “inseparable non-agricultural secondary activities” (cf. 1.18.4.):

- “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.

2.29.2. Since these activities include a variety of products (goods and services) whose quantities cannot be added together, only a value amount should be indicated, at the intersection of column 17 with the rows “processing of agricultural products” and “other inseparable secondary activities (goods and services)”.

2.29.3. The product of these activities is either intended for sale, barter, payment in kind, own final consumption (cf. 2.22.2.) or kept in stocks.

4. Output of the agricultural industry

2.30. In accordance with the definition of the output of the agricultural industry (cf. 1.11.3.), the output of the agricultural industry is made up of the sum of the output of agricultural products (cf. 2.28.1. to 2.28.3.) and of the goods and services produced in inseparable non-agricultural secondary activities (cf. 2.29.1. to 2.29.3.).

5. Valuation of output

2.31.1. 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 payable on that unit as a consequence of its production or sale (i.e. taxes on products) plus any subsidy receivable on that unit as a consequence of its production or sale (i.e. subsidies on products). The

⁽³¹⁾ Obviously, this rule does not apply to new forestry plantations of trees yielding repeat products, such as cork (cf. 2.24.1., Footnote 29).

basic price excludes any transport charges invoiced separately by the producer. However, it includes any transport margins charged by the producer on the same invoice, even if they are included as a separate item on the invoice (cf. ESA 95, 3.48.).

- 2.31.2. Components of output such as sales, payments in kind, additions to stocks 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.
- 2.31.3. When establishing the EAA and EAF according to the "net" recording system (cf. 3.17.1. and Appendix IX.), the VAT invoiced by the producer is not included when establishing the basic price.
- 2.31.4. The price obtained by the producer corresponds to the **producer price** (not including invoiced VAT) as defined in the SNA 93 (i.e. the **ex-farm price** for agricultural products or **price delivered to roadside**⁽³²⁾ for timber ready to be removed). 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.
- 2.31.5. 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. 3.16.1. and 3.26.1.), on the one hand, and other taxes and subsidies on production (cf. 3.18. and 3.27.1.), 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. 3.26.3).
- 2.31.6. 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. This is why the column "sales" in the 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). 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 and EAF.
- 2.31.7. In forestry, sellers and buyers do not always choose or invoice the "delivered to roadside" price for timber. Often, timber is sold standing and the buyer takes over the felling and transport of the timber to the roadside. In such cases, the price entered in the EAF should include not only the agreed price but also the price for felling and delivery to the roadside. Whoever may provide these supplementary services, they are considered in every case to be forestry services. They are also entered under intermediate consumption, fixed capital consumption and costs of the factors of production used.
- 2.31.8. 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 stocks (cf. 2.70.1. to 2.71.6.).

⁽³²⁾ This "delivered to roadside" price also covers the costs of preparing the cut timber, unloading, depositing and piling it up on the roadside.

C. INTERMEDIATE CONSUMPTION

(cf. ESA 95, 3.69.-3.73.)

1. Definition

- 2.32. 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 fixed capital consumption. The goods and services concerned are either transformed or used up in the production process (cf. ESA 95, 3.69.). 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).
- 2.33. Intermediate consumption excludes new or existing acquired fixed assets which have been produced in the economy or imported: they are recorded as gross fixed capital formation (cf. 2.49. (c)-(f)). This concerns items which are non-agricultural fixed 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. Tools and other durable goods (saws, hammers, screwdrivers, etc.) are recorded as intermediate consumption when their purchase value does not exceed the 500 EURO threshold (at 1995 prices) per item (or for total purchases, if obtained in large quantities). Beyond this threshold, purchases of these durable capital goods are recorded in gross fixed capital formation (cf. ESA 95, 3.70.).
- 2.34. 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.
- 2.35. Intermediate consumption also includes *all* expenditure on goods and services which, while benefiting employees, are nonetheless mainly for the benefit of the employer⁽³³⁾ (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).
- 2.36.1. In view of the adoption of the concept of industry and kind-of-activity unit at local level as the basic unit of the EAA and EAF, 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.
- 2.36.2. Trade in livestock which is similar to stocks of work-in-progress (such as piglets and eggs for hatching, cf. 1.38.2.) and is carried out between agricultural units, and imports of these, are not recorded as intermediate consumption (or as any type of output) (cf. 2.23.3. to 2.23.7.). The same rule applies to trade in standing timber for felling.
- 2.36.3. 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. 2.20.1. to 2.20.9.; 2.21.2.).
- 2.37. It should be noted that in accordance with the provisional convention of the ESA 95, all indirectly measured financial intermediation services (FISIM) supplied by resident producers are recorded in the intermediate consumption of the overall economy. In the event that it is decided in the ESA 95

⁽³³⁾ This is generally the case if production is promoted, and in some cases only made possible, by this expenditure by the employer.

to make a breakdown of indirectly measured financial intermediation services by user sector and user industry, the FISIM used by the agricultural industry should be recorded as intermediate consumption of the agricultural industry. (cf. ESA 95, Annex I).

- 2.38. In Table 3 of Appendix III. for the EAA and Table 2 of Appendix IV. for the EAF, intermediate consumption is broken down into 10 and 8 separate headings respectively. It can be observed that trade margins and transport and insurance services should be included in the purchase value of the intermediate consumption of these tables, in accordance with their valuation at the price of acquisition.

2. Elements of intermediate consumption

a) Seeds and planting stock

- 2.39.1. 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, Christmas tree plantations and forest areas. 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. 2.20.4.).
- 2.39.2. 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

- 2.40. 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.

c) Fertilisers and soil improvers

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

d) Plant protection products and pesticides

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

e) Veterinary expenses

- 2.43. 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

- 2.44.1. 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 in a sub-heading of the "animal feedingstuffs" heading as intra-unit consumption (cf. 2.20.9.). They are also recorded in output.
- 2.44.2. 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. Where no special row is provided for them in Table 3 (Appendix III.), they should be shown in the "Other goods and services" row.

g) Maintenance of materials

2.45. 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. 2.55.4. to 2.55.6.);
- purchases of crop protection equipment (excluding preparations for plant protection and pest control, cf. 2.42.), such as detonators, anti-hail protection, anti-frost smoke, etc.

h) Maintenance of buildings

2.46. 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. 2.55.4. to 2.55.6.).

i) Agricultural services

2.47. These agricultural services (which constitute the hire of machines and equipment **with** the corresponding labour) are an integral part of agriculture (cf. 1.41.1. to 1.41.10.) and are recorded as intermediate consumption and also entered under output.

j) Other goods and services

2.48. 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 tangible or intangible) such as the hire of machines and equipment **without** operating staff (cf. 1.15.4.) 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. 3.31.3.);
- (b) Fees for workers' medical examinations;
- (c) Fees for agricultural consultants, surveyors, accountants, tax consultants, lawyers, etc.;
- (d) Purchases of services of scientific research, 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. 2.35., 2.49. (b) and 3.09.1.) 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. 2.50.1. and 2.50.2., 2.31.1.), 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/EAF. 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 etc. 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 should therefore be made to national accounts when completing this item in the EAA (for the recording of subsidies related to insurance services see 3.27.6., Footnote 53);

- (h) Stud fees;
- (i) Billed bank charges (but **not** interest for bank loans) in all cases and indirectly measured financial intermediation services only when these are broken down by user sector/user industry (cf. 2.37.; 3.30.6.);
- (j) Subscriptions, fees for membership of professional associations such as chambers of agriculture, chambers of commerce and agricultural trade unions;
- (k) Subscriptions to agricultural co-operatives;
- (l) 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 intangible assets such as patented assets, trade marks, copyright, milk quotas or other production rights, etc. Purchases of these non-produced intangible 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. 3.21.2. (e), and ESA 95, 4.80. (d));
- (p) purchases of small tools, working clothing, spare parts and durable equipment of low value (less than 500 EURO at 1995 prices) **or** with a normal service life of less than one year (cf. 2.55.2.);
- (q) purchases of tools, equipment and working clothing by employees with a special allowance provided for this purpose or withheld from their wages and salaries by contractual agreements.

k) Items not included in intermediate consumption

2.49. Intermediate consumption, however, does not include:

The distinction between intermediate consumption and compensation of employees:

- (a) Goods and market services which production units provide to their employees at no cost or at a reduced rate, **insofar 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. 3.10.1.);

- (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. 3.10.1. (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. SNA 93, 7.41.);

The distinction between intermediate consumption and gross fixed capital formation:

- (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 gross fixed capital formation (cf. 2.63.1.);
- (d) Financial leasing payments made for the use of fixed assets for agriculture and forestry do not constitute purchases of services but transactions to be entered partly under interest (in the income account) and partly as reimbursement of the capital (in the financial account) (cf. 2.54.1.);
- (e) Expenditure on **restoration** (for **maintenance**, cf. 2.45. and 2.46.) 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 gross fixed capital formation since it goes well beyond what is necessary to maintain fixed assets in working order (cf. 2.55.4 to 2.55.6);
- (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 95, 3.111.). This is regarded as forming part of gross fixed capital formation (cf. 2.58.1 and 2.58.2).

Others:

- (g) Goods and services produced and consumed within the same unit in the same reference period (except for certain products, cf. 2.20.8., 2.44.1., 2.7.). These goods and services are not recorded as output either;
- (h) Rents paid for the use of land listed under "Rent" (cf. 3.31.1.);
- (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. 3.36.2.);
- (k) **Net** insurance premiums (cf. 2.48. (g),);
- (m) 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);
- (n) Water rates paid purely as a tax and unrelated to the quantities of water consumed.
- (o) The purchase of services from Public Bodies under certain circumstances (cf. 3.21.2. (e)).

3. Valuation of intermediate consumption

- 2.50.1. 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.
- 2.50.2. 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 95, 3.06.).
- 2.50.3. 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).
- 2.50.4. 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).
- 2.50.5. 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 scheme. The difference between the deductible VAT which agricultural units under the flat-rate scheme 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. Appendix IX.).

D. GROSS CAPITAL FORMATION

(cf. ESA 95 3.100.-3.116.)

- 2.51.1. Gross capital formation comprises:
- gross fixed capital formation;
 - changes in stocks;
 - acquisitions less disposals of items of value.
- 2.51.2. Since the EAA and EAF are accounts drawn up in order to depict flows generated by units within their production function, only gross fixed capital formation and changes in stocks are dealt with below.
- 2.51.3. **Gross** capital formation means gross of fixed capital consumption. Net capital formation is obtained by deducting fixed capital consumption from gross capital formation. Fixed capital consumption 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. 3.36.2.).

1. Gross fixed capital formation

a) Definition

- 2.52. Gross fixed capital formation (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 stemming from the productive activity of producer or institutional units. Fixed assets are tangible

or intangible assets produced as outputs from production processes that are themselves used repeatedly, or continuously, in other production processes for more than one year (cf. ESA 95, 3.102.).

b) Considerations for the national economy as a whole

- 2.53.1. The gross fixed capital formation of a national economy is understood to mean the proportion of the gross domestic product 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 stocks). 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.
- 2.53.2. 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 second-hand from producer units, shipping vessels which are sold second-hand 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 gross fixed capital formation must be reduced as a result. This is why the ESA 95 uses the concept of net acquisitions of existing produced goods for calculating gross fixed capital formation: this heading allows capital disposals, i.e. reductions in fixed capital to be taken into account.
- 2.53.3. 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 second-hand 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 gross fixed capital formation is broken down by user branch, net acquisitions can be positive for some branches.

c) Transfer of ownership criterion

- 2.54.1. The determination of the gross fixed capital formation of sectors or branches of the economy is based on the criterion of **transfer 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 he is a producer) and not of the lessor, who keeps a financial asset equivalent to a notional claim (cf. 2.49. (d) and Annex II of the ESA 95 on the distinction between the different forms of hire of durable goods)⁽³⁴⁾.
- 2.54.2. Application of the criterion of transfer of ownership depends on the basic 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

⁽³⁴⁾ 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.

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.

d) Acquisitions

- 2.55.1. 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 tangible assets, natural growth in agricultural assets (livestock and plantations) and costs associated with the transfer of ownership of non-produced assets (cf. ESA 95, 3.103. (a)).
- 2.55.2. It should be remembered that in order to qualify for recording as gross fixed capital formation, acquired durable goods have to have a unit value (or total value if they have been obtained in large quantities) of over 500 EURO at 1995 prices (cf. 2.33.).
- 2.55.3. The same applies to the purchase or production for own account of a set of durable goods needed for an **initial installation**. 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 fixed capital consumption 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.
- 2.55.4. 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.
- 2.55.5. 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 item, even services for current maintenance may be very costly (cf. 2.49. (e)). Strictly speaking, the allocation of services performed on existing fixed capital goods either to the "current maintenance" or "gross fixed capital formation" 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 fixed capital consumption.
- 2.55.6. The 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. SNA 93, 10.49.).

e) Disposals

- 2.56. 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 95, 3.103. b) and 3.104). 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. SNA 93, 10.35. and 10.39.). 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.

f) Valuation of gross fixed capital formation

- 2.57. Gross fixed capital formation 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. 2.54.).

g) Costs of transfer of ownership

- 2.58.1. The costs of transfer of ownership of assets constitute gross fixed capital formation 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.
- 2.58.2. The gross fixed capital formation 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 gross fixed capital formation of the seller only includes the value of the goods sold (exclusive of transfer costs)⁽³⁵⁾. In the case of **non-produced assets** (such as land, or patented assets such as production rights) which are not included in gross fixed capital formation, these costs must be separated from the acquisition/disposal of these assets and recorded under a different heading as gross fixed capital formation of the acquirer.

⁽³⁵⁾ 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.

h) Gross fixed capital formation and change in the value of assets

2.59.1. 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 95, 7.08.) between the end and beginning of an accounting period, the change in the value of assets can be described as follows:

Value of assets at the end of the period

- | | | |
|--|---|---|
| - Value of assets at the beginning of the period | = | Gross fixed capital formation |
| | | - Consumption of fixed capital |
| | | + Other volume changes |
| | | + Nominal holding gains (net of losses) |

2.59.2. 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.

2.59.3. 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 industries of agricultural and forestry activities are concerned, changes in volume may be put into three main categories:

- exceptional losses or losses due to disasters (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. 2.62.1, Footnote 38) or agricultural buildings which have been altered for private or other economic use.

2.59.4. Gross fixed capital formation and consumption of fixed capital (cf. 3.36.1. to 3.36.9.) are therefore not the only elements to take into account when analysing the change in the value of assets.

i) Elements of gross fixed capital formation

2.60.1. The ESA 95 distinguishes between four types of elements which should be recorded as GFCF (cf. ESA 95, 3.105.):

- acquisitions less disposals of new or existing tangible fixed assets (dwellings, other buildings and structures, machines and equipment, cultivated assets);
- acquisitions less disposals of new or existing intangible fixed assets (mineral exploration, computer software, artists' and other works);
- major improvements to tangible non-produced assets, including land;
- costs associated with the transfer of ownership of non-produced assets such as land and patented assets.

- 2.60.2. For the **EAA (and EAF)**, a distinction is made between five types of elements of gross fixed capital formation:
- plantations yielding repeat products;
 - livestock;
 - tangible and intangible fixed 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.);
 - land improvement;
 - costs associated with the transfer of ownership of non-produced assets such as land and production rights.
- 2.60.3. Gross fixed capital formation 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. Trees cultivated to produce wood as well as 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).

j) Plantations

- 2.61.1. According to ESA 95 (3.103.) gross fixed capital formation 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.
- 2.61.2. 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 and trees which have reached maturity.
- 2.61.3. The first two elements of GFCF in plantations represent own-account agricultural output of GFCF.
- 2.61.4. 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 before the end of their normal growing life. 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⁽³⁶⁾). In this second case, disposals of plantations to be recorded as negative gross fixed capital formation should represent a modest amount.

- 2.61.5. Consequently, in the majority of cases (i.e. except in the second case set out in Section 2.61.4.), the value of the grubblings 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.
- 2.61.6. Similar treatment should be applied in the EAF to plantations of trees intended for producing repeatedly forestry products (such as cork, resin, etc.)⁽³⁷⁾.
- 2.61.7. The treatment of grubblings of plantations should be analysed in relation to the calculation of consumption of fixed capital. In accordance with the ESA 95, **there is consumption of fixed capital in the case of plantations** corresponding to the depreciation of the plantations when they have reached maturity. Plantation grubblings ⁽³⁸⁾ should therefore be interpreted as follows:
- grubblings carried out at the end of the normal growing life of plantations correspond to plantations withdrawn from assets. These grubblings are taken into account in the consumption of fixed capital throughout the productive life of the plantations;
 - "exceptional" grubblings are grubblings 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 the set of EAA accounts.
- 2.61.8. The change in the value of plantations over the accounting period therefore comprises the following four components (cf. 2.59.1.):
- gross fixed capital formation, which corresponds to the difference in value between acquisitions and disposals during the reference period, as defined in Sections 2.61.1. to 2.61.6.;
 - consumption of fixed capital, which measures the depreciation of plantations, as defined in Section 2.61.7.;
 - other changes in "volume" which take account of the effects of unforeseen events on plantations (such as exceptional grubblings) and which are recorded in the "other changes in volume of assets" account (cf. the definition in Sections 2.59.3. and 2.61.7.);
 - 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 95 accumulation accounts (cf. the definition in Section 2.59.2.).
- 2.61.9. In Tables 1 and 2 of Appendix III. below, investments in cultivated crop assets, i.e. plantations, are 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**.

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

- (a) for calculating the value of output (Table 2): 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

⁽³⁶⁾ In this case, the activity of felling the plantation and selling the timber come under forestry activity.

⁽³⁷⁾ Felling should represent a more significant amount for recording as disposals in forestry GFCF.

⁽³⁸⁾ 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.

value of the materials consumed (including nursery plants) and services rendered over the period;

- (b) in the calculation of intermediate consumption (Table 3), the values of the different intermediate consumption goods used (including nursery plants);
- (c) for gross fixed capital formation, in the "plantations" heading, the value obtained by adding up the amounts indicated in the "own-account produced fixed capital goods" column of Table 2 which concern plantations (i.e. the entry mentioned in Section (a) above) and the plantation output of units specialising in such kind of contract work.

2.61.10. The recording of plantations of trees for the repeated production of forestry products should be done in the same way in the EAF.

k) "Fixed asset" livestock

2.62.1. Gross fixed capital formation for livestock corresponds to the following elements:

- the annual growth of livestock (until they reach maturity);
- livestock acquisitions (imports) less disposals (slaughterings ⁽³⁹⁾ and exports);
- the costs associated with the transfer of ownership incurred in trade between agricultural units ⁽⁴⁰⁾.

2.62.2. In accordance with the ESA 95, gross fixed capital formation 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 ⁽⁴¹⁾, export or any other final use), to which is added the cost of transfer of ownership ⁽⁴²⁾. 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.

2.62.3. As shown in Section 2.59.1., measuring the GFCF for livestock only constitutes one element of the change in the value of assets. In fact, gross fixed capital formation 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 three 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.);
- no consumption of fixed capital (i.e. no foreseeable depreciation in the value of livestock).

⁽³⁹⁾ 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 stocks by recording a flow entitled "other change in volume" (cf. 2.59.3) entered in the "other changes in volume of assets" account. They are only sold in the form of stocks, the sale then constituting a withdrawal from stocks and not a disposal of assets.

⁽⁴⁰⁾ Inasmuch 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.

⁽⁴¹⁾ Including slaughterings for own final consumption or payment in kind.

⁽⁴²⁾ 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 gross fixed capital formation for livestock.

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.

- 2.62.4. As a general rule, therefore, gross fixed capital formation 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 gross fixed capital formation 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.
- 2.62.5. In theory, consumption of fixed capital should be calculated for livestock⁽⁴³⁾. 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 these animals. However, in view of the practical difficulties in evaluating consumption of fixed capital (the definition of the calculation parameters are very complex, cf. 3.36.8. and 3.36.9.), **no consumption of fixed capital should be calculated for productive livestock.**
- 2.62.6. Gross fixed capital formation for livestock may be measured by various methods. By using the Perpetual Inventory Method, each of the GFCF elements defined in Section 2.62.1. (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.
- 2.62.7. The recommended method employs an indirect calculation approach⁽⁴⁴⁾. It is based on calculating the change in livestock population 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).
- 2.62.8. The measurement of GFCF is made up of the sum of the following elements:

Gross fixed capital formation	=	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 productive livestock losses" + Costs associated with the transfer of ownership
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- 2.62.9. 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).
- 2.62.10. The term "Other productive livestock losses" 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).

⁽⁴³⁾ The SNA 93 (6.185.), unlike the ESA 95 (6.03.), considers that consumption of fixed capital should be calculated for livestock.

⁽⁴⁴⁾ Any other method leading to equivalent results may be used.

- 2.62.11. The value of losses 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.).
- 2.62.12. 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 95. Ignoring them would result in the real level of gross fixed capital formation for livestock being underestimated.
- 2.62.13. 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 Section 2.62.1. applied to categories of animals which are not yet fully mature:

$$\text{Own-account production} = \text{GFCF} + \text{disposals (slaughterings and exports)} - \text{acquisitions (imports)}^{(45)} - (\text{cost of transfer of ownership})$$

I) Tangible and intangible fixed assets (other than agricultural assets)

- 2.63.1. Tangible and intangible fixed assets other than agricultural assets (plantations and livestock) comprise the following elements:
- machines and other capital goods;
 - transport equipment;
 - farm buildings (non-residential);
 - other (computer software, etc.).
- 2.63.2. Gross fixed capital formation 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 the acquisition/disposal 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.
- 2.63.3. In the case of construction or 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 in the change of stocks of the producer in the form of work-in-progress. These goods (whether movable or immovable) are not recorded in gross fixed capital formation until the ownership has been transferred. By contrast, when this production is own-account, this work is recorded as gross fixed capital formation during the entire production period (cf. 2.08.1.).
- 2.63.4. 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.

⁽⁴⁵⁾ This deduction corresponds to the theoretical case where the imports of productive animals are recorded as gross fixed capital formation. In practice all animals imported by the agricultural industry are treated as changes in stocks (cf. 2.74.3.).

m) Land improvement

- 2.64.1. Major improvements in non-produced tangible 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. Since land acquisitions and withdrawals are not recorded as GFCF (being non-produced assets), investments in land improvement are listed separately under a special GFCF heading.
- 2.64.2. 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. 2.55.4. to 2.55.6). 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 95, 3.106. and SNA 93, 10.51. to 10.54.).

n) Costs associated with the transfer of ownership of non-produced assets

- 2.65. Costs associated with the transfer of ownership of non-produced assets refer to **acquisitions** of land and non-produced intangible assets (such as patented assets, production rights etc.) by agricultural units. These acquisitions of non-produced assets are not recorded as gross fixed capital formation (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).

o) Goods and services excluded from gross fixed capital formation

- 2.66.1. The following goods and services are not included in gross fixed capital formation:
- (a) small tools, working clothes, spare parts and equipment of a low value (less than 500 EURO at 1995 prices), even if these goods have a normal useful life of over one year (cf., however, 2.55.2. and 2.55.3.); because they are renewed regularly, and to conform with business accounting practice, these purchases of goods are considered to be intermediate consumption (cf. 2.45. and 2.46.);
 - (b) ongoing maintenance and repairs (cf. 2.55.4. to 2.55.6.) are classed as intermediate consumption;
 - (c) services of scientific research, advertising, market research, etc. Purchases of these services are included in intermediate consumption (cf. 2.48. (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 and trees which serve as stocks: fattening animals reared for slaughter, including poultry; trees planted for timber;
 - (f) holding gains and losses on fixed assets (to be recorded in the revaluation account, cf. 2.59.2.);
 - (g) losses of fixed assets due to catastrophic events (cattle diseases, etc.) or force majeure (floods, gales, etc.). The treatment of losses in agriculture is described in Appendix VIII. (cf. 2.59.3).
- 2.66.2. 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 gross fixed capital formation and partly, as final consumption.

2. Change in stocks

a) Definition of stocks and change in stocks

- 2.67.1. Stocks 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 stocks: input stocks and output stocks:
- **Input stocks** 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 stocks in the course of the reference period (cf. 2.07.1.) and these latter are consequently indicated separately in Table 3 "Intermediate Consumption" of Appendix III.
 - **Output stocks** represent the stocks of finished products and work-in-progress of the producer. They are taken into account in the calculation of output, i.e. they are entered in the corresponding columns of Tables 1 and 2. Output stocks 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 and forestry, they include crop products, olive oil, grape must, livestock products, timber and other forestry products and non-agricultural (forestry) goods produced in inseparable secondary activities;
 - **work-in-progress:** this is production 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. 2.06.4.) and **standing timber** (in a regular development of stocks, cf. 2.06.13.) are not regarded as work-in-progress stocks in the annual economic accounts.
- 2.67.2. 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. 2.06.4.). When the harvest, soil preparation and sowing operations are carried out in different reference 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 2.06.5).
- 2.67.3. For the treatment of standing timber, on the other hand, this method is less justifiable because of the long production process, which frequently extends over generations and because of the high value of woodlands. However, in view of the technical problems of recording standing timber, the ruling of 2.06.13. must remain in force (i.e. in cases where standing timber stocks are relatively regular, timber output is to be recorded only at the time of felling).
- 2.67.4. It should be noted that services are not entered as stocks except for those included in the purchase value of goods placed into stock.
- 2.67.5. According to the ESA 95, changes in stocks are measured by deducting from the value of stock entries the value of stock withdrawals and any recurrent losses of goods in stock.

b) Time of recording and valuation of changes in stocks

- 2.68.1. Stock entries should be valued at the date of entry into stock and withdrawals should be valued at the prices prevailing when removed from stocks. The time of recording (and valuation) of stock entries and withdrawals should be consistent with that of other transactions in products (output and intermediate consumption).
- 2.68.2. The basic price is the price to be used for valuing changes in stocks (entries, withdrawals or 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 95, 3.51. and 3.52.).
- 2.68.3. The method recommended in the ESA 95 for recording stock entries 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 95 recommends a "quantitative" method which consists in measuring changes in stocks as the difference in volume between the stocks 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.
- 2.68.4. 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 95 (cf. 3.124 (c)).
- 2.68.5. It should also be considered that a change in stocks, as defined in 2.67.5., is only one of the components of the change in the value of stocks 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 stock assets:

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

- Value of opening stocks at the prices applicable at the start of the period	=	Change in stocks (entries - withdrawals - recurrent losses)
		+ nominal holding gains (net of losses)
		+ other changes in volume

- 2.68.6. These nominal holding gains and losses and other changes in volume ⁽⁴⁶⁾ 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").
- 2.68.7. The main difficulty in valuing the change in stocks in the EAA concerns crop products. These agricultural products are in fact seasonal products whose entries into stocks 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.

⁽⁴⁶⁾ Other changes in volume are generally understood to be stocks of goods destroyed in the wake of exceptional events (such as natural disasters). Current losses are included in withdrawals from stocks.

c) Change in stocks of livestock and animal products

- 2.69.1. When valuing changes in livestock population, it is not very 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.
- 2.69.2. To evaluate changes in the herd at the end of the reference period, a distinction has to be drawn between the “stocks” herd and the “fixed assets” herd (cf. 2.60.3. and 2.73.). 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. 2.68.2.). 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.
- 2.69.3. Because of the generally regular changes in the prices of animals, it is possible to evaluate the change in livestock stocks by a simple approximation method which excludes nominal holding gains (net of losses). For each category of animal, the change in population volume between the end and the start of the accounting year is multiplied by the average price observed over the reference period.

d) Change in stocks of seasonal products

- 2.70.1. Seasonal products (cf. 2.68.4. and 2.68.7.) 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 a quantitative method could lead to the inclusion of nominal holding gains or losses in the measurement of the change in stocks. One solution could consist in measuring the change in stocks over shorter periods than the reference period (for example, each quarter) - sub-periods 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.
- 2.70.2. Another method of evaluating stocks of seasonal products is that of examining the trend in the prices of stocked goods. The price of a good may change during storage for at least three reasons (SNA 93, 6.105.):
- 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;
 - there may be factors such as general inflation or other general factors which may lead to a change in price even though its physical or economic characteristics are not changed over time.
- 2.70.3. The difference between the price at which products are put into stock and the price at which they are withdrawn, **in the first two cases**, should reflect the additional output value produced during storage (SNA 93, 6.106.), since products withdrawn from storage several months after harvest are different, in economic terms, from those which have been stored. This type of increase in the value of products should not be counted as a nominal holding gain (SNA 93, 12.70.).
- 2.70.4. On the basis of the different components of the change in the value of stocks 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 stocks. **The first method constitutes the reference method** to be applied in valuing output and changes in stocks

of seasonal agricultural production. The second method may be used for more specific cases (mainly products whose prices are difficult to predict).

- 2.70.5. **The reference method** consists in determining the **change in stocks as the difference between the value of output for the year and the value of sales (and other uses) for the same year** ⁽⁴⁷⁾. It is founded on the assumption that there are no stocks left over at the end of the marketing year (the end of the first half of the following calendar year). It involves **directly evaluating total production 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 ⁽⁴⁸⁾ at the prices applicable at the time of sale (or other uses).
- 2.70.6. This 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 production 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. 2.70.2.).
- 2.70.7. 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 stocks at the start and end of the calendar year, with corresponding prices). It also facilitates the elaboration of accounts in constant prices.
- 2.70.8. 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.
- 2.70.9. By this second method, seasonal output is calculated directly as the sum of sales, other uses and changes in stocks. Stock changes are estimated by valuing the stocks at the end and start of the accounting period on the basis of their current prices.
- 2.70.10. It should be noted that these two methods differ in the way they measure the change in stocks but not in the valuation of sales (which are valued at the basic prices applicable on withdrawal from stocks).

e) **Changes in stocks of wine (from grapes produced by the same holding)**

- 2.71.1. 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.
- 2.71.2. 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

⁽⁴⁷⁾ Use is made of the breakdown of output into sales (and other uses) and stock changes.

⁽⁴⁸⁾ 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 $n+1$.

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).

- 2.71.3. 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 of wine stocks 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 the wine-growing industry and statistical system in that country.
- 2.71.4. **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 year. The expected increase in value is anticipated in the production 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 (N.B. 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.
- 2.71.5. **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 wine stocks as it assumes that the distribution of stocks (and stock withdrawals) is known for each harvest year. Nevertheless, it can provide a more accurate idea of sales and stocks of different vintages.
- 2.71.6. 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.

3. Recording of livestock as "gross fixed capital formation" or "stock changes"

- 2.72. As mentioned in Sections 2.60.3. and 2.62.3., changes in the number of livestock (for agricultural statistical purposes) are entered either as gross fixed capital formation or as changes in stocks depending on the type of animal.

a) Definition

- 2.73. Gross fixed capital formation 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 serving as stocks 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.

b) Recording of animal imports

1. *Animals identifiable as fixed assets:*

2.74.1. 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 gross fixed capital formation (cf. 2.62.1. and 2.62.2.). Of course, only animals bought by the agricultural industry are to be recorded as gross fixed capital formation of agriculture, and therefore not, for example, saddle horses for private use or animals acquired for other purposes.

2. *Animals identifiable as stocks:*

2.74.2. By contrast, if at the time of import the animals were able to be clearly identified as **stocks** (e.g. animals for slaughter) their import would be considered as an entry into stocks of work-in-progress and therefore, deducted from sales (negative sales) in the calculation of output (cf. 2.23.6.).

3. *Treatment to be adopted:*

2.74.3. 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 stocks, but with the exception of those intended 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. 2.23.6. and 2.23.7.).

2.74.4. 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.

c) Recording of livestock trade between agricultural units

2.75.1. *Animals classed as fixed assets:* Trade in these animals is recorded in gross fixed capital formation 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 reference period, these flows offset each other and only services associated with the transfer of ownership are recorded as gross fixed capital formation (cf. 2.23.5.).

2.75.2. *Animals classed as stocks:* 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. 2.23.4.).

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

d) Non-agricultural animals

2.76.1. 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. 1.38.3). 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 producing solely for own final consumption is not considered as part of the EAA (cf. 1.16.).

2.76.2. 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.

III. DISTRIBUTIVE TRANSACTIONS AND OTHER FLOWS

A. DEFINITION

- 3.01.1. 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.
- 3.01.2. The ESA 95 distinguishes between current transfers and capital transfers, the latter representing a redistribution of saving or wealth rather than of income.
- 3.02.1. Given that the EAA and EAF 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/EAF sequence of accounts, Sections 1.21.1. to 1.23.4.). 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.
- 3.02.2. 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 sub-sectors, are taken into account (cf. 1.05.).

B. GENERAL RULES

1. Reference period

- 3.03. The reference period for the EAA and EAF is the calendar year.

2. Units

- 3.04. The values should be expressed in millions of units of the national currency (in the case of Spanish peseta and Italian lire: billions).

3. Time of recording distributive transactions

- 3.05. As was explained in Section 2.05., the ESA 95 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.

3.06.1. The times of recording the various types of distributive transaction is as follows:

a) Compensation of employees

3.06.2. 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 95, 4.12.).

b) Taxes and subsidies on production

3.06.3. 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 95, 4.26.). Similarly, subsidies are recorded at the time when the transaction or other event (production, sale, import, etc.) to which they relate takes place (cf. ESA 95, 4.39.).

c) Property income

3.06.4. Interest is recorded during the accounting reference period in which it is due, irrespective of whether it is actually paid (cf. ESA 95, 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 95, 4.75.).

d) Other current transfers

3.06.5. 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 95, 4.162. and 4.166.).

4. General remarks concerning value added

3.07.1. 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.

3.07.2. 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.

C. COMPENSATION OF EMPLOYEES

(cf. ESA 95, 4.02.-4.13.)

3.08. 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 (ESA 95, 4.02.). It includes:

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

- 3.09.1. **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 ⁽⁴⁹⁾;
 - (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.
- 3.09.2. 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.
- 3.10.1. **Gross wages and salaries in kind** comprise goods and services made available by employers to their employees free 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 or forestry products made available to employees free of charge or at reduced prices, by way of remuneration ⁽⁵⁰⁾;
 - (b) accommodation services produced for own account and provided to employees free of charge or at reduced prices ⁽⁵¹⁾;
 - (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 95, 4.05.).
- 3.10.2. Wages and salaries in kind should be valued at their basic prices or at the purchaser price (depending on whether the items are produced by the unit or purchased from outside).

⁽⁴⁹⁾ This category must not include payments made primarily in the employer's interest. Such payments are part of intermediate consumption (cf. 2.48. (e)).

⁽⁵⁰⁾ Agricultural or forestry products provided to employees are output of the agricultural branch.

⁽⁵¹⁾ 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.

- 3.11. 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 95, 4.07.).
- 3.12.1. **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. 3.09.2.). These contributions may be actual or imputed.
- 3.12.2. **Actual** social contributions correspond to 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.
- 3.12.3. **Imputed** social contributions represent the counterpart to unfunded social benefits, paid directly by employers to their employees or former employees without involving an insurance enterprise or autonomous pension fund ⁽⁵²⁾(cf. ESA 95, 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).
- 3.13. It must be stressed that, in the EAA and EAF, 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. 4.09. and 4.10.), all remuneration has to be recorded as compensation of employees.

D. TAXES ON PRODUCTION AND IMPORTS

(cf. ESA 95, 4.14.-4.29.)

- 3.14. 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 (ESA 95, 4.14.).

⁽⁵²⁾ 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 work place, invalidity or redundancy, in so far as the amounts concerned can be separately identified.

- 3.15. Taxes on production are divided into:
- taxes on products:
 - VAT-type taxes,
 - taxes and duties on imports other than VAT, and
 - taxes on products other than VAT and import taxes
 - other taxes on production.

1. Taxes on products

- 3.16.1. Taxes on products 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 95, 4.16.).
- 3.16.2. **VAT-type taxes** are taxes on goods and services collected in stages by enterprises and ultimately charged in full to the final purchaser. They include VAT (Value Added Tax) and other deductible taxes applied under similar rules to those governing VAT ⁽⁵³⁾.
- 3.16.3. **Taxes and duties on imports excluding VAT** comprise compulsory payments levied by general government or 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.
- 3.16.4. They include import duties and other taxes such as levies on imported agricultural products, monetary compensatory amounts levied on imports, excise duties, etc. (cf. ESA 95, 4.18.). 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/EAF purposes.
- 3.16.5. **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 95, 4.19.).
- 3.16.6. 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.
- 3.17.1. As output is recorded at basic prices, taxes on products are recorded within the production account (cf. 2.31.1. to 2.31.5.) 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/EAF 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. 3.21.2. (g)).
- 3.17.2. 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

⁽⁵³⁾ Turnover is the most important taxable item. All EU Member States raise turnover tax in the form of a value added tax. 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.

production account (cf. 2.50.1. to 2.50.4.). Such cases include, for example, taxes on sugar and alcohol used for wine-making which are levied in some 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.

2. Other taxes on production

- 3.18. Other taxes on production 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 95, 4.22.). They may be payable on land, fixed capital goods or the labour employed.
- 3.19. 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**).
- 3.20. The taxes to be recorded in the generation of income account for agriculture and forestry must be:
- (a) compulsory;
 - (b) paid direct by the agricultural/forestry industry;
 - (c) paid to general government or the institutions of the European Union, or be
 - (d) within the definition of other taxes on production (see 3.18.).
- 3.21.1. Owing to the disparate historic developments of public finances in the various Member States of the European Union, 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**.
- 3.21.2. 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 they belong to the agricultural units or are rented by 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. 2.48.3. (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 scheme (cf. Appendix IX.).
- 3.22. 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 gross fixed capital formation which gives rise to it (not the time of reimbursement).
- 3.23. 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

should be entered in the intermediate consumption of agriculture; 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 95, 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.

E. SUBSIDIES

(cf. ESA 95, 4.30.-4.40.)

- 3.24. 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, their prices 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 on other non-market output (ESA 95, 4.30.).
- 3.25. Subsidies are classified into:
- subsidies on products:
 - import subsidies,
 - other subsidies on products, and
 - other subsidies on production.

1. Subsidies on products

- 3.26.1. 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 quantity 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 or to output for own final use (ESA 95, 4.33.).
- 3.26.2. 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 (ESA 95, 4.34.).
- 3.26.3. Subsidies on products are accounted for in the basic price (cf. 2.31.1. to 2.31.5.) 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. 2.50.1. to 2.50.4.); correspondingly, this leads to a reduction of the costs of these products or goods.

3.26.4. The method of valuation of output at basic prices requires a fundamental distinction between subsidies on products and other subsidies on production. In line with their definition, subsidies on agricultural products include **in particular** the following grants (with an indication of the corresponding budget item in the general budget of the European Union):

a) Subsidies on agricultural products paid to agricultural producers

- certain grants introduced with the reform of the Common Agricultural Policy. The grants in question are **compensatory aid for arable crops (cereals, protein crops and oilseeds)** (B1-104 and B1-1050 to B1-1055) and **premiums for cattle** (for suckler cows and special premiums; B1-2120 to B1-2122, B1-2127). This classification is based on the following three considerations:
 - the concept of subsidies on products has been enlarged in the ESA 95 to include subsidies in the form of "deficiency payments". Compensatory payments for arable crops are similar in application to forms of deficiency payments. Moreover, the amounts of these payments are strictly linked to the quantities produced (at macro-economic level);
 - the working and economic effects of the CAP reform: these grants are part of a policy which has always been aimed at products, combining market support and direct aid, and accompanied by measures to curb production. This policy has 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) has been changed);
 - the price-based part of the premium for cattle adopted under the CAP reform is a form of compensatory aid for declines in cattle intervention prices. It is 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 (B1-1210);
- grants for the production of textile crops (fibre flax and hemp; B1-140);
- grants for silkworm production (B1-1420);
- grants for banana production (B1-1508, only the part relating to compensatory aid);
- grants for dried grape production (B1-1513);
- grants for seed production (B1-180);
- grants for hop production (B1-181);
- premiums for ewes and she-goats (B1-2220);
- 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).

b) Subsidies on agricultural products paid to other economic operators

- refunds for the export of cereals (B1-100), fresh fruit and vegetables (B1-1500) etc.;
- grants for the production of oleaginous products (before 1992), protein products and flax (before 1993);
- grants for potato starch production (B1-1021);
- grants for dried fodder production (B1-130);
- grants for cotton production (B1-141);
- grants for the use of musts (B1-163);
- premiums on tobacco production (B1-171).

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. 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.

- 3.26.5. 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.

2. Other subsidies on production

- 3.27.1. Other subsidies on production consist of **subsidies other than subsidies on products**, from which resident producer units can benefit 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 (ESA 95, 4.36.). The ESA 95 refers to four other subsidies on production (ESA 95, 4.37.): subsidies on pay-roll 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.
- 3.27.2. 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

- 3.27.3. 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 gross fixed capital formation 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.
- 3.27.4. 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. 3.27.11. and 3.27.12. on market-regulating agencies).

b) Purposes of other subsidies on production

3.27.5. Other subsidies on production can, under the ESA 95, 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 and forestry 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

3.27.6. 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 and EAF do not account for all grants made to agriculture and forestry. Apart from direct aid, agricultural and forestry production units **benefit** from subsidies (within the meaning of the ESA 95) paid to up- and downstream production branches and, especially, market-regulating agencies⁽⁵⁴⁾.

3.27.7. In the case of agriculture, the most important types of other subsidy linked to production are:

- wage and pay-roll subsidies;
- grants for interest relief (ESA 95, 4.37. (c)) made to resident producer units, even when they are intended to encourage capital formation⁽⁵⁵⁾. 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 scheme (cf. Appendix IX.);
- 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 (B1-1610) (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 which were introduced as part of the CAP reform, B1-1060, and five-year set-aside, B1-1062);
 - financial compensation for withdrawals of fresh market fruit and vegetables (B1-1501). 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"), processing of male calves and extensification (B1-2123 to B1-2125)
 - grants for agricultural production in less-favoured and/or mountainous areas;

⁽⁵⁴⁾ 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. 2.48. (g)) of the insurance policy holder.

⁽⁵⁵⁾ 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.

- other grants intended to influence methods of production (extensification, techniques designed to reduce pollution, etc.);
- amounts paid to holders as compensation for losses of crop or livestock products and plantations which are considered to be work-in-progress (in so far as they are still in their growth period; cf. Appendix VIII., 2.05.2.), irrespective of the nature of the loss (disease, extreme weather conditions, etc.). By contrast, compensatory transfers for losses of livestock and/or plantations used as factors of production are recorded as other capital transfers in the capital account.

3.27.8. 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, it is difficult to determine the time of the transaction which gives rise to them and to distinguish it from the time when the subsidies are paid. In this particular case, subsidies are recorded when they are received.

3.27.9. 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 operating 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 losses affecting production (crops, livestock and plantations which are still in their growth period, cf. 3.27.7.): 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 time of payment continue to be used, because it is difficult to determine when the application for compensation was filed and whether the amounts in question are accurate.

3.27.10. 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 criterion under the heading devoted to the branch of production which receives them;
- current transfers to agricultural producer units by a market-regulating agency. These should be recorded as components of output of the product in respect of which the transfer is made in so far as the market-regulating 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 accounted for as subsidies (cf. 3.27.11. et 3.27.11.);

- 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 95, 4.145.). Capital transfers cover capital taxes, investment grants and other capital transfers (cf. ESA 95, 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 an orchard/vineyard (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 or forestry products, as a result of the destruction of or damage to these goods caused by acts of war, other political events or natural disasters. These payments should be classified as other capital transfers (cf. Appendix VIII.);
- cancellations of debts which the producers of agricultural and forestry 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 95 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 95 or, consequently, in the EAA or EAF, 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 quasi-corporations. These are recorded as shares and other participating interests.

d) Market-regulating agencies

3.27.11. Market-regulating agencies

- **concerned exclusively with the purchase, sale or storage of goods**, are assigned in a breakdown of the economy by:
 - **industries**, to trade; this activity is deemed by convention to be the output of non-financial market services;

- **sectors**, to non-financial corporate and quasi-corporate enterprises, if these market-regulating agencies are considered as institutional units within the meaning of the ESA 95, and if not, to the sector to which the larger unit belongs.
 - **concerned exclusively with the payment of subsidies**, are assigned in a breakdown of the economy by:
 - **industries**, 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 95 ruling;
 - **sectors**, to the sector general government (cf. preceding paragraph).
 - **concerned with both purchase, sale and storage of goods and the payment of subsidies**, are assigned in a breakdown of the economy 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;
 - **sectors**, 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 95.
- 3.27.12. A consequence of the strict application of the payment criterion is that, as mentioned above, various subsidies within the meaning of the ESA 95 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-regulating 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.

F. PROPERTY INCOME

(cf. ESA 95, 4.41.-4.76.)

1. Definition

- 3.28.1. Property income is the income receivable by the owner of a financial asset or tangible non-produced asset in return for providing funds to, or putting the tangible non-produced asset at the disposal of, another institutional unit (ESA 95, 4.41.).
- 3.28.2. The ESA 95 classifies property incomes in the following way:
- interest,
 - distributed incomes of corporations (dividends and withdrawals from income of quasi-corporations),
 - reinvested earnings on direct foreign investment,
 - property income attributed to insurance policy holders,
 - rents (on land and subsoil assets).
- 3.29.1. The EAA and EAF are concerned only with property income accounted for in the entrepreneurial income account (cf. sequence of accounts, 1.21.1 to 1.23.4.). 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.

- 3.29.2. Only three types of property income can be of relevance to the EAA and EAF: interest, rents and property income attributed to insurance policy holders.

2. Interest

- 3.30.1. Interest 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 and EAF, interest is the counterpart of loans granted to meet the needs of agricultural/forestry 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/forestry secondary activities).
- 3.30.2. 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).
- 3.30.3. 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. 4.06.). Similarly, the amount to be recorded as interest payable includes interest-rate subsidies to agriculture and forestry.
- 3.30.4. Interest received in connection with agricultural (forestry) activities by units belonging to corporate agricultural enterprises should also be recorded. Interest received 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 ⁽⁵⁶⁾.
- 3.30.5. Interest is recorded in line with the accrual principle, i.e. as **accrued interest** (not as interest paid).
- 3.30.6. If the ESA 95 has a breakdown of uses of indirectly measured financial intermediation services by user sectors and user industries, actual payments or receipts of interest to or from financial intermediaries should be adjusted to eliminate the margins that represent the implicit charges for services rendered. 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 (cf. 2.48. (i); ESA 95, Appendix I, 4.51.).

3. Rents (of land and underground deposits)

- 3.31.1. Rents correspond to payments made to the owner of non-produced tangible assets (land and underground deposits) 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 ⁽⁵⁷⁾.
- 3.31.2. 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

⁽⁵⁶⁾ Interest received corresponds to "Other accounts receivable" (F.7) in the financial account. This category includes all transactions coming under Other accounts receivable, i.e. all financial assets created as a counterpart to financial or non-financial transactions, in so far as there is a time difference between the time when the transaction takes place and the time when the corresponding payment is made.

⁽⁵⁷⁾ Note that rents received are not relevant to the EAA/EAF due to the use of the agricultural industry concept (cf. 1.22.2).

are accounted for as other taxes on production (in the case of property tax) or intermediate consumption (in the case of land maintenance).

- 3.31.3. 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 95, 4.73.)⁽⁵⁸⁾.
- 3.31.4. All rent for land should be recorded under this heading whether the land is rented for less or more than one year.
- 3.31.5. Thus, 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. 2.48. (a)).
 - depreciation of buildings;
 - current maintenance expenditure on buildings (cf. 2.46.);
 - property tax (cf. 3.21.2. (a));
 - expenses relating to buildings insurance (cf. 2.48. (g)).
- 3.31.6. 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 intangible assets such as patented assets and production rights (milk quotas), should be recorded as intermediate consumption (cf. 2.48. (n)).

4. Property income attributed to insurance policy holders (not covered by the EAA/EAF)

- 3.32.1. Property income attributed to insurance policy holders corresponds to total primary incomes received from the investment of insurance technical reserves and pension funds (cf. ESA 95, 4.68.). These technical reserves are treated as assets belonging to the insured. The ESA 95 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 95, 4.69.).
- 3.32.2. Property income attributed to insurance policy holders is excluded from the EAA/EAF. 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. 2.48. (g)): in this case, the income measured appears before description of all these transactions of redistribution.

⁽⁵⁸⁾ The ESA 95 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.

The EAA and EAF have opted for the second solution.

G. CAPITAL TRANSFERS

(cf. ESA 95, 4.145.-4.167.)

- 3.33. The only capital transfers recorded in the EAA/EAF sequence of accounts are receivable capital transfers, i.e. investment grants and other capital transfers. These distributive transactions are recorded in the capital account (cf. 1.21.4. and 1.23.4.).

1. Investment grants

- 3.34.1. 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 95, 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 Guidance and Guarantee Fund (EAGGF) Guidance Section.
- 3.34.2. Interest subsidies are not included under investment grants (cf. 3.27.7.), 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.
- 3.34.3. The most important types of other grant made by the EAGGF Guidance Section 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. 3.27.10.);
 - 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.
- 3.34.4. Investment grants should be recorded when payment is due (ESA 95 4.162.).

2. Other capital transfers

- 3.35.1. 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 sub-sectors of the economy or the rest of the world (ESA 95, 4.164.).
- 3.35.2. Other capital transfers differ from investment grants in two aspects:
- only general government (resident or Community) 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.
- 3.35.3. 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 95, 4.165.).

- 3.35.4. In the case of agriculture and forestry, 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 losses of fixed capital goods used in the production of agricultural or forestry goods (e.g. animals and equipment) (cf. Appendix VIII.);
 - start-up grants to young farmers for purposes other than financing the acquisition of assets;
 - grants to compensate for reductions in the value of assets or to reduce debts.
- 3.35.5. Other capital transfers in cash are recorded at the moment 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).

H. CONSUMPTION OF FIXED CAPITAL

(cf. ESA 95, 6.02.-6.05.)

- 3.36.1. The foreseeable wear and tear and obsolescence of fixed capital goods over the reference 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 fixed capital consumption. Its inclusion under uses in the production account allows expenditure on fixed capital formation to be distributed over the entire period of use.
- 3.36.2. 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 period under consideration as a result of normal wear and tear and foreseeable obsolescence⁽⁵⁹⁾. 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.
- 3.36.3. All fixed capital goods (i.e. products) are the subject of consumption of fixed capital (although some flexibility is required in specific cases; cf. 3.36.8.). This includes tangible and intangible 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 stocks or work-in-progress, or for non-produced assets such as land, underground deposits and patented assets.
- 3.36.4. 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. 2.59.1). 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.
- 3.36.5. 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

⁽⁵⁹⁾ 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.

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.

- 3.36.6. 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.
- 3.36.7. The consumption of fixed capital in the form of the costs associated with the transfer of the ownership of produced tangible and intangible assets should be calculated on the basis of an average economic life, conventionally put at one year.
- 3.36.8. 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 from 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, it was felt that 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.).
- 3.36.9. 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 95 (cf. 6.03.) and micro-economic 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.

IV. AGRICULTURAL INCOME INDICATORS

- 4.01. One of the principal objectives of the economic accounts for agriculture is to measure agricultural income and changes therein.

A. DEFINITION OF INCOME AND BALANCING ITEMS

- 4.02. 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 95 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.
- 4.03. The sequence of accounts (cf. 1.22.1.) 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:

Production account	Generation of income account	Entrepreneurial income account
P.1 Output	B.1n Net value added	B.2n Net operating surplus B.3n / net mixed income
P.2 - Intermediate consumption	D.1 - Compensation of employees	D.41 + Interest received*
K.1 - Consumption of fixed capital	D.29 - Other taxes on production	D.41 - Interest paid
	D.39 + Other subsidies on production	D.45 - Rent paid
B.1n = Net value added	B.2n = Net operating surplus / net B.3n 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		

* Only interest received by agricultural units organised as companies.

- 4.04. **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.

- 4.05. **Net operating surplus** measures the yield from land, capital and unpaid 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.
- 4.06. **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 unpaid 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).
- 4.07. 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 unpaid 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” 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).
- 4.08. 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.

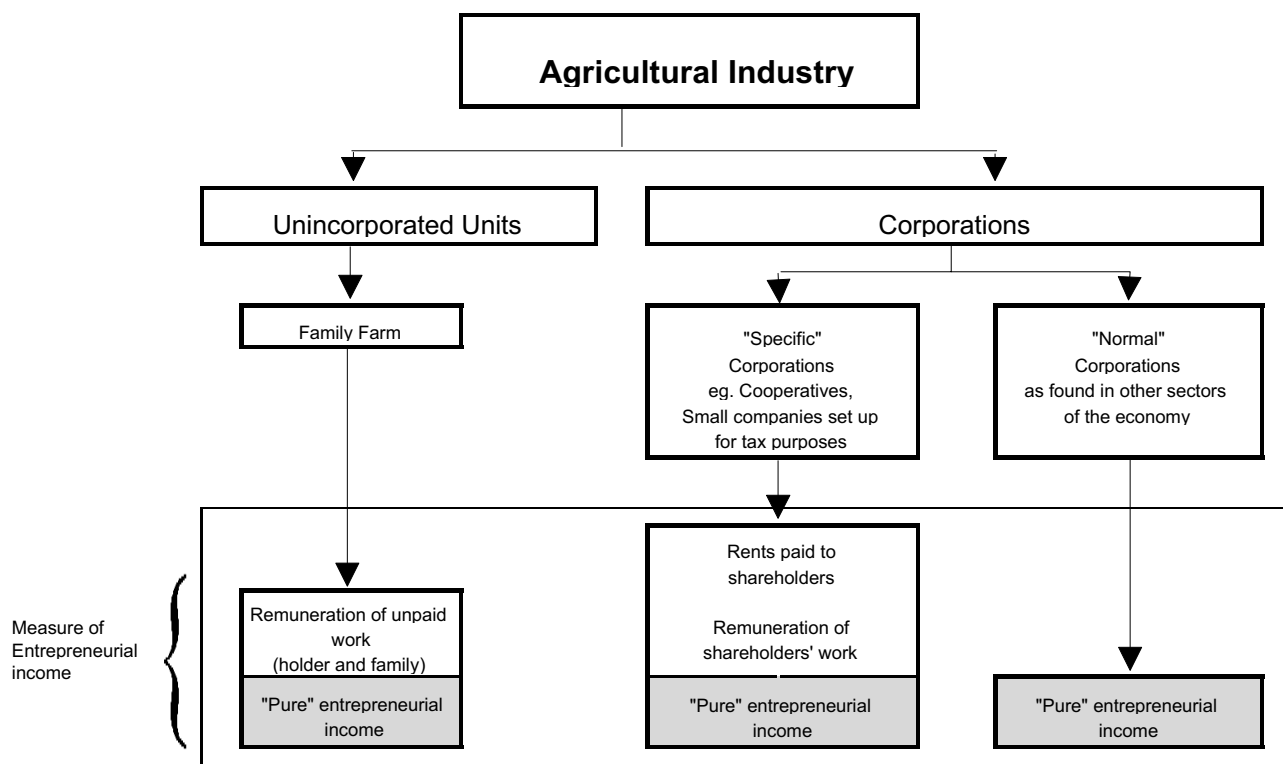
B. TREATMENT OF THE INCOME OF UNITS ORGANISED ON A CORPORATE BASIS

- 4.09. 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 co-operatives).

- 4.10. The net entrepreneurial income of the agricultural industry is thus made up of the following three components:
- the “mixed” entrepreneurial income of sole proprietorships;
 - the “straight” 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 below.

- 4.11. “Straight” 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.



C. DEFINITION OF THE AGRICULTURAL INCOME INDICATORS

4.12. The three agricultural income indicators can be described as follows:

- **Indicator A: Index of the real income of factors in agriculture per annual work unit**

This yardstick corresponds to the real net value added at factor cost of agriculture per total annual work unit ⁽⁶⁰⁾.

- **Indicator B: Index of real net agricultural entrepreneurial income, per unpaid annual work unit**

This indicator presents the changes in net entrepreneurial income over time, per unpaid annual work unit. 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 ⁽⁶¹⁾ (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.

D. AGGREGATION OF INCOME INDICATORS FOR THE EUROPEAN UNION

4.13. 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 Community aggregates obtained by converting national data into EURO (or 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.

4.14.1. 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).

4.14.2. 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

⁽⁶⁰⁾ In order to take into account part-time and seasonal work, agricultural employment or changes therein are measured in annual work units (AWU's). One AWU corresponds to the input, measured in working time, of one person who is engaged in agricultural activities in an agricultural unit on a full-time basis over an entire year. A distinction is drawn between unpaid and paid AWUs, which together make up total AWUs.

⁽⁶¹⁾ This measure of income corresponds to the former measure “net income from family agricultural activity” for sole proprietorships.

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.

- 4.14.3. 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 Community aggregates expressed in EURO at constant 1995 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 1995 = 100. This method based on 1995 appears to be the most adequate one for describing and analysing the trends over the whole of the period from 1980 to year n.

E. DEFLATION OF INCOME INDICATORS

- 4.15.1. 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 gross domestic product.
- 4.15.2. Important factors such as reliability and comparability are points in favour of using this deflator. The implicit price index of gross domestic product 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 changes 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.
- 4.15.3. 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 gross domestic product of the particular country 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.

V. VALUATION OF ECONOMIC ACCOUNTS FOR AGRICULTURE AND FORESTRY AT CONSTANT PRICES

A. PRICE AND VOLUME MEASURES

(cf. ESA 95, Chapter X)

- 5.01. For the purposes of economic analysis, when looking at how values change, it is useful to distinguish between those due to changes in volume and those due to changes in price. The ESA 95 (10.15.-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.
- 5.02. For many goods and services there exist several variations which differ in 'quality'. The ESA 95 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 tons 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 95, 10.15.-10.18.).
- 5.03. 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.
- 5.04. 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 95 (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.
- 5.05. 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/EAF, 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.
- 5.06. 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 x 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 95 10.13.).
- 5.07. 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 (production, intermediate

consumption, consumption of fixed capital, gross value added, net value added, GFCF, change in stocks, taxes and subsidies on products).

B. PRINCIPLES AND METHOD FOR COMPILING EAA/EAF AT CONSTANT PRICES

1. Choice of index formula

- 5.08. The ESA 95 (10.62.) expresses a preference for using Fischer indices. This index presents a certain number of disadvantages, however, including the fact that they are non-additive and that they demand a considerable quantity of basic data. For this reason, the ESA 95 grants that an acceptable method is to use a Laspeyres-type index of volume and a Paasche-type index of prices.
- 5.09. In accordance with the recommendations of the ESA 95, in the EAA/EAF, changes in volume are measured using Laspeyres-type indices and changes in price are measured using Paasche-type indices.

$$\text{Laspeyres volume index: } L(q) = \frac{\sum p_0 q_n}{\sum p_0 q_0} = \frac{\sum p_0 q_0 \frac{q_n}{q_0}}{\sum p_0 q_0} = \frac{\sum V_0 \frac{q_n}{q_0}}{\sum V_0}$$

$$\text{Paasche price index: } P(p) = \frac{\sum q_n p_n}{\sum q_n p_0} = \frac{\sum p_0 q_n \frac{p_n}{p_0}}{\sum p_0 q_n}$$

For each elementary product,

- p_0 represents the price recorded in the base year 0;
- p_n represents price recorded in year n ;
- q_0 represents the quantity recorded in the base year 0;
- q_n represents the quantity recorded in year n ;
- V_0 represents the value recorded in the base year 0: ($V_0 = p_0 q_0$).

2. Base year

- 5.10. 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.
- 5.11. The **base year** is the year from which the prices are used to compile the weighting scheme.
- 5.12. 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, therefore, linked to weighting products that are no longer produced and new products that have emerged. It is for this reason that the EAA/EAF measures **changes in volume using the weightings for the preceding year**.

3. Presenting series in relation to a reference year

- 5.13. The year used for submitting and presenting data at constant prices may 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.
- 5.14. 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 95, 10.64.).
- 5.15. 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/EAF 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**.
- 5.16. **Example:**

Let us consider two homogeneous elementary products, A and B. The following series are based on the price structure for the preceding year:

The volume and price indices for the whole (A+B) depend on the weighting given to each product, A and B.

	90P90	<i>90-91 volume index</i>	<i>91P90</i>	<i>90-91 price index</i>	91P91	<i>91-92 volume index</i>	<i>92P91</i>	<i>92-91 price index</i>	92P92
A	100	105.0	105	110.0	115	102.0	117	108.0	126
B	300	110.0	330	95.0	314	90.0	283	105.0	297
total	400	108.8	435	98.6	429	93.2	400	105.8	423

If these series are expressed in relation to a fixed reference year (e.g. 1990), 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 1990):

	1990	1991	1992	
A	100	105.0	107.1	
B	100	110.0	99.0	
total	100	108.8	101.4	(101.4 = 108.8 * 93.2 / 100)

The values at constant prices expressed in relation to the reference year 1990 are:

	1990	1991	1992	
A	100	105	107.1	
B	300	330	297.0	
total	400	435	405.6	(405.6 = 400*101.4 / 100)

As a result, the account is no longer additive. Adding the values at constant prices for A et B gives the following series:

	1990	1991	1992
A+B	400	435	404.1

Other than in the year following the reference year, the re-referenced series is not additive.

- 5.17. According to ESA 95 (10.67.), the non-additive constant price data are published without any adjustment ⁽⁶²⁾. This is also the approach taken by the EAA and EAF. It is to be explained to users, however, that the tables are not additive.

4. Calculation of value added at constant prices

- 5.18. 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 constant prices is to carry out “double deflation” (cf. ESA 95, 10.27.-10.28.).
- 5.19. 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 and consumption of fixed capital in the prices of the preceding year. The value added in prices of a fixed reference year is obtained by re-referencing.
- 5.20. **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:

	95P95	96P95	96P96	97P96	97P97
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:

	95P95	96P95	96P96	97P96	97P97
Gross value added	110	130	135	140	155

⁽⁶²⁾ 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.

In this way, the following volume indices in the prices of the preceding year are obtained:

	1996	1997
Gross value added	118.2	103.7

$$(118.2 = 130/110 \cdot 100) \quad (103.7 = 140/135 \cdot 100)$$

The gross value added of year n in 1995 prices is derived by multiplying the current value for 1995 by the volume chain index.

$$VA_{96} \text{ (in 1995 prices)} = 110 \cdot 1.182 = 130$$

$$VA_{97} \text{ (in 1996 prices)} = 110 \cdot 1.182 \cdot 1.037 = 135$$

5. Breakdown of taxes and subsidies on products into volume and price components

- 5.21. 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:
- 5.22. **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.
- 5.23. 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.
- 5.24. **Example:**

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. 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:

	Value n	$n+1/n$ volume index	Volume $n+1$	$n+1/n$ price index	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.

VI. UNIT VALUE STATISTICS OF AGRICULTURAL PRODUCTS

A. PURPOSE OF UNIT VALUE STATISTICS

- 6.01. Unit value statistics have been set up as an instrument to provide further information on the characteristics of the changes in the value of agricultural products, other than the price components as such. The EAA are the main data source for the unit value statistics; as a result of this, unit value statistics are established in accordance with the same concepts, rules and principles as for the EAA.

B. NATURE OF UNIT VALUES

- 6.02. Unit values refer to the concept of the output of agricultural activity (cf. 2.14. and following). They are obtained by dividing current values by the corresponding physical quantities. They differ from prices in as much as the variation in unit values **includes** any variation in quality (cf. 5.01. to 5.03.)). The following equations illustrate these relationships:
- Unit value statistics: $\text{value} = (\text{unit value}) \cdot (\text{physical quantity})$
 - EAA in general: $\text{value} = (\text{"pure" price}) \cdot (\text{volume})$
- 6.03. The unit value statistics a set or group of products from the list of products which defines the agricultural industry of the EAA.
- 6.04. Two different sets of unit values are calculated. For the first (principal) set (at basic prices), unit values include subsidies on products and exclude taxes on products. Additionally, a second set of unit values (at producer prices) is calculated where subsidies on products are not added and taxes on products are not deducted. Unit values are recorded excluding VAT.

VII. REGIONAL ACCOUNTS FOR AGRICULTURE

A. GENERAL PRINCIPLES

1. Introduction

7.01. The Regional Accounts for Agriculture (RAA) are a regional-level adaptation of the Economic Accounts for Agriculture (EAA)⁽⁶³⁾.

2. Regional territory

7.02.1. Any compilation of regional accounts, whether they refer to industries or institutional sectors, needs a strict definition of the regional economic territory. In theory, the agricultural industry in a region covers the units (agricultural holdings) engaged in agricultural activities (see 1.31.1. to 1.31.3.) on the regional territory.

7.02.2. The regional territory is a single region which is part of the economic territory of a country as defined in the ESA 95. The geographical benchmark used is the territory as given in the Nomenclature of Territorial Units for Statistics (NUTS)⁽⁶⁴⁾. Free zones, including bonded warehouses and factories under customs control, are attached to the regions where they are located.

7.02.3. However, this division of territory is not totally consistent with the concept of national economic territory as used by the national accounts. The extraregio territory is made up of parts of the territory of a country which cannot be attached directly to a single region, and which **are excluded from the RAA**, 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.

3. Basic unit in the compilation of the Regional Accounts for Agriculture

7.03.1. The units used for the regional accounts by industry are either units of homogeneous production at local level (local UHPs) or local kind-of-activity units (local KAUs). The local UHP, which characteristically has a single activity (or product) and a single location, is generally not observable in statistical terms. The local KAU is the observable form of the production unit.

7.03.2. Although there are very few problems with the single location, the single activity is less easily defined. It is frequently not possible to get "single-activity" local KAUs. They can thus include one or more secondary activities which statistical observation cannot distinguish from the principal activity. The analytical approach (homogeneous branch) is based on a pure idea of a single

⁽⁶³⁾ For this reason the RAA are also affected by the ESA 95 revision.

⁽⁶⁴⁾ For further information, see REGIONS, Nomenclature of Territorial Units for Statistics, Eurostat, 1995.

activity with the penalty that it is further away from statistical observation. The statistical approach (industry) “makes do” with an observable unit even if this means deviating from the single activity. As with the SNA 93, the ESA 95 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 these are covered at regional or national level.

- 7.03.3. Like the EAA, the RAA 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 this choice. On the one hand, the “agricultural holding” unit is the local kind-of-activity unit for agriculture (cf. 1.08.1. to 1.12.), defined as that part of a kind-of-activity unit (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. 1.11.2. and 1.11.3, 1.17. to 1.18.7.).
- 7.03.4. Using the agricultural holding as the basic unit means including the non-agricultural secondary activities of those holdings in the regional accounts for agriculture (cf. 7.03.3.). Furthermore, it is agreed that agricultural holdings do not include “gardens and family livestock holdings of non-holders” whose output is solely intended for own final consumption (cf. 1.16.).
- 7.03.5. The agricultural holding is the reference unit for statistical surveys relating to agriculture, whether these are national or regional. This 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.

4. Methods of compiling the RAA

- 7.04. The ESA 95 proposes two methods, applying to either industries or institutional sectors: the bottom-up and the top-down methods. The first consists in 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 which reflects as closely as possible the regional distribution of the variable in question. These two methods may also be combined in various ways, combinations which the ESA 95 refers to as “mixed methods”. Priority is given to the bottom-up methods although it is realised that in many cases “mixed methods” are actually used.

5. Concepts of residence and territory

- 7.05.1. The regional accounts of the industries are based on the criterion of residence of the production unit. Each industry refers to the group of local KAUs of the same principal activity, that have their centre of economic interest in the regional territory. More often than not, this centre of interest is associated with a specific long-term location in the region, like the institutional units to which the local KAUs belong.
- 7.05.2. 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 holding can create a problem as factors of agricultural production may be managed by a head office in another region. For the RAA, it is important to split the two entities, and for this reason a 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 RAA - as many units as there are regions of residence for local KAUs that are away from the region of the head office.

6. Agricultural industry and characteristic units

- 7.06. The industry consists of all the local kind-of-activity units which carry out an identical or similar economic activity (cf. 1.30.5.). The scope of the RAA 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 RAA, and the industry established for the central framework of the national accounts (see 1.44.1).

B. TRANSACTIONS RELATING TO PRODUCTS

7.07. 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 revised EAA methodology puts forward precise rules governing how the effects of the storage of seasonal products should be taken into account, how the output of livestock should be measured and how products on which work is in progress must be recorded. These principles must be complied with when the RAA are compiled. However, this does not rule out certain adaptations at regional level, for example for livestock production. It should be stressed that the regional valuation total must be identical with the EAA valuations.

1. Output

a) Measuring output

7.08.1. All output is valued, whether it is intended for marketing outside the industry, for sale to other holdings or, in certain cases, for use by the same holding. Consequently:

- (a) any agricultural product leaving a holding in the region should be counted 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 holding should be included in the output of the region (cf. 2.20.8.).

7.08.2. 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 stocks (animals intended mainly for meat). Thus, in order to avoid double counting, transactions involving the movement of animals between holdings (which are taken to be “positive” sales for the holdings selling the livestock and “negative” sales for the purchasing holdings), are dealt with as set out below.

- (a) Transactions between holdings in the same region involving animals classified as fixed assets cancel each other out, apart from the transfer of ownership costs⁽⁶⁵⁾. They are not entered as the holdings’ sales and are therefore not included in the output of the region in question.
- (b) Animals classified as stock 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)⁽⁶⁶⁾.
- (c) When ownership transfer costs (transport, trade margins, etc.) relate to trade in animals classified as stock, they are deducted from output. This happens automatically when purchases from holdings in other regions are involved, since the costs are part of “negative”

⁽⁶⁵⁾ As long as the corresponding sales and purchases fall in the same accounting period.

⁽⁶⁶⁾ This procedure corresponds to that in the former RAA although the reasons are different. In the previous methodology, the treatment was as a result of the notion of a national farm. Now, the purchase of an animal is never to be recorded as intermediate consumption (basically, it is an acquisition of work-in-progress, cf. 2.23.4.) and the calculation of animal output can only be calculated indirectly, on the basis of the sales, the GFCF and the stock changes.

sales, whereas an adjustment must be made in sales, and thus in output, for trade in animals between holdings in the same region ⁽⁶⁷⁾.

b) Valuing output

- 7.08.3. Output should be valued at basic prices (cf. 2.31.1.), i.e. including subsidies on products, less taxes on products. This method of calculation means that taxes and subsidies on products need to be broken down by region.

2. Intermediate consumption

a) General rules

- 7.09.1. Intermediate consumption is the value of the goods (other than fixed assets) and market services consumed during the production process to produce other goods.
- 7.09.2. When the RAA are compiled intermediate consumption includes:
- (a) agricultural products purchased for consumption during the production process from other holdings (whether in the same region or in another region ⁽⁶⁸⁾);
 - (b) certain products used as intra-unit consumption and entered as output (cf. 2.20.6 and following).

b) Valuing intermediate consumption

- 7.09.3. All intermediate consumption should be valued at the acquisition price (excluding deductible VAT).

3. Gross capital formation

- 7.10.1. Gross capital formation is subdivided into:
- (a) gross fixed capital formation;
 - (b) changes in stocks.

a) Gross fixed capital formation (GFCF)

- 7.10.2. There is fixed capital formation in agriculture whenever a holder buys or produces fixed assets which can be used for more than a year in the agricultural production process. The allocation criterion for the recording of GFCF refers to the user industries and not to the legal owner ⁽⁶⁹⁾.
- 7.10.3. 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 these assets. Net capital formation is obtained by deducting the consumption of fixed assets from gross capital formation.
- 7.10.4. The GFCF for breeding stock and draught animals of a region corresponds to the difference between purchases outside the region (including imports) and sales to other regions (including exports), account being taken of the ownership transfer costs of sales within the region. When all

⁽⁶⁷⁾ In the former RAA, these costs were recorded under intermediate consumption, including when they concerned purchases from outside the region.

⁽⁶⁸⁾ In the former RAA, purchases from other holdings in the same region were excluded, those from holdings in another region were recorded as negative sales.

⁽⁶⁹⁾ In the former RAA the criterion of transfer of ownership was applied. Data should have come from purchasers but often the calculations were based on data from the industry producing the asset.

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 the all regional GFCF is the same as the GFCF of the national agricultural accounts. When the fixed capital is made up of livestock such as draught animals or breeding stock, or of dairy animals, they must be valued - when the bottom-up method is used - in line with the following convention: sales of animals to holdings in other regions constitute negative GFCF whereas purchases from other regions are positive GFCF.

b) Changes in stocks

- 7.10.5. Stocks comprise all the assets which are not part of fixed capital and which, at a given moment, are held temporarily by production units.
- 7.10.6. For animals classified as stocks, trade to be taken into account in the calculation of stock changes includes sales to and purchases from other regions as well as imports and exports .

C. OTHER TRANSACTIONS AND INCOME AGGREGATES

- 7.11. 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 95 covers the regional accounts of the agricultural industry with respect to only a few aggregates: value added, subsidies, taxes, compensation of employees, rents and other benefits, interest and GFCF.

1. General rules

- 7.12.1. In theory, distributive transactions are recorded when the claim (debt) is created, i.e. when it is considered certain or the amount is known, according to an accrual basis, and no longer when payments become due.
- 7.12.2. 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.

2. Value added

a) General rules

- 7.13.1. Value added is the result of the production activity of an economy or of one of its industries during a given period. It appears as the difference between the value of output and the value of intermediate consumption.

b) Valuing value added

- 7.13.2. Value added may be entered gross (gross value added at basic prices⁽⁷⁰⁾) or net (net value added at basic prices), i.e. before or after the deduction of the consumption of fixed capital. The basic prices relating to output are net of all taxes on products but include subsidies on products.
- 7.13.3. 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.

⁽⁷⁰⁾ In the former RAA value added was calculated at market prices. ESA 95 following SNA 1993 recommends use of basic prices.

3. Consumption of fixed capital

- 7.14. In the RAA, plantations yielding repeat products, land development work, machinery and ownership transfer costs (land, existing buildings, etc.), which make up the holding's fixed capital, suffer wear and tear, and obsolescence as means of production in the production process. Such wear and tear, and obsolescence is measured as the consumption of fixed capital.

4. Subsidies

- 7.15. Operating subsidies, which include subsidies on products, are not the only public transfers paid to agricultural holdings. Like other activities, agriculture also receives capital transfers. These are not taken into account when income from agricultural activity is calculated. Payments intended to finance farmers' purchases of assets are regarded as capital transfers, as are payments compensating them for the destruction or loss of fixed capital and land, for a reduction in the value of property or debt reduction, etc. (cf. 3.35.4.). The RAA applies the same rules as the EAA: flows that are classified as operating subsidies in the EAA are classified in the same way in the RAA, a similar treatment applying for flows in the form of capital transfers.

5. Operating surplus

- 7.16. Operating surplus is obtained from value added by deducting the compensation of employees and other taxes on production and by adding other subsidies on production.

6. Agricultural entrepreneurial income: general calculation rules

- 7.17. Directly payable property income arising from agricultural activities and non-agricultural secondary activities, i.e. interest paid on loans taken out in connection with these activities, including for the purchase of agricultural land, and rents paid to landowners, is deducted from operating surplus (cf. 3.28.1. and following).

D. A BRIEF LOOK AT IMPLEMENTATION

1. Introduction

- 7.18.1. This section aims to highlight **some aspects of the methodology**, in particular the choice of agricultural holding and the measure of output.
- 7.18.2. The agricultural holding is the reference unit for statistical surveys on agriculture, at both national and sub-national level. This is a major advantage for the RAA 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 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 holding, together with the concepts of characteristic activities and units, avoids having to make adjustments that might be contentious, as might be the case for kitchen gardens and private non-holder livestock rearing. This 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. These aspects are also consistent with the aim of giving priority to the bottom-up approach in the RAA.

2. Defining regional agriculture

- 7.19. For each region, the agricultural industry consists of all the holdings whose factors of production are located in the region. This 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 holdings **according to their headquarters and not directly according to the location of the factors of production**. These two locations are not always the same and this phenomenon is likely to be more frequent as holdings get larger. When the RAA are compiled, therefore, some holdings should be reclassified between regions and even, in some cases, split up. This is likely to be difficult in practice, in which case it may be preferable to keep **the same location for the holdings as in the statistical surveys**. This 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 holdings.

3. Measuring agricultural output

- 7.20.1. Agricultural output includes certain **crop products that are used again by the same holding in the form of intermediate consumption**; this 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, these then being given a value via prices. In this case, **all** output is valued, whether it is intended for marketing outside the industry, sale to other holdings or use by the same holding. The output of each region is thus obtained directly, in line with the concept adopted in the EAA and the RAA. 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 that which forms intra-unit consumption. Thus the RAA 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 this case, a top-down method based on national-level valuations is generally the only one that can be used ⁽⁷¹⁾.
- 7.20.2. As regards **animals**, whether these are classified as stocks or fixed capital, the following points should be taken into account:
- valuations at regional level of **changes in stocks and in GFCF relating to animals**, these two flows being in fact components of the indirect method of calculating output;
 - valuations of **trade in animals between regions**, this trade also being a component of the indirect method of calculating output;
 - breakdown between regions of **the import and export flows** of animals;
 - appropriate treatment of **ownership transfer costs**;
 - method of **adjusting** the RAA against the EAA.
- 7.20.3. 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.

4. Inseparable non-agricultural secondary activities

- 7.21. There are various ways of incorporating inseparable non-agricultural secondary activities into the RAA, depending on the type of activity. Indeed, some of these secondary activities are **highly**

⁽⁷¹⁾ According to the method used, the intra-unit consumption should be adjusted to the EAA values.

concentrated at regional level - agricultural product processing, for example. In this case, output valuations of both quantities and prices can rely on local statistical data. For this output, the values in the EAA are *de facto* the same as those in the RAA. 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 information (the FADN, for example) but there is no guarantee that these are regionally representative. Furthermore data may be old with no sources available for reliable updating. Lastly, it is only sometimes that there are qualitative indicators at regional level. In all these cases, the values of the EAA are the **starting point** for the RAA and top-down methods must often be used.

5. Intermediate consumption

7.22.1. Intermediate consumption in the RAA includes agricultural products used by holdings, whether these 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, etc. Moreover, some agricultural products of intra-unit consumption are also entered as intermediate consumption, essentially certain crops used as animal feed. No purchases of animals - even those imported - are to be entered as intermediate consumption.

7.22.2. 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 RAA and that part of the output which is intended to leave the industry, on a product-by-product basis ⁽⁷²⁾. However, it is not a totally accurate representation of the intermediate consumption of agricultural products in each region, because whilst agricultural products intended for intermediate consumption by holdings in other regions are included, agricultural products which come from holdings in other regions are not included.

Intermediate consumption must, therefore, be adjusted in line with the values in the EAA.

7.22.3. Another calculation method is also possible, **using the FADN as a source of information**. This source enables the intermediate consumption of agricultural products to be valued, irrespective of whether they come from sales by other 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 holding, and thus corrections are necessary ⁽⁷³⁾. Similarly, therefore, intermediate consumption must be adjusted in line with the values in the EAA.

⁽⁷²⁾ Excluded here are imported agricultural products (except animals) which do not introduce differences with the former RAA.

⁽⁷³⁾ FADN only covers change in stocks of fodder. This does not correspond with the RAA on either output or intermediate consumption.

6. Summary of the differences between the principal aggregates calculated according to the revised and unrevised methodologies of the EAA (and thus of the RAA)

a) Output

Output of region i (current RAA)	=	Output of "regional farm" i (former RAA)
	+	Sales of agricultural products between holdings in region i
	+	Purchases of agricultural products from other "regional farms"
	+	Certain agricultural products used as IC by the same holdings
	+	Output of inseparable secondary activities

b) Intermediate consumption

Intermediate consumption in region i (current RAA)	=	Intermediate consumption of "regional farm" i (former RAA)
	+	Purchases of agricultural products (intermediate consumption) from holdings in region i
	+	Certain agricultural products used as intermediate consumption by the holdings themselves
	+	IC of inseparable secondary activities

c) (Gross) value added at basic prices

(Gross) value added at basic prices in region i (current RAA)	=	(Gross) value added at market prices of the "regional farm" i (former RAA)
	+	Value added from inseparable secondary activities in region i
	+	(Subsidies - taxes) on products in region i
	-	Output from the kitchen gardens and private non-holder livestock rearing in region i

d) Agricultural entrepreneurial income

Agricultural entrepreneurial income in region i (current RAA)	=	Income from family labour on regional farm i (former RAA)
	+	Entrepreneurial income from inseparable secondary activities in region i
	+	Effect of the change to accrual basis (+ or -)
	+	Property income received (interest for incorporated companies)
	-	Flows of operating subsidies reclassified as capital transfers

APPENDIX I.A.

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.1 (first four digits) and the CPA 1996 (fifth and sixth digits)⁽⁷⁴⁾. Additional information, on a lower level, comes from the Harmonised System (1996)⁽⁷⁵⁾, 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.1 are listed separately at the end of this list.

01 Agriculture, hunting and related service activities

01.1 Growing of crops; market gardening; horticulture

01.11 Growing of cereals and other crops n.e.c.

01.11 1 Cereals

- 11 Durum wheat
- 12 Soft wheat and meslin
- 13 Maize (corn)
- 14 Rice, not husked
- 15 Barley
- 16 Rye, oats
 - Rye
 - Oats
- 17 Other cereals
 - Grain sorghum
 - Buckwheat
 - Millet
 - Canary seed
 - Other cereals

01.11 2 Vegetables

- 21 Potatoes
- 22 Dried leguminous vegetables, shelled
 - Peas (*Pisum sativum*)
 - Chickpeas (garbanzos)

⁽⁷⁴⁾ CPA: statistical classification of products by activity in the European Economic Community (cf. 1.30.2.).

⁽⁷⁵⁾ Harmonised System: harmonised commodity description and coding system for harmonising external trade classifications and countries' external trade statistics.

- Beans (*Vigna* spp., *Phaseolus* spp.)
 - Beans of the species *Vigna mungo* (L.) Hepper or *Vigna radiata* (L.) Wilczek
 - Small red (Adzuki) beans (*Phaseolus* or *Vigna angularis*)
 - Kidney beans, including white pea beans (*Phaseolus vulgaris*)
 - Other
- Lentils
- Broad beans (*Vicia faba* var. *major*) and horse beans (*Vicia faba* var. *equina*, *Vicia faba* var. *minor*)
- Other
- 23 Edible roots and tubers with high starch or inulin content
 - Manioc, arrowroot, salep, Jerusalem artichokes, sweet potatoes and similar roots and tubers
- 01.11 3 Oil seeds and oleaginous fruits**
- 31 Soya beans
- 32 Ground nuts
- 33 Sunflower, sesamum, safflower, rape, colza and mustard seeds
 - Rape or colza seeds, whether or not broken
 - Sunflower seeds, whether or not broken
 - Sesamum seeds
 - Mustard seeds
 - Safflower seeds
- 34 Cotton seeds
- 35 Oil seeds and oleaginous fruits n.e.c.
 - Copra
 - Linseed, whether or not broken
 - Palm nuts and kernels
 - Castor oil seeds
 - Poppy seeds
 - Shea nuts (karite nuts)
 - Other
- 01.11 4 Unmanufactured tobacco**
- 40 Unmanufactured tobacco
 - Tobacco, not stemmed/stripped
 - Tobacco, partly or wholly stemmed/stripped
- 01.11 5 Plants used for sugar manufacturing**
- 51 Sugar beet
- 52 Sugar cane
- 01.11 6 Straw and forage**
- 60 Straw and forage
 - Cereal straw and husks, unprepared, whether or not chopped, ground, pressed or in the form of pellets
 - Swedes, mangolds, fodder roots, hay, lucerne (alfalfa), clover, sainfoin, forage kale, lupines, vetches and similar forage products, whether or not in the form of pellets (not: lucerne (alfalfa) meal and pellets)

01.11 7 Raw vegetable materials used in textiles

- 71 Cotton, whether or not ginned
- 72 Jute and other textile bast fibres, except flax, true hemp and ramie
- 73 Flax and true hemp; sisal and other textile fibres of the genus Agave, raw
 - Flax, raw or retted
 - True hemp, raw or retted
 - Sisal and other textile fibres of the genus Agave, raw
 - Coconut, textile fibres, raw
 - Abaca (Manila hemp or Musa textilis Nee), textile fibres, raw
 - Other vegetable textile fibres, not elsewhere specified or included, raw

01.11 8 Natural rubber

- 80 Natural rubber
 - Natural rubber latex, whether or not prevulcanized
 - Natural rubber in other forms

01.11 9 Plants for perfumery, pharmacy and the like; sugar beet seeds, seeds of forage plants; other raw vegetable materials

- 91 Plants used primarily in perfumery, in pharmacy, or for insecticidal, fungicidal or similar purposes
 - Liquorice roots
 - Ginseng roots
 - Other
- 92 Sugar beet seeds and seeds of forage plants
 - Sugar beet seed
 - Seeds of forage plants, other than beet seed
 - Lucerne (alfalfa) seed
 - Clover (Trifolium spp.) seed
 - Fescue seed
 - Kentucky blue grass (Poa pratensis L.) seed
 - Rye grass (Lolium multiflorum Lam., Lolium perenne L.) seed
 - Timothy grass seed
 - Other
- 93 Other raw vegetable materials
 - Hop cones, fresh or dried, whether or not ground, powdered or in the form of pellets; lupulin
 - Other vegetable products

01.12 Growing of vegetables, horticultural specialities and nursery products
01.12 1 Other vegetables, fresh or chilled

- 11 Root and tuber vegetables
 - Onions and shallots
 - Garlic
 - Leeks and other alliaceous vegetables
 - Carrots and turnips
 - Other (salad beetroot, salsify, celeriac, radishes and similar edible roots)

- 12 Vegetables cultivated for their fruits
 - Tomatoes, fresh or chilled
 - Cucumbers and gherkins, fresh or chilled
 - Leguminous vegetables, shelled or unshelled, fresh or chilled
 - Peas (*Pisum sativum*)
 - Beans (*Vigna* spp., *Phaseolus* spp.)
 - Other leguminous vegetables
 - Melons (including watermelons)
 - 13 Other vegetables n.e.c.
 - Cabbages, cauliflowers, kohlrabi, kale and similar edible brassicas, fresh or chilled
 - Cauliflowers and headed broccoli
 - Brussels sprout
 - Other
 - Lettuce (*Lactuca sativa*) and chicory (*Cichorium* spp.), fresh or chilled
 - Lettuce
 - Cabbage lettuce (head lettuce)
 - Other
 - Chicory
 - Witloof chicory (*Cichorium intybus* var. *foliosum*)
 - Other
 - Other vegetables, fresh or chilled
 - Globe artichokes
 - Asparagus
 - Aubergines (egg-plants)
 - Celery other than celeriac
 - Mushrooms and truffles
 - Fruits of the genus *Capsicum* or of the genus *Pimenta*
 - Spinach, New Zealand spinach and orache spinach (garden spinach)
 - Other
- 01.12 2 Live plants; cut flowers and flower buds; flower seeds and fruit seeds; vegetable seeds**
- 21 Live plants; bulbs, tubers and roots; cuttings and slips; mushroom spawn
 - Bulbs, tubers, tuberous roots, corms, crowns and rhizomes, dormant, in growth or in flower; chicory plants and other roots
 - Other live plants (including their roots), cuttings and slips; mushroom spawn
 - Unrooted cuttings and slips
 - Trees, shrubs and bushes, grafted or not, of kinds which bear edible fruit or nuts
 - Rhododendrons and azaleas, grafted or not
 - Roses, grafted or not
 - Other
 - 22 Cut flowers and flower buds (including bouquets), wreaths and the like
 - Cut flowers and flower buds of a kind suitable for bouquets or for ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared
 - 23 Flower seeds and fruit seeds
 - Seeds of herbaceous plants cultivated principally for their flowers
 - Other

- 24 Vegetable seeds
 - Beet seed (except sugar beet seed)
 - Vegetable seeds

- 01.13 Growing of fruit, nuts, beverage and spice crops**
- 01.13 1 Grapes**
 - 11 Table grapes
 - 12 Other grapes, fresh ⁽⁷⁶⁾
- 01.13 2 Other fruit and nuts**
 - 21 Dates, figs, bananas, coconuts, Brazil nuts, cashew nuts, pineapples, avocados, mangoes, guavas
 - Coconuts
 - Brazil nuts
 - Cashew nuts
 - Bananas, including plantains, fresh or dried
 - Dates
 - Figs
 - Pineapples
 - Avocados
 - Guavas, mangoes and mangosteens
 - 22 Citrus fruit
 - Oranges
 - Mandarins (including tangerines and satsumas); clementines, wilkings and similar citrus hybrids
 - Lemons (Citrus limon, Citrus limonum) and limes (Citrus aurantifolia)
 - Grapefruit
 - Other
 - 23 Other fruit, locust beans
 - Papaws (papayas)
 - Apples
 - Pears and quinces
 - Apricots
 - Cherries
 - Peaches, including nectarines
 - Plums and sloes
 - Other fruit, fresh
 - Strawberries
 - Raspberries, blackberries, mulberries and loganberries
 - Black-, white- or redcurrants and gooseberries
 - Cranberries, bilberries and other fruits of the genus Vaccinium
 - Kiwifruit
 - Other
 - Locust beans, including locust bean seeds

⁽⁷⁶⁾ This sub-category includes the output of wine from self-produced grapes.

- 24 Olives and other nuts
 - Olives ⁽⁷⁷⁾
 - Other nuts, fresh or dried, whether or not shelled or peeled
 - Almonds
 - Hazelnuts or filberts (*Corylus* spp.)
 - Walnuts
 - Chestnuts (*Castanea* spp.)
 - Pistachios
 - Other

01.13 3 Beverage crops

- 31 Coffee, not roasted, not decaffeinated
- 32 Green tea (not fermented), black tea (fermented) and partly fermented tea, in immediate packings of a content > 3 kg
- 33 Maté
- 34 Coca beans

01.13 4 Spices, not processed

- 41 Spices, not processed
 - Pepper of the genus *Piper*; dried or crushed or ground fruits of the genus *Capsicum* or of the genus *Pimenta*
 - Vanilla
 - Cinnamon and cinnamon-tree flowers
 - Cloves (whole fruit, cloves and stems)
 - Nutmeg, mace and cardamoms
 - Seeds of anise, badian, fennel, coriander, cumin or caraway; juniper berries
 - Ginger, saffron, turmeric (*curcuma*), thyme, bay leaves, curry and other spices

01.2 Farming of animals

01.21 Farming of cattle, dairy farming

01.21 1 Bovine cattle, live

- 11 Bovine cattle, live, other than calves
 - Pure-bred breeding animals
 - Other
- 12 Calves

01.21 2 Raw milk from bovine cattle

01.21 3 Bovine semen

01.22 Farming of sheep, goats, horses, asses, mules and hinnies

01.22 1 Sheep, goats, horses, asses, mules and hinnies, live

- 11 Sheep, live
- 12 Goats, live

⁽⁷⁷⁾ This item includes the output of olive oil from self-produced olives.

- 13 Horses, asses, mules and hinnies, live
 - Horses
 - Pure-bred breeding animals
 - Other
 - Asses, mules and hinnies
- 01.22 2 Raw milk from sheep and goats**
 - 21 Raw milk from sheep
 - 22 Raw milk from goats
- 01.22 3 Wool and animal hair**
 - 31 Shorn wool, greasy, including fleece-washed shorn wool
 - 32 Fine or coarse animal hair (including horsehair), not carded or combed
 - Horsehair and horsehair waste, whether or not put up as a layer with or without supporting material
 - Fine or coarse animal hair, not carded or combed
 - Fine animal hair
 - Coarse animal hair
- 01.23 Farming of swine**
- 01.23 1 Swine, live**
 - 10 Swine, live
 - Live swine
 - Pure-bred breeding animals
 - Other
- 01.24 Farming of poultry**
- 01.24 1 Poultry, live ⁽⁷⁸⁾**
 - 10 Poultry, live
 - Live poultry, that is to say, fowls of the species Gallus domesticus, ducks, geese, turkeys and guinea fowls
- 01.24 2 Eggs, in shell ⁽⁷⁹⁾**
- 01.25 Other farming of animals**
- 01.25 1 Other live animals**
- 01.25 2 Other animal products**
 - 21 Natural honey
 - 22 Snails, live, fresh, chilled, frozen, dried, salted or in brine except sea snails; frogs' legs, fresh, chilled or frozen
 - 23 Edible products of animal origin n.e.c.
 - 24 Silk-worm cocoons suitable for reeling
 - 25 Insect waxes and spermaceti

⁽⁷⁸⁾ In the EAA, hatching eggs are treated as the semi-finished output of poultry production (cf. 1.38.2.). In the CPA, hatching eggs are classified together with eggs (cf. following footnote).

⁽⁷⁹⁾ Following the CPA, hatching eggs are part of this category. In the EAA however, hatching eggs are treated as semi-finished output of poultry production (cf. 1.38.2.).

- 01.25 3 Raw furskins and miscellaneous raw hides and skins**
- 31 Raw furskins, except of rabbits, hares and fur-bearing lambs
 - 32 Raw furskins of rabbits, hares and fur-bearing lambs
 - 33 Miscellaneous raw hides and skins

01.4 Agricultural and animal husbandry service activities, except veterinary activities

01.41 Agricultural service activities

01.41 1 Agricultural services

- 11 Services incidental to agricultural production
- 12 *Planting and maintenance services of gardens, parks and cemeteries* ⁽⁸⁰⁾

01.42 Animal husbandry service activities, except veterinary activities

01.42 1 Animal husbandry services (except veterinary services)

- 10 Animal husbandry services (except veterinary services)

01.5 Hunting, trapping and game propagation, including related service activities

01.50 Hunting, trapping and game propagation, including related service activities

01.50 1 Hunting, trapping, game propagation and related services

- 10 Hunting, trapping, game propagation and related services

Further activities (and products related to them) considered as part of the EAA

02 Forestry, logging and related service activities

02.0 Forestry, logging and related service activities

02.01 Forestry and logging

02.01 1 Wood in the rough

- 41 Parts of plants, grasses, mosses and lichens suitable for ornamental purposes ⁽⁸¹⁾
 - Foliage, branches and other parts of plants, without flowers or flower buds, and grasses, mosses and lichens, being goods of a kind suitable for bouquets or for ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared

⁽⁸⁰⁾ In the EAA, the service activities of this sub-category are not considered as agricultural (cf. 1.31.4.).

⁽⁸¹⁾ This sub-category includes also Christmas trees grown in Christmas tree nurseries.

- 42 Vegetable materials n.e.c., for plaiting, stuffing, padding, dyeing or tanning; vegetable products n.e.c. ⁽⁸²⁾
- Vegetable materials of a kind used primarily for plaiting (for example, bamboos, rattans, reeds, rushes, osier, raffia, cleaned, bleached or dyed cereal straw, and lime bark)
 - Bamboos
 - Rattans
 - Other

15 Manufacture of food products and beverages

15.4 Manufacture of vegetable and animal oils and fats

15.41 Manufacture of crude oils and fats

15.41 1 Animal and vegetable oils and fats, crude

- 12 Soya-bean, ground-nut, olive, sunflower-seed, safflower, cotton-seed, rape, colza and mustard oil, crude ⁽⁸³⁾
- Olive oil, virgin

15.9 Manufacture of beverages

15.93 Manufacture of wines

15.93 1 Wines, except wine lees

- 12 Wine of fresh grapes, except sparkling wine; grape must ⁽⁸⁴⁾
- Wine (except sparkling wine); grape must with fermentation prevented or arrested by the addition of alcohol
 - Other grape must

⁽⁸²⁾ Only a part of this sub-category: bamboos, rattans, and other (corresponding to Code 1401, Harmonised System (1996)) has been attributed to the EAA.

⁽⁸³⁾ Only a part of this sub-category: the production of olive oil, virgin (Code 1509 10 (Harmonised System, 1996)) **which has been produced by groups of producers (e.g. co-operatives)** is considered as agricultural activity, in the EAA (cf. 1.33.1.).

⁽⁸⁴⁾ Only the part (of this sub-category) **which has been produced by groups of producers (e.g. co-operatives)** is considered as agricultural activity, in the EAA (cf. 1.33.1.).

APPENDIX I.B.

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 ⁽⁸⁵⁾
- 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 Motor fuels
- 2.3 Heating fuels
- 2.4 Lubricants

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

⁽⁸⁵⁾ "Christmas trees" here do not include "loppings" from mature trees in forests. These are considered as products of the forestry industry.

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 Other goods and services

10.1 Material and small tools

- 10.1.1 Light implements (e.g. knapsack sprayers, water pumps, small electric motors, small internal combustion engines, electrified fences)
- 10.1.2 Small tools (e.g. shovels, spades, hoes)
- 10.1.3 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)

10.2 Rental costs

- 10.2.1 Business use of non-residential buildings
- 10.2.2 Machinery and other items of equipment without operating staff
- 10.2.3 Payments for use of intangible assets (computer software)
- 10.2.4 Payments for use of non-produced intangible assets (production rights, etc.)

10.3 Other goods and services

- 10.3.1 Water rates ⁽⁸⁶⁾ (business use) linked directly or indirectly to the quantity of water consumed
- 10.3.2 Expenditure on agricultural newspapers and magazines
- 10.3.3 Substances added in transforming wine must to wine (fining agents, sulphur, sugar, other additives)
- 10.3.4 Services provided by transport, commercial and storage enterprises
- 10.3.5 Postal and telecommunications charges incurred in the performance of work
- 10.3.6 Remuneration for insurance services contracted to cover risks associated with agricultural activity
- 10.3.7 Cover charges
- 10.3.8 Expenditure on artificial insemination and castration
- 10.3.9 Bank fees
- 10.3.10 Levies and subscriptions to economic and professional organisations (e.g. farmers' associations, chambers of commerce, etc.)
- 10.3.11 Expenditure on milk inspection, shows, entries in pedigree registers
- 10.3.12 Fees for seed certification
- 10.3.13 Fees for medical examinations of workers necessitated by their employment
- 10.3.14 Costs of engaging labour (advertising, recruitment)
- 10.3.15 Fees for agricultural consultants, surveyors, accountants, tax consultants, lawyers, etc.)
- 10.3.16 Costs of soil analyses
- 10.3.17 Purchase of services of scientific research, market research and advertising
- 10.3.18 Travel expenses and payments to independent transport firms engaged by the employer for the transport of employees
- 10.3.19 Other goods and services, n.e.c.

⁽⁸⁶⁾ Water rates paid purely as a tax and unrelated to the quantity of water consumed are recorded as taxes on production.

APPENDIX I.C.**GROSS FIXED CAPITAL FORMATION OF THE AGRICULTURAL INDUSTRY****1 Plantations**

- 1.1 Orchards
- 1.2 Vineyards and olive plantations
- 1.3 Hop fields
- 1.4 Asparagus beds
- 1.5 Berry plantations
- 1.6 Other plantations yielding repeat products
- 1.7 Costs of tending new plantations during the first three years

2 Livestock

- 2.1 Breeding animals (excluding breeding fowl)
- 2.2 Draught animals
- 2.3 Dairy animals
- 2.4 Sheep reared for wool
- 2.5 Others

3 Machinery and other equipment

- 3.1 Rotovators and other two-wheeled plant
- 3.2 Machinery and plant for soil preparation, sowing, planting, cultivation, fertilisation and protection of plants
- 3.3 Machinery and plant for harvesting
- 3.4 Machinery and installations on the farm premises
 - 3.4.1 For crop production (e.g. for reception, sorting, ventilation, storage of products)
 - 3.4.2 For animal production (e.g. plant for milking, milk refrigeration, dung removal)
 - 3.4.3 For processing of crops into grape must, wine and olive oil)
 - 3.4.4 Others (e.g. for irrigation)

4 Transport equipment

- 4.1 Agricultural tractors ⁽⁸⁷⁾
- 4.2 Other vehicles (motor cars, estate cars, lorries)
- 4.3 Trailers

5 Farm buildings

- 5.1 New buildings
- 5.2 Renovations (large-scale repairs) and improvements
- 5.3 Others

⁽⁸⁷⁾ As defined in Council Directive 80/720/EEC of 24 June 1980 viz "any motor vehicle fitted with wheels or endless tracks and having at least two axles, the main function of which lies in its tractive power and which is specifically designed to tow, push, carry or power certain tools, machinery or trailers intended for agricultural ... use".

6 Major soil improvements

- 6.1 Consolidation of fragmented holdings (costs borne by farmers)
- 6.2 Road construction
- 6.3 Dyke construction
- 6.4 Clearing
- 6.5 Drainage
- 6.6 Installation of irrigation
- 6.7 Other soil improvements

7 Costs linked to trade in land and patented assets (production rights, etc.)**8 Others**

- 8.1 Intangible produced assets (computer software, etc.)
- 8.2 Other gross fixed capital formation, n.e.c.

APPENDIX II.A.

LIST OF CHARACTERISTIC ACTIVITIES OF THE FORESTRY INDUSTRY AND OF THE PRODUCTS RELATED TO THESE ACTIVITIES, IN THE EAF

This list of activities of the forestry industry (and of the products related to them) has been drawn up on the basis of the NACE Rev.1 (first four digits), the CPA 1996 (fifth and sixth digits)⁽⁸⁸⁾. Additional information, on a lower level, comes from the Harmonised System (1996)⁽⁸⁹⁾, in line with the references stipulated in the CPA.

02 Forestry, logging and related service activities

02.0 Forestry, logging and related service activities

02.01 Forestry and logging

Wood in the rough; natural gums; natural cork; other forestry products

02.01 1 Wood in the rough

- 11 Logs of coniferous wood
- 12 Logs of non-coniferous wood
 - Of oak (*Quercus* spp.)
 - Of beech (*Fagus* spp.)
 - Other
- 13 Logs of tropical wood
 - Dark red meranti, light red meranti and meranti bakau
 - Other
- 14 Fuel wood
- 15 Other wood in the rough, including split poles and pickets
 - Coniferous
 - Non-coniferous

02.01 2 Natural gums

- 21 Balata, gutta-percha, guayula, chicle and similar natural gums
- 22 Lac, natural gums, resins, gum-resins and balsams
 - Lac
 - Gum Arabic
 - Other

02.01 3 Natural cork, raw or simply prepared

02.01 4 Other forestry products

- 41 *Parts of plants, grasses, mosses and lichens suitable for ornamental purposes* ⁽⁹⁰⁾

⁽⁸⁸⁾ CPA: statistical classification of products by activity in the European Economic Community (cf. 1.30.2.).

⁽⁸⁹⁾ Harmonised System: harmonised commodity description and coding system for harmonising external trade classifications and countries' external trade statistics.

⁽⁹⁰⁾ In the EAA/EAF, the products of this sub-category are considered as agricultural (cf. Appendix I.A.).

- 42 Vegetable materials n.e.c., for plaiting, stuffing, padding, dyeing or tanning; vegetable products n.e.c.
- *Vegetable materials of a kind used primarily for plaiting (for example, bamboos, rattans, reeds, rushes, osier, raffia, cleaned, bleached or dyed cereal straw, and lime bark) ⁽⁹¹⁾*
 - *Bamboos*
 - *Rattans*
 - *Other*
 - Vegetable materials of a kind used primarily as stuffing or as padding (for example, kapok, vegetable hair and eel-grass), whether or not put up as a layer with or without supporting material
 - Kapok
 - Other
 - Vegetable materials of a kind used primarily in brooms or in brushes (for example, broomcorn, piassava, couch-grass and istle), whether or not in hanks or bundles
 - Broomcorn (*Sorghum vulgare* var. *technicum*)
 - Other
 - Vegetable products not elsewhere specified or included (excluding cotton linters)
 - Raw vegetable materials of a kind used primarily in dyeing or tanning
 - Other
 - Acorns and horse-chestnuts

02.01 5 Standing timber

02.01 6 Forest trees nurseries services

02.02 Forestry and logging related service activities

Services incidental to forestry and logging

⁽⁹¹⁾ In the EAA/EAF, these products (bamboos, rattans, other) are considered as agricultural (cf. Appendix I.A.).

APPENDIX II.B.**INTERMEDIATE CONSUMPTION OF THE FORESTRY INDUSTRY**

- 1 Forestry seedlings and cuttings (excluding planting stock for Christmas trees ⁽⁹²⁾, vines, fruit trees and ornamental trees)**
- 2 Energy; lubricants**
 - 2.1 Electricity
 - 2.2 Motor fuels
 - 2.3 Heating fuels
 - 2.4 Lubricants
- 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 Maintenance of materials**
 - 5.1 Maintenance and repair of vehicles, machinery and other items of equipment
 - 5.1.1 Spare parts (e.g. sparking-plugs, batteries, saw blades, tyres)
 - 5.1.2 Labour charges (e.g. for blacksmiths, mechanics, electricians)
 - 5.1.3 Total costs borne by forestry in respect of overall payments to non-forestry units, (e.g. material, labour charges, management earnings and profits)

⁽⁹²⁾ Includes plants for forest trees "loppings" from which may be used for ornamental purposes e.g. for Christmas trees (see also Appendix I B.).

6 Maintenance of buildings

- 6.1 Material used (e.g. cement, sand, bricks, tiles, glass)
- 6.2 Labour charges (e.g. for painters, builders' labourers, carpenters, joiners, plumbers, electricians)
- 6.3 Total costs borne by forestry in respect of overall payments to non-forestry units (e.g. material, labour charges, management earnings and profits)

7 Forestry services

8 Other goods and services

- 8.1 Material and small tools
 - 8.1.1 Light implements (e.g. rope hoists, knapsack sprayers, water pumps, small electric motors, small internal combustion engines, electrified fences)
 - 8.1.2 Small tools (e.g. hand saws, axes, shovels, spades, hoes)
 - 8.1.3 Other material (e.g. wire-ropes, wire, wire netting, buckets, batteries, lamps, switches, nails, packing material, refills for fire extinguishers, plastic sheeting, work clothes, boots)
- 8.2 Rental costs
 - 8.2.1 Business use of non-residential buildings
 - 8.2.2 Machinery and other items of equipment without operating staff
 - 8.2.3 Payments for use of intangible assets (computer software)
 - 8.2.4 Payments for use of non-produced intangible assets (production rights, etc.)
- 8.3 Other goods and services
 - 8.3.1 Water rates ⁽⁹³⁾ (business use) linked directly or indirectly to the quantity of water consumed
 - 8.3.2 Expenditure on forestry newspapers and magazines
 - 8.3.3 Services provided by transport, commercial and storage enterprises
 - 8.3.4 Postal and telecommunications charges incurred in the performance of work
 - 8.3.5 Remuneration for insurance services contracted to cover risks associated with forestry activity
 - 8.3.6 Bank fees
 - 8.3.7 Levies and subscriptions to economic and professional associations (e.g. chamber of commerce, etc.)
 - 8.3.8 Fees for medical examinations of workers necessitated by their employment
 - 8.3.9 Costs of engaging labour (advertising, recruitment)
 - 8.3.10 Fees for forestry consultants, surveyors, accountants, tax consultants, lawyers, etc.)
 - 8.3.11 Costs of soil analyses
 - 8.3.12 Purchase of services of scientific research, market research and advertising
 - 8.3.13 Travel expenses and payments to independent transport firms engaged by the employer for the transport of employees
 - 8.3.14 Other goods and services, n.e.c.

⁽⁹³⁾ Water rates paid purely as a tax and unrelated to the quantity of water consumed are recorded as taxes on production.

APPENDIX II.C.

GROSS FIXED CAPITAL FORMATION OF THE FORESTRY INDUSTRY

- 1 Afforestation and reafforestation**
 - 1.1 Afforestation and reafforestation (for the repeat production of forestry products such as cork)
 - 1.2 Expenditure on subsequent improvements and tending during the first five years
- 2 Machinery and other equipment**
 - 2.1 Rotovators and other two-wheeled plant
 - 2.2 Machinery and plant for soil preparation, sowing, planting, cultivation, fertilisation and protection of plants (e.g. motor-powered hoes and cultivators, clearing machines)
 - 2.3 Machinery and equipment for felling trees and transporting timber within the forest with the exception of transport equipment (e.g. motor-powered saws, bark-stripping, timber shredding and conveying machines, spraying installations for wood preservation)
 - 2.4 Machinery and installations on forestry premises
 - 2.4.1 For forestry plants (e.g. sorting, ventilation, storage of products)
 - 2.4.2 Others (e.g. for irrigation)
- 3 Transport equipment**
 - 3.1 Forestry tractors ⁽⁹⁴⁾
 - 3.2 Other vehicles (motor cars, estate cars, lorries)
 - 3.3 Trailers
- 4 Forestry buildings**
 - 4.1 New buildings
 - 4.2 Renovations (large-scale repairs) and improvements
 - 4.3 Others
- 5 Major soil improvements**
 - 5.1 Consolidation of fragmented holdings (costs borne by forestry)
 - 5.2 Road construction
 - 5.3 Dyke construction
 - 5.4 Clearing
 - 5.5 Drainage
 - 5.6 Installation of irrigation
 - 5.7 Other construction engineering work for soil improvement
- 6 Costs linked to trade in land and patented assets (production rights, etc.)**
- 7 Others**
 - 7.1 Intangible produced assets (computer software, etc.)
 - 7.2 Other gross fixed capital formation, n.e.c.

⁽⁹⁴⁾ As defined in Council Directive 80/720/EEC of 24 June 1980 viz "any motor vehicle fitted with wheels or endless tracks and having at least two axles, the main function of which lies in its tractive power and which is specifically designed to tow, push, carry or power certain tools, machinery or trailers intended for ... forestry use".

APPENDIX III.

ELABORATION TABLES OF THE ECONOMIC ACCOUNTS FOR AGRICULTURE

Table 2. Elaboration tables of the EAA: output (prices and values)

Item	New-CRONOS code	Description	PRODUCER PRICE / TON							VALUES AT PRODUCER PRICE								
			Intra-unit consumption (feedingstuffs)	Processing by producers (separable activities)	Own final consumption	Sales			Own-account produced fixed capital goods	Change in stocks	at current prices						at n-1 prices	
						domestic		abroad			Intra-unit consumption (feedingstuffs)	Processing by producers (separable activities)	Own final consumption	Sales (1)	Own-account produced fixed capital goods	Change in stocks	Output EAA	
						to other agricultural units	outside of the industry										17v	17v n-1
7p	10p	11p	12p1	12p2	12p3	13p	16p	7v	10v	11v	12v	13v	16v	17v	17v n-1			
01	01000	CEREALS (including seeds)																
01.1	01100	Wheat and spelt																
01.1/1	01110	Soft wheat and spelt																
01.1/2	01120	Durum wheat																
01.2	01200	Rye and meslin																
01.3	01300	Barley																
01.4	01400	Oats and summer cereal mixtures																
01.5	01500	Grain maize																
01.6	01600	Rice																
01.7	01900	Other cereals																
02	02000	INDUSTRIAL CROPS																
02.1	02100	Oil seeds and oleaginous fruits (including seeds)																
02.1/1	02110	Rape and turnip rape seed																
02.1/2	02120	Sunflower																
02.1/3	02130	Soya																
02.1/4	02190	Other oleaginous products																
02.2	02200	Protein crops (including seeds)																
02.3	02300	Raw tobacco																
02.4	02400	Sugar beet																
02.5	02900	Other industrial crops																
02.5/1	02910	Fibre plants																
02.5/2	02920	Hops																
02.5/3	02930	Other industrial crops: others																
03	03000	FORAGE PLANTS																
03.1	03100	Fodder maize																
03.2	03200	Fodder root crops (including forage beet)																
03.3	03900	Other forage plants																

(1) $12v = (12v1 + 12v2 + 12v3) - (\text{imports of live animals as described in 2.23.7.})$

Table 2. (cont.) Elaboration tables of the EAA: output (prices and values)

Item	New-CRONOS code	Description	PRODUCER PRICE / TON							VALUES AT PRODUCER PRICE								
			Intra-unit consumption (feedingstuffs)	Processing by producers (separable activities)	Own final consumption	Sales			Own-account produced fixed capital goods	Change in stocks	at current prices						at n-1 prices	
						domestic		abroad			Intra-unit consumption (feedingstuffs)	Processing by producers (separable activities)	Own final consumption	Sales (1)	Own-account produced fixed capital goods	Change in stocks	Output EAA	
						to other agricultural units	outside of the industry										17v	17v n-1
7p	10p	11p	12p1	12p2	12p3	13p	16p	7v	10v	11v	12v	13v	16v	17v	17v n-1			
04	04000	VEGETABLES AND HORTICULTURAL PRODUCTS																
04.1	04100	Fresh vegetables																
04.1/1	04110	Cauliflower																
04.1/2	04120	Tomatoes																
04.1/3	04190	Other fresh vegetables																
04.2	04200	Plants and flowers																
04.2/1	04210	Nursery plants																
04.2/2	04220	Ornamental plants and flowers (including Christmas trees)																
04.2/3	04230	Plantations																
05	05000	POTATOES (including seeds)																
06	06000	FRUITS																
06.1	06100	Fresh fruit																
06.1/1	06110	Dessert apples																
06.1/2	06120	Dessert pears																
06.1/3	06130	Peaches																
06.1/4	06190	Other fresh fruit																
06.2	06200	Citrus fruits																
06.2/1	06210	Sweet oranges																
06.2/2	06220	Mandarins																
06.2/3	06230	Lemons																
06.2/4	06290	Other citrus fruits																
06.3	06300	Tropical fruit																
06.4	06400	Grapes																
06.4/1	06410	Dessert grapes																
06.4/2	06490	Other grapes																

(1) $12v = (12v1 + 12v2 + 12v3) - (\text{imports of live animals as described in 2.23.7.})$

Table 2. (cont.) Elaboration tables of the EAA: output (prices and values)

Item	New-CRONOS code	Description	PRODUCER PRICE / TON								VALUES AT PRODUCER PRICE							
			Intra-unit consumption (feedingstuffs)	Processing by producers (separable activities)	Own final consumption	Sales			Own-account produced fixed capital goods	Change in stocks	Intra-unit consumption (feedingstuffs)	Processing by producers (separable activities)	Own final consumption	at current prices			at n-1 prices	
						domestic		abroad						Sales (1)	Own-account produced fixed capital goods	Change in stocks	Output EAA	
						to other agricultural units	outside of the industry										17v	17v n-1
7p	10p	11p	12p1	12p2	12p3	13p	16p	7v	10v	11v	12v	13v	16v	17v	17v n-1			
06.5	06500	Olives																
06.5/1	06510	Table olives																
06.5/2	06590	Other olives																
07	07000	WINE																
07.1	07100	Table wine																
07.2	07200	Quality wine																
08	08000	OLIVE OIL																
09	09000	OTHER CROP PRODUCTS																
09.1	09100	Vegetable materials used primarily for plaiting																
09.2	09200	Seeds																
09.3	09900	Other crop products: others																
10	10000	CROP OUTPUT (01 TO 09)																
11	11000	ANIMALS																
11.1	11100	Cattle																
11.2	11200	Pigs																
11.3	11300	Equines																
11.4	11400	Sheep and goats																
11.5	11500	Poultry																
11.6	11900	Other animals																
12	12000	ANIMAL PRODUCTS																
12.1	12100	Milk																
12.2	12200	Eggs																
12.3	12900	Other animal products																
12.3/1	12910	Raw wool																
12.3/2	12920	Silkworm cocoons																
12.3/3	12930	Other animal products: others																
13	13000	ANIMAL OUTPUT (11+12)																

(1) $12v = (12v1 + 12v2 + 12v3) - (\text{imports of live animals as described in 2.23.7.})$

Table 2. (cont.) Elaboration tables of the EAA: output (prices and values)

Item	New-CRONOS code	Description	PRODUCER PRICE / TON							VALUES AT PRODUCER PRICE								
			Intra-unit consumption (feedingstuffs)	Processing by producers (separable activities)	Own final consumption	Sales			Own-account produced fixed capital goods	Change in stocks	at current prices						at n-1 prices	
						domestic		abroad			Intra-unit consumption (feedingstuffs)	Processing by producers (separable activities)	Own final consumption	Sales (1)	Own-account produced fixed capital goods	Change in stocks	Output EAA	
						to other agricultural units	outside of the industry										17v	17v n-1
7p	10p	11p	12p1	12p2	12p3	13p	16p	7v	10v	11v	12v	13v	16v	17v	17v n-1			
14	14000	AGRICULTURAL GOODS OUTPUT (10+13)																
15	15000	AGRICULTURAL SERVICES OUTPUT																
15.1	15100	AGRICULTURAL SERVICES																
15.2	15200	RENTING OF MILK QUOTA																
16	16000	AGRICULTURAL OUTPUT (14+15)																
17	17000	NON-AGRICULTURAL SECONDARY ACTIVITIES (INSEPARABLE)																
17.1	17100	PROCESSING OF AGRICULTURAL PRODUCTS																
17.1/1	17110	- cereals																
17.1/2	17120	- vegetables																
17.1/3	17130	- fruits																
17.1/4	17140	- wine																
17.1/5	17150	- animals																
17.1/6	17160	- animal products																
17.1/6/1	17161	- milk																
17.1/6/2	17162	- other animal products																
17.1/7	17190	- other																
17.2	17900	OTHER INSEPARABLE SECONDARY ACTIVITIES (GOODS AND SERVICES)																
18	18000	OUTPUT OF THE AGRICULTURAL 'INDUSTRY' (16+17)																

(1) $12v = (12v1 + 12v2 + 12v3) - (\text{imports of live animals as described in 2.23.7.})$

Table 3. Elaboration tables of the EAA: intermediate consumption (values)

Item	New-CRONOS code	Description	Intra-unit consumption		Purchases of goods and services for intermediate consumption from other units		Purchases of goods and services for intermediate consumption from outside the industry		Change in stocks of intermediate consumption		Intermediate consumption (actual)	
			at current prices	at n-1 prices	at current prices	at n-1 prices	at current prices	at n-1 prices	at current prices	at n-1 prices	at current prices	at n-1 prices
19.01	19010	SEEDS AND PLANTING STOCK										
19.02	19020	ENERGY; LUBRICANTS										
19.02/1	19021	- electricity										
19.02/2	19022	- gas										
19.02/3	19023	- other fuels and propellants										
19.02/4	19029	- other										
19.03	19030	FERTILISERS AND SOIL IMPROVERS										
19.04	19040	PLANT PROTECTION PRODUCTS AND PESTICIDES										
19.05	19050	VETERINARY EXPENSES										
19.06	19060	ANIMAL FEEDINGSTUFFS										
19.07	19070	MAINTENANCE OF MATERIALS										
19.08	19080	MAINTENANCE OF BUILDINGS										
19.09	19090	AGRICULTURAL SERVICES										
19.10	19900	OTHER GOODS AND SERVICES										
19	19000	TOTAL INTERMEDIATE CONSUMPTION										

APPENDIX IV.

ELABORATION TABLES OF THE ECONOMIC ACCOUNTS FOR FORESTRY

Table 1. Elaboration tables of the EAF: output

Item	New-CRONOS code	Description	Quantities	Prices	Values	
					at current prices	at n-1 prices
01	51000	CONIFEROUS TIMBER FOR INDUSTRIAL USES				
01.1	51100	CONIFEROUS LONG TIMBER				
01.2	51200	CONIFEROUS STACKWOOD				
01.3	51900	CONIFEROUS TIMBER FOR INDUSTRIAL USES: OTHER				
02	52000	NON-CONIFEROUS TIMBER FOR INDUSTRIAL USES				
02.1	52100	LONG TIMBER (NON-CONIFEROUS)				
02.2	52200	STACKWOOD (NON-CONIFEROUS)				
02.3	52900	NON-CONIFEROUS TIMBER FOR INDUSTRIAL USES: OTHER				
03	53000	FIREWOOD (CONIFEROUS AND NON-CONIFEROUS)				
04	54000	OTHER PRODUCTS				
04.1	54100	CORK				
04.2	54200	FORESTRY AND NURSERY PLANTS				
04.3	54300	AFORESTATION AND CONVERSION				
04.4	54900	OTHER FORESTRY PRODUCTS				
05	14000	FORESTRY GOODS OUTPUT (01 TO 04)				
06	15000	FORESTRY SERVICES OUTPUT				
07	16000	FORESTRY OUTPUT (05+06)				
08	17000	NON-FORESTRY SECONDARY ACTIVITIES (INSEPARABLE)				
08.1	17100	PRODUCTS FROM THE TRANSFORMATION OF FORESTRY PRODUCTS				
08.2	17900	OTHER NON-SEPARABLE SECONDARY ACTIVITIES (GOODS AND SERVICES)				
09	18000	OUTPUT OF THE FORESTRY 'INDUSTRY' (07+08)				

**Table 2. Elaboration tables of the EAF:
intermediate consumption**

Item	New-CRONOS code	Description	Purchases of goods and services for intermediate consumption		Change in stocks of intermediate consumption		Intermediate consumption (actual)	
			at current prices	at n-1 prices	at current prices	at n-1 prices	at current prices	at n-1 prices
10.1	19010	PLANTS						
10.2	19020	ENERGY; LUBRICANTS						
10.2/1	19021	- electricity						
10.2/2	19022	- gas						
10.2/3	19023	- other fuels and propellants						
10.2/4	19029	- other						
10.3	19030	FERTILISERS AND SOIL IMPROVERS						
10.4	19040	PLANT PROTECTION PRODUCTS AND PESTICIDES						
10.5	19070	MAINTENANCE OF MATERIALS						
10.6	19080	MAINTENANCE OF BUILDINGS						
10.7	19090	FORESTRY SERVICES						
10.8	19900	OTHER GOODS AND SERVICES						
10	19000	TOTAL INTERMEDIATE CONSUMPTION						

APPENDIX V.

DATA TRANSMISSION TABLE FOR THE ECONOMIC ACCOUNTS FOR AGRICULTURE

The EAA data transmission table is based on a list of items (see tables below) for which Member States of the European Union are requested to supply data. According to the sequence of accounts, presented in Chapter I, the items of the data transmission table correspond to current transactions in the production account and the generation of income account. Additionally, there are certain items from the entrepreneurial income account and the capital account.

For each of the **output items** (Items 01 to 18, including sub-items), Member States are requested to transmit the **value at basic prices** as well as its components: the **value at producer prices**, **subsidies on products** and **taxes on products**.

For the **items of intermediate consumption** (Item 19, including sub-items), **values at purchaser prices** have to be transmitted. The data transmission table contains separate lines for additional data on **subsidies and taxes on products** for the individual items of intermediate consumption.

The data for the production account and for gross fixed capital formation have to be transmitted at both **current prices** and **constant prices** (cf. Chapter V). The values should be expressed in **millions of units of the national currency** (in the case of Spanish peseta and Italian lire: billions).

1. Production Account

Item	Code NewCRONOS	Description
01	01000	CEREALS (including seeds)
01.1	01100	Wheat and spelt
01.1/1	01110	Soft wheat and spelt
01.1/2	01120	Durum wheat
01.2	01200	Rye and meslin
01.3	01300	Barley
01.4	01400	Oats and summer cereal mixtures
01.5	01500	Grain maize
01.6	01600	Rice
01.7	01900	Other cereals
02	02000	INDUSTRIAL CROPS
02.1	02100	Oil seeds and oleaginous fruits (including seeds)
02.1/1	02110	Rape and turnip rape seed
02.1/2	02120	Sunflower
02.1/3	02130	Soya
02.1/4	02190	Other oleaginous products
02.2	02200	Protein crops (including seeds)
02.3	02300	Raw tobacco
02.4	02400	Sugar beet
02.5	02900	Other industrial crops
02.5/1	02910	Fibre plants
02.5/2	02920	Hops
02.5/3	02930	Other industrial crops: others
03	03000	FORAGE PLANTS
03.1	03100	Fodder maize
03.2	03200	Fodder root crops (including forage beet)
03.3	03900	Other forage plants

1. Production Account (cont.)

Item	Code NewCRONOS	Description
04	04000	VEGETABLES AND HORTICULTURAL PRODUCTS
04.1	04100	Fresh vegetables
04.1/1	04110	Cauliflower
04.1/2	04120	Tomatoes
04.1/3	04190	Other fresh vegetables
04.2	04200	Plants and flowers
04.2/1	04210	Nursery plants
04.2/2	04220	Ornamental plants and flowers (including Christmas trees)
04.2/3	04230	Plantations
05	05000	POTATOES (including seeds)
06	06000	FRUITS
06.1	06100	Fresh fruit
06.1/1	06110	Dessert apples
06.1/2	06120	Dessert pears
06.1/3	06130	Peaches
06.1/4	06190	Other fresh fruit
06.2	06200	Citrus fruits
06.2/1	06210	Sweet oranges
06.2/2	06220	Mandarins
06.2/3	06230	Lemons
06.2/4	06290	Other citrus fruits
06.3	06300	Tropical fruit
06.4	06400	Grapes
06.4/1	06410	Dessert grapes
06.4/2	06490	Other grapes
06.5	06500	Olives
06.5/1	06510	Table olives
06.5/2	06590	Other olives
07	07000	WINE
07.1	07100	Table wine
07.2	07200	Quality wine

1. Production Account (cont.)

Item	Code NewCRONOS	Description
08	08000	OLIVE OIL
09	09000	OTHER CROP PRODUCTS
09.1	09100	Vegetable materials used primarily for plaiting
09.2	09200	Seeds
09.3	09900	Other crop products: others
10	10000	CROP OUTPUT (01 TO 09)
11	11000	ANIMALS
11.1	11100	Cattle
11.2	11200	Pigs
11.3	11300	Equines
11.4	11400	Sheep and goats
11.5	11500	Poultry
11.6	11900	Other animals
12	12000	ANIMAL PRODUCTS
12.1	12100	Milk
12.2	12200	Eggs
12.3	12900	Other animal products
12.3/1	12910	Raw wool
12.3/2	12920	Silkworm cocoons
12.3/3	12930	Other animal products: others
13	13000	ANIMAL OUTPUT (11+12)
14	14000	AGRICULTURAL GOODS OUTPUT (10+13)
15	15000	AGRICULTURAL SERVICES OUTPUT
15.1	15100	AGRICULTURAL SERVICES
15.2	15200	RENTING OF MILK QUOTA
16	16000	AGRICULTURAL OUTPUT (14+15)

1. Production Account (cont.)

Item	Code NewCRONOS	Description
17	17000	NON-AGRICULTURAL SECONDARY ACTIVITIES (INSEPARABLE)
17.1	17100	PROCESSING OF AGRICULTURAL PRODUCTS
17.1/1	17110	- cereals
17.1/2	17120	- vegetables
17.1/3	17130	- fruits
17.1/4	17140	- wine
17.1/5	17150	- animals
17.1/6	17160	- animal products
17.1/6/1	17161	- <i>milk</i>
17.1/6/2	17162	- <i>other animal products</i>
17.1/7	17190	- other
17.2	17900	OTHER INSEPARABLE SECONDARY ACTIVITIES (GOODS AND SERVICES)
18	18000	OUTPUT OF THE AGRICULTURAL 'INDUSTRY' (16+17)

1. Production Account (cont.)

Item	Code NewCRONOS	Description
19	19000	TOTAL INTERMEDIATE CONSUMPTION
19.01	19010	SEEDS AND PLANTING STOCK
19.01/1	19011	- seeds and planting stock supplied by other agricultural holdings
19.01/2	19012	- seeds and planting stock purchased from outside the agricultural 'industry'
19.02	19020	ENERGY; LUBRICANTS
19.02/1	19021	- electricity
19.02/2	19022	- gas
19.02/3	19023	- other fuels and propellants
19.02/4	19029	- other
19.03	19030	FERTILISERS AND SOIL IMPROVERS
19.03/1	19031	- fertilisers supplied by other agricultural holdings
19.03/2	19032	- fertilisers purchased from outside the agricultural 'industry'
19.04	19040	PLANT PROTECTION PRODUCTS AND PESTICIDES
19.05	19050	VETERINARY EXPENSES
19.06	19060	ANIMAL FEEDINGSTUFFS
19.06/1	19061	- feedingstuffs supplied by other agricultural holdings
19.06/2	19062	- feedingstuffs purchased from outside the agricultural 'industry'
19.06/3	19063	- feedingstuffs produced and consumed by the same holding
19.07	19070	MAINTENANCE OF MATERIALS
19.08	19080	MAINTENANCE OF BUILDINGS
19.09	19090	AGRICULTURAL SERVICES
19.10	19900	OTHER GOODS AND SERVICES
20	20000	GROSS VALUE ADDED AT BASIC PRICES (18-19)
21	21000	FIXED CAPITAL CONSUMPTION
21.1	21100	EQUIPMENT
21.2	21200	BUILDINGS
21.3	21300	PLANTATIONS
21.4	21900	OTHERS
22	22000	NET VALUE ADDED AT BASIC PRICES (20-21)

2. Generation of Income Account

Item	Code NewCRONOS	Description
23	23000	COMPENSATION OF EMPLOYEES
24	24000	OTHER TAXES ON PRODUCTION
25	25000	OTHER SUBSIDIES ON PRODUCTION
26	26000	FACTOR INCOME (22-24+25)
27	27000	OPERATING SURPLUS / MIXED INCOME (22-23-24+25)

3. Entrepreneurial Income Account

Item	Code NewCRONOS	Description
28	28000	RENTS AND OTHER REAL ESTATE RENTAL CHARGES TO BE PAID
29	29000	INTEREST PAID
30	30000	INTEREST RECEIVED
31	31000	ENTREPRENEURIAL INCOME (27-28-29+30)

4. Elements of the Capital Account

Item	Code NewCRONOS	Description
32	32000	GFCF IN AGRICULTURAL PRODUCTS
32.1	32100	GFCF IN PLANTATIONS
32.2	32200	GFCF IN ANIMALS
33	33000	GFCF IN NON-AGRICULTURAL PRODUCTS
33.1	33100	GFCF IN MATERIALS
33.1/1	33110	GFCF IN MACHINES AND OTHER EQUIPMENT
33.1/2	33120	GFCF IN TRANSPORT EQUIPMENT
33.2	33200	GFCF IN BUILDINGS
33.2/1	33210	GFCF IN FARM BUILDINGS (NON-RESIDENTIAL)
33.2/2	33220	GFCF IN OTHER WORKS EXCEPT LAND IMPROVEMENTS (OTHER BUILDINGS, STRUCTURES, ETC.)
33.3	33900	OTHER GFCF
33.3/1	33910	GFCF IN INTANGIBLE FIXED ASSETS (E.G. COMPUTER SOFTWARE)
33.3/2	33920	ADDITION TO THE VALUE OF NON-FINANCIAL NON- PRODUCED ASSETS
33.3/2/1	33921	<i>GFCF IN MAJOR LAND IMPROVEMENTS</i>
33.3/2/2	33922	<i>COSTS LINKED TO THE PURCHASE OF LAND AND PRODUCTION RIGHTS</i>
34	34000	GROSS FIXED CAPITAL FORMATION (EXCLUDING DEDUCTIBLE VAT) (32+33)
35	35000	NET FIXED CAPITAL FORMATION (EXCLUDING DEDUCTIBLE VAT) (34-21)
36	36000	CHANGES IN STOCKS
37	37000	CAPITAL TRANSFERS
37.1	37100	INVESTMENT GRANTS
37.2	37200	OTHER CAPITAL TRANSFERS

APPENDIX VI.

DATA TRANSMISSION TABLE FOR THE ECONOMIC ACCOUNTS FOR FORESTRY

The EAF data transmission table is based on a list of items (see tables below) for which Member States of the European Union are requested to supply data. According to the sequence of accounts, presented in Chapter I, the items of the data transmission table correspond to current transactions in the production account and the generation of income account. Additionally, there are certain items from the entrepreneurial income account and the capital account.

For each of the **output items** (Items 01 to 09, including sub-items), Member States are requested to transmit the **value at basic prices** as well as its components: the **value at producer prices**, **subsidies on products** and **taxes on products**.

For the **items of intermediate consumption** (Item 10, including sub-items), **values at purchaser prices** have to be transmitted. The data transmission table contains separate lines for additional data on **subsidies and taxes on products** for the individual items of intermediate consumption.

The data for the production account and for gross fixed capital formation have to be transmitted at both **current prices** and **constant prices** (cf. Chapter V). The values should be expressed in **millions of units of the national currency** (in the case of Spanish peseta and Italian lire: billions).

1. Production Account

Item	Code NewCRONOS	Description
01	51000	CONIFEROUS TIMBER FOR INDUSTRIAL USES
01.1	51100	CONIFEROUS LONG TIMBER
01.2	51200	CONIFEROUS STACKWOOD
01.3	51900	CONIFEROUS TIMBER FOR INDUSTRIAL USES: OTHER
02	52000	NON-CONIFEROUS TIMBER FOR INDUSTRIAL USES
02.1	52100	LONG TIMBER (NON-CONIFEROUS)
02.2	52200	STACKWOOD (NON-CONIFEROUS)
02.3	52900	NON-CONIFEROUS TIMBER FOR INDUSTRIAL USES: OTHER
03	53000	FIREWOOD (CONIFEROUS AND NON-CONIFEROUS)
04	54000	OTHER PRODUCTS
04.1	54100	CORK
04.2	54200	FORESTRY AND NURSERY PLANTS
04.3	54300	AFORESTATION AND CONVERSION
04.4	54900	OTHER FORESTRY PRODUCTS
05	14000	FORESTRY GOODS OUTPUT (01 TO 04)
06	15000	FORESTRY SERVICES OUTPUT
07	16000	FORESTRY OUTPUT (05+06)
08	17000	NON-FORESTRY SECONDARY ACTIVITIES (INSEPARABLE)
08.1	17100	PRODUCTS FROM THE TRANSFORMATION OF FORESTRY PRODUCTS
08.2	17900	OTHER NON-SEPARABLE SECONDARY ACTIVITIES (GOODS AND SERVICES)
09	18000	OUTPUT OF THE FORESTRY 'INDUSTRY' (07+08)

1. Production Account (cont.)

Item	Code NewCRONOS	Description
10	19000	TOTAL INTERMEDIATE CONSUMPTION
10.1	19010	PLANTS
10.2	19020	ENERGY; LUBRICANTS
10.2/1	19021	- electricity
10.2/2	19022	- gas
10.2/3	19023	- other fuels and propellants
10.2/4	19029	- other
10.3	19030	FERTILISERS AND SOIL IMPROVERS
10.4	19040	PLANT PROTECTION PRODUCTS AND PESTICIDES
10.5	19070	MAINTENANCE OF MATERIALS
10.6	19080	MAINTENANCE OF BUILDINGS
10.7	19090	FORESTRY SERVICES
10.8	19900	OTHER GOODS AND SERVICES
11	20000	GROSS VALUE ADDED AT BASIC PRICES (09-10)
12	21000	FIXED CAPITAL CONSUMPTION
12.1	21100	EQUIPMENT
12.2	21200	BUILDINGS
13	22000	NET VALUE ADDED AT BASIC PRICES (11-12)

2. Generation of Income Account

Item	Code NewCRONOS	Description
14	23000	COMPENSATION OF EMPLOYEES
15	24000	OTHER TAXES ON PRODUCTION
16	25000	OTHER SUBSIDIES ON PRODUCTION
17	26000	FACTOR INCOME (13-15+16)
18	27000	OPERATING SURPLUS / MIXED INCOME (13-14-15+16)

3. Entrepreneurial Income Account

Item	Code NewCRONOS	Description
19	28000	RENTS AND OTHER REAL ESTATE RENTAL CHARGES TO BE PAID
20	29000	INTEREST PAID
21	30000	INTEREST RECEIVED
22	31000	ENTREPRENEURIAL INCOME (18-19-20+21)

4. Elements of the Capital Account

Item	Code NewCRONOS	Description
23	32000	GFCF IN AFFORESTATION AND CONVERSION
24	33000	GFCF IN NON-FORESTRY PRODUCTS
24.1	33100	GFCF IN MATERIALS
24.1/1	33110	GFCF IN MACHINES AND OTHER EQUIPMENT
24.1/2	33120	GFCF IN TRANSPORT EQUIPMENT
24.2	33200	GFCF IN FORESTRY BUILDINGS (NON-RESIDENTIAL)
24.3	33900	OTHER GFCF
24.3/1	33910	GFCF IN INTANGIBLE FIXED ASSETS (E.G. COMPUTER SOFTWARE)
24.3/2	33920	ADDITION TO THE VALUE OF NON-FINANCIAL NON-PRODUCED ASSETS
24.3/2/1	33921	<i>GFCF IN MAJOR LAND IMPROVEMENTS</i>
24.3/2/2	33922	<i>COSTS LINKED TO THE PURCHASE OF LAND AND PRODUCTION RIGHTS</i>
25	34000	GROSS FIXED CAPITAL FORMATION (EXCLUDING DEDUCTIBLE VAT) (23+24)
26	35000	NET FIXED CAPITAL FORMATION (EXCLUDING DEDUCTIBLE VAT) (25-12)
27	36000	CHANGES IN STOCKS
28	37000	CAPITAL TRANSFERS
28.1	37100	INVESTMENT GRANTS
28.2	37200	OTHER CAPITAL TRANSFERS

APPENDIX VII.

PRINCIPAL CHANGES COMPARED WITH THE 1989 MANUAL ON THE EAA AND THE EAF

1. The principal changes made to the basic methodology of the Economic Accounts for Agriculture and Forestry published in 1989 ⁽⁹⁵⁾ relate to the following elements:

- the basic unit;
- output (measure, time of recording, valuation of seasonal output);
- intermediate consumption (content);
- distributive transactions (subsidies, taxes, compensation of employees, farm rents and interest): time of recording and content;
- gross fixed capital formation and consumption of fixed capital;
- miscellaneous.

2. The basic unit

2.01. As an operational approach, it is recommended that a specific unit, namely the local kind-of-activity unit, be used to describe the production process, the primary income deriving therefrom and the technical and economic relations between units. In contrast to the unit formerly used (the unit of homogeneous production), the chief characteristic of the local KAU is that it must be statistically observable in the principal components of the production process (output, intermediate consumption, compensation of employees, etc.). By grouping and classifying all these units according to their principal activity (at the four-digit level of the NACE Rev. 1), the economy is broken down into **branches of activity** or **industries**. The agricultural holding is the most appropriate local KAU for the agricultural industry.

2.02. The output of the agricultural industry is the result not only of agricultural activity but also of non-agricultural secondary activities which are linked to the principal activity but cannot be identified separately on the basis of the data available. Use of this new unit thus enables the accounts for agriculture to reflect the economic situation more closely by tracing all the productive activities of agricultural holdings and the income which these generate.

2.03. A distinction is made between two types of non-agricultural secondary activities: (1) activities which represent a continuation of agricultural activity and involve the use of agricultural products (the processing of agricultural products is the classic example here); (2) activities which use the holding and the available means of agricultural production (e.g. rural tourism, forestry and fishing).

3. Output

3.01. The concept of the national farm, which was used as the conventional measure of output, has been dropped. It has been replaced by a measure of output that whilst in the spirit of the ESA 95 rule is adapted to take into account the special character of the agricultural industry. In addition to total output sold by agricultural units, held in stock or accounted for by own final consumption, therefore, the output of the industry must include the output used as intermediate consumption within the same unit (intra-unit consumption) during the same accounting year, as long as this

⁽⁹⁵⁾ Eurostat Manual on Economic Accounts for Agriculture and Forestry, Theme 5, Series E, Luxembourg, 1989 (and Addendum, 1992)

output concerns two different basic activities (e.g. grain for feedingstuffs) and it meets certain criteria.

- 3.02. This adaptation of the ESA 95 rule meant that practical criteria had to be defined for choosing those products for which intra-unit consumption should be recorded in order to reconcile the objectives of comparability between Member States and feasibility. These criteria are based notably on the economic scale of the products subject to intra-unit consumption and the availability of data (prices and quantities). Consequently, only crop products used in animal feed (marketable or not) are to be recorded in the agricultural output of the industry.
- 3.03. Production, which is viewed as a continuous process, has to be recorded as work-in-progress. Nevertheless, as the EAA/EAF are based on the calendar year, only those products whose production process has not been completed at the end of the period have to be recorded as work-in-progress. In practice, this only concerns long-cycle products, i.e. livestock, crop products such as wine, agricultural contract work in plantations and standing timber.
- 3.04. Output, whether intended for sale or some other use, is valued at the basic price, which is defined as the price received by the producer after deduction of any taxes on the products but including any subsidies on products.
- 3.05. Valuation of seasonal output and changes in stocks has been adapted to the general principles of the ESA 95.

4. Intermediate consumption

- 4.01. The following components are included in intermediate consumption:
- trade in agricultural products between agricultural holdings (with the exception of livestock and standing timber as well as services linked to such trade);
 - certain agricultural products used as intermediate consumption items within the same unit (where they are recorded in the measurement of output);
 - expenditures for the use of intangible assets (i.e. production rights such as milk quotas).
- 4.02. Excluded from intermediate consumption are expenditures for the use of fixed assets acquired by financial leasing and imports of livestock (serving as stocks), the latter being deducted directly from sales.

5. Time of recording and content of distributive transactions

- 5.01. All distributive transactions are to be recorded on the basis of rights and obligations, i.e. when a claim or an account payable is created, converted or paid off.
- 5.02. The distinction between subsidy and capital transfer is applied more strictly for certain forms of support for agriculture and forestry.
- 5.03. The new method of output valuation means that a fundamental distinction has to be made between taxes/subsidies on products and other taxes/subsidies on production. Only other taxes/subsidies on production are recorded in the generation of income account.
- 5.04. Employers' imputed social security contributions must henceforth be recorded under compensation of employees.
- 5.05. Financial leasing payments for the use of fixed assets in agriculture are considered to be associated with a transaction financing an acquisition. The part of the rental representing loan costs, is recorded under interest paid. Certain interest items linked to agricultural/forestry activity and received by units which are incorporated as companies are recorded in the EAA/EAF.
- 5.06. Income from agricultural activity corresponds to entrepreneurial income of the agricultural industry as defined in the ESA 95.

6. Gross fixed capital formation and consumption of fixed capital

- 6.01. The scope of gross fixed capital formation has been expanded to include intangible assets (mainly agricultural computer software) and assets acquired by financial leasing (the assets of the tenant if he is the producer).
- 6.02. The recording of costs associated with the transfer of ownership has been specified in greater detail.
- 6.03. Gross fixed capital formation in plantations relates to expenditure on new plantations, to growth in the value of plantations until they reach maturity, and to the costs of ownership transfers linked to trade in plantations and mature trees between agricultural units. In the vast majority of cases, the value of clearing work (grubbing-up) may no longer be deducted from the value of investments in plantations. Gross fixed capital formation in plantations is subject to consumption of fixed capital.
- 6.04. Gross fixed capital formation in livestock relates to the natural growth of animals, to livestock purchases (imports) less sales (for slaughter and exports), and to the costs of ownership transfer linked to trade in these animals between units of the agricultural industry. Consumption of fixed capital is not calculated for gross fixed capital formation in livestock. Gross fixed capital formation in livestock is calculated by an indirect method based on the change in the number of animals valued at the average annual price, to which are added a culling discount (the difference between the selling prices of livestock as productive animals and as animals intended for slaughter), an item covering "other losses on productive animals" (i.e. the value of animals raised up to the end of their lives and exceptional losses) and costs linked to the transfer of ownership of productive animals between agricultural units.

7. Miscellaneous

An expansion of the sequence of accounts of the EAA and the EAF is being studied. This relates in particular to certain flows in the accumulation accounts (particularly in the capital account and the other changes in the volume of assets account).

APPENDIX VIII.

THE NOTION OF LOSSES IN AGRICULTURE

1. General principles of the national accounts

a) Definition

- 1.01. The SNA 93 distinguishes between two types of losses:
- **recurrent losses:** these are losses which occur continuously during the production process or which are caused by recurrent accidental damage (cf. SNA 93, 10.97.);
 - **exceptional losses:** these are linked to exceptional events, to catastrophes or natural disasters (acts of war, earthquakes, major droughts, cyclones, technological accidents, etc.) and may affect all categories of assets; these losses are located in time and space and are significant in value (cf. SNA 93, 12.35.-12.37. and 12.47.).
- 1.02. A third category of losses can be added to the two outlined above, namely unexpected accidental losses. More frequently encountered but smaller in value than exceptional losses (e.g. fire or flooding), they are generally covered by an insurance policy.

b) Treatment in the accounts

- 1.03.1. How these losses are dealt with in the accounts depends on the type of loss.

Recurrent losses

- 1.03.2. Recurrent losses have an effect on value added and primary income:
- loss at the production stage (prior to sale): the recurrent loss is recorded as a deduction from output (i.e. as a withdrawal from stocks);
 - loss of an intermediate consumption item (prior to use): the recurrent loss is recorded as an increase in intermediate consumption (i.e. as a withdrawal from stocks);
 - loss of fixed assets (capital goods): the recurrent loss is recorded either as an addition to intermediate consumption (if the loss can be covered by routine maintenance) or as consumption of fixed capital (if such a loss has to be covered by gross fixed capital formation and not by normal maintenance ⁽⁹⁶⁾).

Exceptional and unexpected accidental losses

- 1.03.3. According to the SNA 93, exceptional and unexpected accidental losses must be recorded in the accumulation accounts (more precisely, in the other changes in the volume of assets account). They have no effect whatsoever on value added. Their impact on output can be measured indirectly over a longer period than in the case of recurrent losses, as they often entail a decrease in the production capacity.

⁽⁹⁶⁾ These losses are not really recurrent as they are caused by accidental damage. They are treated as such, however, because they occur regularly throughout the service life of an asset. They are assimilated in national accounts to the amount of non-life insurance premium.

c) Classification of transfers aimed at compensating these losses

- 1.04.1. Transfers made in order to compensate these losses can be classified into three categories:
- insurance receipts;
 - other current transfers (subsidies);
 - capital transfers.
- 1.04.2. 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.
- 1.04.3. Transfers aimed at compensating recurrent losses are classified as current transfers (i.e. as subsidies) and are taken into account in the measure of net operating surplus.
- 1.04.4. Exceptional or unexpected accidental 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.

2. Classification and treatment of losses in agriculture

a) Definition

- 2.01. It can be difficult in practice to make a distinction between the different types of losses (recurrent, unexpected accidental and exceptional losses), and adaptation to the different sectors of the economy may be necessary. As far as agriculture is concerned, different types of losses can be identified. They are liable to affect agricultural output (finished goods or work-in-progress), intermediate consumption or assets used in the agricultural production process.
- 2.02.1. Losses in agriculture can be classified into seven major categories ⁽⁹⁷⁾:
1. losses of crop products due to bad weather (frost, drought, heavy rain);
 2. losses of crop products due to their perishable nature or diseases;
 3. losses of livestock due to epidemics or diseases;
 4. losses due to market conditions (withdrawal of fruit, vegetables, etc.)
 5. losses of intermediate consumption products (fertilisers, feedingstuffs, etc.);
 6. losses of assets due to “normal” accidents (such as fires, flooding, etc.);
 7. catastrophic losses.
- 2.02.2. The first five categories of losses can be regarded as recurrent losses (although the loss of animals through epidemics might be treated as an unexpected accidental loss). Losses falling under Category 6 constitute unexpected accidental losses, while all those in Category 7 must, of course, be recorded as catastrophic losses.

b) Treatment in the accounts of losses in agriculture

- 2.03. The recording of the different types of losses must be adapted to the agricultural accounts and linked with the method of measuring the output of the products affected. It appears to be very difficult to apply directly to agriculture the treatment proposed by the SNA 93 (which itself introduces a specific method of dealing with crops as work-in-progress, Section 6.99.). How losses

⁽⁹⁷⁾ P. Muller, 1995, “La notion de pertes en agriculture” (The concept of losses in agriculture), working document, Ministry of Agriculture, Paris.

in agriculture are recorded in the accounts thus essentially depends on the type of asset concerned.

Crop products

- 2.04. According to the SNA 93, all losses of crop products prior to harvest (i.e. losses of work-in-progress) have to be recorded as a deduction from output (of finished goods or work-in-progress), which leads to all crop output losses prior to harvest being treated as recurrent losses. This treatment corresponds to the method adopted in this manual for measuring the output of crop products, as most crop products are recorded at the time of harvest and not as work-in-progress (cf. 2.06.4.). Post-harvest losses (i.e. Categories 2 and 4) represent recurrent losses and are recorded as a deduction from output.

Animals and animal products

- 2.05.1. The SNA 93 makes no mention of the treatment to be applied to losses of livestock. All that is specified is that exceptional losses of animals caused by epidemics, contamination, drought, famine and other natural disasters must be recorded in the “other changes in the volume of assets” account (cf. SNA 93, 10.87). As a result, the treatment adopted for crop products is applicable only to animals in the production phase (i.e. animals recorded as work-in-progress).
- 2.05.2. In the recording of livestock losses, a distinction is made between two cases:
- When animals are considered to be **work-in-progress** (i.e. are intended for fattening or to be used for productive purposes but are still in their growth period), losses are recorded in a similar way to those of crop products. They are deducted from animal output, whatever the nature of the losses.
 - When animals are considered to be **productive animals**, these natural assets are not subject to consumption of fixed capital (cf. 2.62.5.), and any loss must be recorded in the “other changes in the volume of assets” account. They constitute a part of the value of the “other losses of productive animals” item in the calculation of gross fixed capital formation in livestock (cf. 2.62.10. and 2.62.11.). These losses of productive animals should have no impact whatsoever on the value of animal output.

Plantations

- 2.06. The treatment of plantation losses is similar to that applied for livestock, a distinction being 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 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 (accidental recurrent loss or more serious/exceptional accidental loss).

Intermediate consumption

- 2.07. 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 they represent recurrent losses. If the losses concerned are unexpected accidental or exceptional losses, they are entered under “other changes in the volume of assets”.

Fixed assets (capital goods)

- 2.08. The treatment of losses affecting these fixed assets must be similar to the treatment adopted in the other branches of the economy and must be in conformity with the SNA 93 (cf. 1.03.2. and 1.03.3.). A distinction is made between two types of assets:

- **produced assets (buildings, machinery, etc.):** normal accidental losses are recorded under consumption of fixed capital. 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.

c) Classification of transfers aimed at compensating these losses

2.09.1. Transfers intended to compensate losses in agriculture must be classified in a way that is consistent with the method adopted for recording these losses:

- transfers compensating for losses of crop products, animals and plantations (considered as work-in-progress, i.e. not having reached maturity, prior to their entry into the production phase) are recorded as a subsidy, whatever the type of losses;
- transfers compensating animal and plantation losses considered to be fixed assets (i.e. factors of production) are classified as capital transfers, as they only affect the change in the value of the assets (whatever the type of losses) and have no effect whatsoever on the measurement of output;
- transfers compensating unexpected accidental or exceptional losses of assets (other than livestock and plantations) used in agriculture are classified as capital transfers;
- 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.

2.09.2. Transfers aimed at compensating any other loss of non-agricultural assets must be recorded in accordance with the principles of the SNA 93 set out in Sections 1.04.2., 1.04.3. and 1.04.4.

APPENDIX IX.

TREATMENT OF VALUE-ADDED TAX (VAT)

1. The description in the ESA 95 (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 and forestry (VAT flat rate systems) which differ in form from one country to another.
2. The flat rate assessment systems used in the Member States of the European Union 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 (German system);
 - 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 ⁽⁹⁸⁾ applied to their sales in compensation for the VAT which they have paid on their purchases (French system).
3. **Definitions:**

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 ⁽⁹⁹⁾ 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;
 - (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).
4. The provisions of the ESA 95 lay down a single method of recording VAT. This is the “net” system, whereby output and input prices are recorded **exclusive** of deductible VAT.
5. 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

⁽⁹⁸⁾ The percentage rate may vary according to the type of product and channel of distribution.

⁽⁹⁹⁾ 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.

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 component of costs.

6. Operation of the net recording method

6.01. 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 EAF 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 and EAF.

6.02. For farmers subject to either of the two flat-rate systems, however, there are accounting problems (cf. 2). 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 gross fixed capital formation.

The difference between the flat-rate compensation granted to farmers who are subject to the flat-rate system 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 and EAF.

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

- over-compensation of VAT on purchases (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) is recorded under "Other subsidies on production";
- under-compensation of VAT on purchases (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) is recorded under "Other taxes on production".

6.04. This recording method offers the advantage of being conducive to uniform treatment of agricultural output, intermediate consumption and gross fixed capital formation, 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 economic accounts for agriculture of the Member States (cf. 3.17.1.).

APPENDIX X.

DISCREPANCIES BETWEEN EAA/EAF AND ESA 95

Topic	EAA/EAF	ESA 95
Industry (deviations from nomenclature)	<p>Activities integrated in EAA:</p> <ul style="list-style-type: none"> - production of wine or olive oil by grouping of producers, co-operatives, etc. (NACE 15.93, 15.41); - production of material for plaiting (NACE 02.01); - production of Christmas trees in nurseries (NACE 02.01); - production of fruit trees, vines and ornamental nursery trees (NACE-FR: 02.01); - in the CPA, hatching eggs are classified together with eggs in one subcategory (CPA 1996, 01.24.20). In the EAA, they are treated as the semi-finished output of poultry production. <p>Excluded agricultural activities from EAA:</p> <ul style="list-style-type: none"> - seed production for research or certification; - services related to the operation of irrigation systems, services of designing, planting and maintaining gardens, parks and green areas for sports facilities and the like, and services like tree pruning and hedge trimming (services not associated with agricultural contract work); - Kitchen gardens and private non-holder livestock rearing. <p>Excluded forestry activities from EAF:</p> <ul style="list-style-type: none"> - production of material for plaiting; - production of Christmas trees in nurseries; - production of fruit trees, vines and ornamental nursery trees (NACE-FR: 02.01). <p>All these are integrated in the EAA.</p>	<p>Agricultural branch according to the definition in NACE Rev.1 (Division 01).</p> <p>Note: there are some discrepancies between the NACE-Definitions in the individual languages:</p> <p>According to the German NACE-version only nurseries producing forest trees are included in forestry. The inclusion of nurseries producing fruit trees, vines and ornamental nursery trees in the agricultural branch is not a deviation from NACE.</p> <p>Forestry according to the definition in NACE Rev.1 (Division 02).</p>
Measurement of output	<p>Inclusive intra-unit consumption of certain products, as long as two different basic activities on a 4-digit NACE level are concerned.</p> <p>This is only a formal deviation, as in fact, it is an approximation to the spirit of the ESA 95-rules:</p> <p>According to the ESA 95 (1.29.) the LKAUs are to be recorded on the 4-digit class level of NACE Rev.1. For Agriculture this would imply 12 different basic activities with corresponding LKAUs. According to the EAA convention, a LKAU is equivalent to a farm, and a further breakdown according to the four-digit level of the NACE Rev.1 is not considered.</p>	<p>Goods or services produced and consumed within the same accounting period and within the same LKAU are not separately identified. They are therefore not recorded as part of the output or intermediate consumption of that LKAU (cf. ESA 95, 3.14.).</p>

Topic	EAA/EAF	ESA 95
Work in progress (time of recording production)	<p>Growing crops whose production cycle exceeds the end of a calendar year, but lasts in total less than one year, are not treated as work-in-progress.</p> <p>For standing timber no inventories of work-in-progress are recorded (because of practical reasons).</p>	<p>Growing crops and standing timber should be treated as inventories of work-in-progress during the process, and transformed into inventories of finished products when the process is completed.</p>
Imports of animals	<p>All animals imported by the agricultural industry are considered as stock change and are to be deducted from the value of sales.</p>	<p>Imports of productive animals are to be booked as an acquisition in capital formation, and imports of animals considered as stocks are to be recorded as stock entry of work in progress.</p>

APPENDIX XI.

RELATIONSHIPS BETWEEN EAA/EAF AND THE NATIONAL ACCOUNTS ("BRIDGE TABLE")

- 1.01. The results of the Economic Accounts for Agriculture and Forestry (EAA/EAF) are used in most Member States for the National Accounts (NA). They are calculated in general on the basis of macro-economic statistical data. Hence, the existence of some specific rules and treatments in EAA/EAF. In order to derive NA data from the EAA/EAF, some characteristics are to be taken into account.
- 1.02. The industry breakdown of agriculture and forestry in the EAA/EAF deviates slightly from the settings of NACE Rev.1. The following bridge table does not refer to the internal discrepancies in coverage. Deviations stated in the manual on the issue of nurseries can be ignored: horticultural nurseries (NewCRONOS code 04210) are correctly allocated in agriculture according to the German and English version of NACE Rev. 1. These NACE versions state clearly, that only forest tree nurseries are part of forestry; the EAA/EAF are thus perfectly in line with the ESA 95. So no adjustments in this respect are necessary. Adjustments have to be made, however, for the production of Christmas trees and the growing of vegetable materials used for plaiting, which have to be moved from agriculture to forestry according the NA.
- 1.03. The recording of intra-unit consumption of feedingstuffs as output and intermediate consumption in the EAA is due to the fact, that an agricultural holding is considered as just one local KAU even if it performs several different activities at the NACE 4-digit level. Since deliveries between local KAU, within an institutional unit are to be recorded as output and intermediate consumption (cf. ESA 95, 3.15.), the adopted EAA rule is an adaptation from the ESA 95 (even if the wording implies a deviation). No corrections are to be made in this respect for the derivation of the NA from the EAA.
- 1.04. The EAA excludes service activities other than contract work at the production stage, whereas they are to be included in the NA agricultural industry. The EAA includes these service activities only in the case of an inseparable secondary activity of an agricultural unit at the production stage. These inseparable activities are to be considered when compiling the NA, in order to avoid accounting them twice.
- 1.05. According to the ESA 95, the own-account production of agricultural products by households has to be included in the industry account (cf. ESA 95, 3.08. and 3.21.). However, agricultural units below the minimum threshold of the farm survey (production solely for own final consumption in kitchen garden and private livestock rearing) are excluded from the EAA, whereas agricultural products retained by farmers are generally included. Where the household production not covered in the EAA is significant (quantitatively important in relation to the total supply of that good in a country) the corresponding values are to be added to the EAA data in order to arrive at the NA values (cf. ESA 95, 3.08.).
- 1.06. NACE Rev.1 considers the production of wine and olive oil from self-produced grapes or olives as agricultural production. The EAA extends this rule to the production of wine or olive oil in agricultural producer groups or co-operatives. All items relating to units, that are part of another industry and whose value added is recorded as such in the NA, are therefore to be deducted from the EAA data in order to arrive at the data for the agricultural industry in NA and to avoid counting them twice.
- 1.07. Within the EAA/EAF agricultural and forestry activities are considered to be always separable activities by convention. This is mainly due to the nature of the statistical data sources. Nevertheless, it might happen, that within the industry accounts of the NA some institutional units are not able to separate all their agricultural or forestry activities, and record them as a inseparable activity in their proper industry account. This might introduce some double counting, which should

be avoided. In this context it should be reminded, that inseparable secondary activities of agricultural units recorded in the EAA or EAF should not be already part of other industry accounts.

Bridge Table: Derivation of Economic Accounts for Agriculture and Forestry in the National Accounts from EAA/EAF ⁽¹⁰⁰⁾

PRODUCTION ACCOUNT

NA	NewCRONOS Code	EAA/EAF
Output of the agricultural and forestry 'industries'	18000	Output of the agricultural industry
	18000	Output of the forestry industry
	NI	Agricultural services other than contract work at the production stage
	NI	Agricultural output of units below the minimum threshold of EAA (production solely for own consumption in kitchen garden and private livestock rearing)
	NI	Output of units engaged in seed production for research or certification
	(NI)	Minus: Must and wine output produced by groups of agricultural producers (e.g. co-operatives) (NACE 15.93)
	(NI)	Minus: Olive oil output produced by groups of agricultural producers (e.g. co-operatives) (NACE 15.41)
	(NI)	Minus: Output recorded as inseparable secondary activity of other industries in NA

⁽¹⁰⁰⁾ Note: Throughout the Bridge Table, parantheses "(...)" indicate that an item is to be subtracted, and "NI" indicates, that the item is not included in the EAA.

PRODUCTION ACCOUNT (cont.)

NA	NewCRONOS Code	EAA/EF
Intermediate consumption of the agricultural and forestry 'industries'	19000	Intermediate consumption of the agricultural industry
	19000	Intermediate consumption of the forestry industry
	NI	Intermediate consumption for agricultural services other than contract work at the production stage
	NI	Intermediate consumption of agricultural units below the minimum threshold of EAA
	NI	Intermediate consumption of units engaged in seed production for research or certification
	(NI)	Minus: Intermediate consumption for the production of wine or olive oil by groups of agricultural producers (NACE 15.93 and 15.41)
	(NI)	Minus: Intermediate consumption for output recorded as inseparable secondary activity on the account of other industries in NA

PRODUCTION ACCOUNT (cont.)

NA	NewCRONOS Code	EAA/EF
Capital consumption of the agricultural and forestry 'industries'	21000	Capital consumption of the agricultural industry
	21000	Capital consumption of the forestry industry
	NI	Capital consumption of assets used for agricultural services other than contract work at the production stage
	NI	Capital consumption of agricultural units below the minimum threshold of EAA
	NI	Capital consumption of units engaged in seed production for research or certification
	(NI)	Minus: Capital consumption of assets used by groups of agricultural producers for the production of wine or olive oil
	(NI)	Minus: Capital consumption of assets used for the production of output recorded as inseparable secondary activity on the account of other industries in NA

GENERATION OF INCOME ACCOUNT

NA	NewCRONOS Code	EAA/EAF
Compensation of employees of the agricultural and forestry 'industries'	23000	Compensation of employees of the agricultural industry
	23000	Compensation of employees of the forestry industry
	NI	Compensation of employees for agricultural services other than contract work at the production stage
	NI	Compensation of employees of units engaged in seed production for research or certification
	(NI)	Minus: Compensation of employees in groups of agricultural producers for the production of wine or olive oil
	(NI)	Minus: Compensation of employees for the production of output recorded as inseparable secondary activity on the account of other industries in NA

GENERATION OF INCOME ACCOUNT (cont.)

NA	NewCRONOS Code	EAA/EAF
Other taxes on production	24000	Other taxes on production of the agricultural industry
	24000	Other taxes on production of the forestry industry
	NI	Other taxes on production by units providing agricultural services other than contract work at the production stage
	NI	Other taxes on production by units engaged in seed production for research or certification
	(NI)	Minus: Other taxes on production by groups of agricultural producers for the production of wine or olive oil
	(NI)	Minus: Other taxes on production by non-agricultural units producing output in an inseparable secondary activity recorded on the account of other industries in NA

GENERATION OF INCOME ACCOUNT (cont.)

NA	NewCRONOS Code	EAA/EAF
Other subsidies on production	25000	Other subsidies on production of the agricultural industry
	25000	Other subsidies on production of the forestry industry
	NI	Other subsidies on production to units providing agricultural services other than contract work at the production stage
	NI	Other subsidies on production to units engaged in seed production for research or certification
	(NI)	Minus: Other subsidies on production to groups of agricultural producers for the production of wine or olive oil
	(NI)	Minus: Other subsidies on production to non-agricultural units producing output in an inseparable secondary activity recorded on the account of other industries in NA

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This publication contains the revised methodology on the Economic Accounts for Agriculture and Forestry (EAA/EAF) which is close to the methodology of the national accounts (ESA 95) but incorporates a number of changes to take account of the special features of the agricultural economy. Compared to the previous edition (Revision 1) of the EAA/EAF manual, the present version (EAA 97, Revision 1.1) includes new chapters on the valuation of the accounts at constant prices and on the unit values of agricultural products. The most recent of developments have also been taken into account; these concern the coverage of intra-unit consumption, the breakdown of intermediate consumption as well as the EAA/EAF questionnaire. Nevertheless, it should be noted that all these changes are of a technical nature and thus do not affect the basic methodology described in the previous (Revision 1) version.