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Paper 1 – EU Experience with Eurostat's revised methodology on Economic Accounts for Agriculture (EAA)

Marcel Ernens [*]
Eurostat, F-1, Luxembourg

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I. Introduction

The Economic Accounts for Agriculture (EAA), which are drawn up at European, national and regional level, are an essential analytical tool for assessing and analysing trends in income from factors in agriculture and their components. The EAA are drawn up by Eurostat from data forwarded by the 15 Member States.

The EAA are based on a methodology which is common to all Member States. It is closely linked to the national accounts (ESA 95) but has been adapted in a number of instances to take account of the particularities of the agricultural economy. Consequently, the EAA form a satellite account of national accounts. The methodology of the EAA was established by the Working Party on Economic Accounts for Agriculture of Eurostat's Agricultural Statistics Committee.

The EAA are the subject of various publications issued by Eurostat. The EAA data can be consulted in the NewCRONOS database.

The objective of this presentation is to provide an overview on Eurostat's work on the EAA. The emphasis is laid on the recently developed EAA methodology and its links with the National Accounts (Chapter 2). First results of the impact of the new EAA methodology are presented in Chapter 3. Data availability and the publication of data is subject of Chapter 4. Chapter 5 gives a short outline of Eurostat's intentions for future work.

II. EAA : Methodological background

1. Institutional framework

The Economic Accounts for Agriculture have been published by the Statistical Office of the European Communities since 1964. During the first few years, the concepts, definitions and accounting rules were not fully uniform and it was only in 1969 that the first six Member States based their calculations on the European System of Integrated Economic Accounts (ESA), starting with the year 1963. In 1969, the EAA were supplemented by the Economic Accounts for Forestry (EAF) which were based on the ESA right from the beginning.

The concepts, notions and accounting rules set out in the ESA only provide a general framework which is valid for the whole economy and therefore cannot cover all the specific questions of the individual areas. It was therefore necessary to broaden them to meet the special requirements of agriculture and forestry. This was done in 1969 for the first time, in two working documents of the Working Party on Economic Accounts for Agriculture of Eurostat's Agricultural Statistics Committee. The latter have been supplemented regularly over the past few years. In its sustained work, this working party has developed a methodology which is applicable to all Member States. Its aim has been to provide a coherent, practical and fully comprehensible tool, for drawing up and using the EAA and EAF. It was first published in 1989.

The EAA/EAF have no legal basis. Rather they are based on a gentlemen's agreement by which Member States have committed themselves to respect the concepts and rules

laid down in a common methodology. EUROSTAT and the Member States meet twice a year in the Working Party 'Economic Accounts for Agriculture'.

2. Development of a common methodology

The EAA are satellite accounts to the National Accounts. This means that in principle all basic concepts and classifications of the standard framework, the European System of National and Regional Accounts (ESA) are retained.

However, 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 particular requirements of agriculture (and forestry). The first manual providing a coherent, practical and readily-comprehensible tool for the compilation and use of the EAA and the EAF was published in 1989 ([1]).

The subsequent revisions of the United Nation's System of National Accounts in 1993 (SNA 93) and the European System of Accounts in 1995 (ESA 95) have led to considerable changes in the EAA methodology. Consequently, in 1997 a revised version of the EAA manual (rev. 1, sometimes referred to as EAA 97) was adopted by the Working Party and published ([2]).

The implementation of the new EAA methodology should be concluded in all Member States before September 2000 at the latest.

3. Relationship between the revised EAA and ESA 95

As outlined above, the EAA are satellite accounts to the ESA. The revision of the EAA methodology had thus to satisfy two, often conflicting, demands : on the one hand, methodological consistency with the ESA to allow harmonisation of the EAA both between Member States and with the central framework of the national accounts ; on the other hand, it had to ensure that the changes to be made were feasible. Additionally, certain specific amendments to the general rules had to be made in order to adapt the methodological framework of the satellite accounts to specific characteristics in the field of agriculture.

However, the number of deviations between the new EAA and ESA 95 is limited, and they are well documented in the new manual. Furthermore Member States have committed themselves to draw up « bridge tables » showing the link between the satellite accounts and the standard framework of the National Accounts. In this way, the standard framework retains its role as a framework of reference and at the same time justice is done to more specific needs.

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

2 Statistical Office of the European Communities, Manual on the Economic Accounts for Agriculture and Forestry (rev. 1), Theme 5, Series E, Luxembourg 1997.

III. Impact of the new EAA methodology

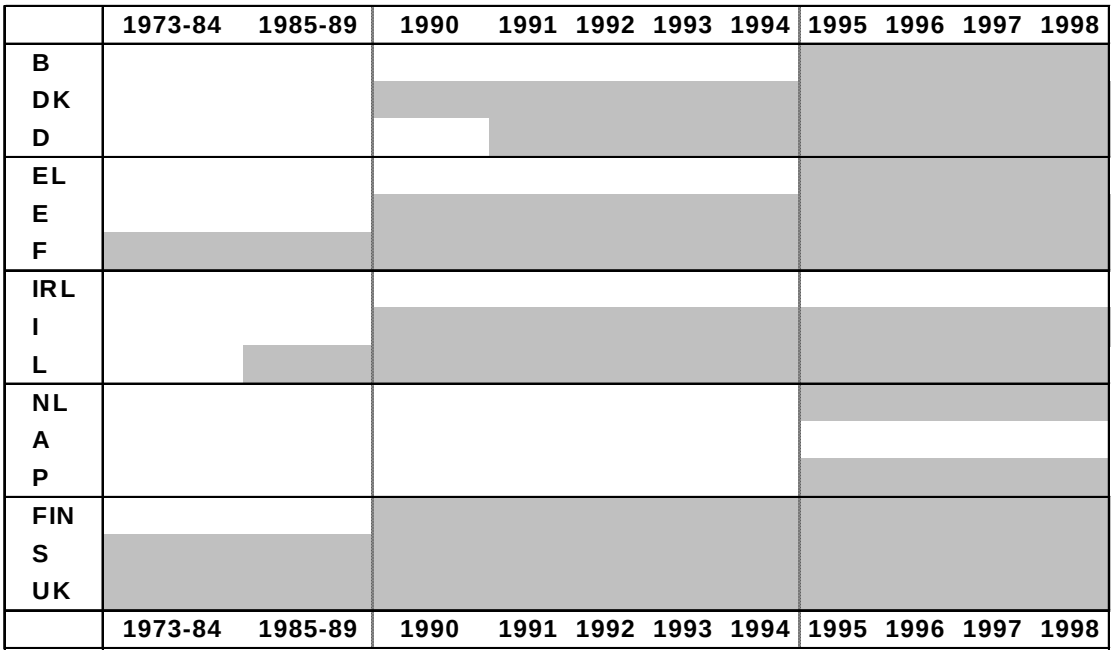
1. Main changes in the EAA methodology

Implementing the new EAA methodology involved numerous changes in the accounting data due both to the revision of the methodology and to the revision of all the evaluations. Some of these revisions have had a direct impact on the measurement of the agricultural income whilst others have changed only the level of certain aggregates without influencing the measure of income.

Four principal changes can be distinguished:
(1) the changes in the scope of the EAA;
(2) the changes in the valuation and time of recording;
(3) the reclassification of certain grants for agriculture and taxes.
(4) the changes in the valuation of certain items (animal output and GFCF, fixed capital consumption, etc.).

First, however , the present chapter gives a brief overview of the situation concerning the transmission of new data from Member States to Eurostat. At the time of drafting the present document the data for Ireland and Austria were still outstanding (see table 1 below). Additionally, the data provided by some Member States are incomplete or subject to revisions.

Table 1 - Availability of EAA data at current prices



The new EAA data

For the year 1995, values of the main EAA aggregates have been revised upward (table 2). Output (valued at producer prices) and intermediate consumption have been the most revised; this is the direct consequence of the dropping of the national farm concept. The level of net value added at factor costs has been revised by +7 %.

Table 2 - Revision of the main EAA aggregates, for the 13 Member States as a whole, in 1995

	Old EAA	New EAA	Difference	Difference (in %)
Output (at producer prices)	200 802	233 356	+32 554	16%
Intermediate consumption(IC)	94 439	118 517	+24 078	25%
Subsidies	30 786	31 733	+948	3%
Taxes	3 220	3 399	+179	6%
Consumption of fixed capital (CFC)	30 243	32 525	+2 282	8%
Net value added at factor costs (NVAfc)	103 685	110 649	+6 964	7%

For each of the principal changes, the structure of the analysis is the following :

- Each of these items starts with a short overview of the methodological changes eventually followed by an assessment of what the impact in practice of these methodological changes is expected to be.

- First results based on an analysis of the new EAA Data transmitted by Member States to Eurostat. Although one has to be aware that in many cases, while switching from the old to the new methodology, not only methodological changes have taken place but also changes in data sources and calculation procedures.

(1) The changes in the scope of the EAA

The local kind of activity unit

a. Although the agricultural "industry" was formerly defined as a grouping of units of homogeneous agricultural production, the local kind of activity unit (LKAU) was chosen as the basic unit of description for the new EAA. Consequently, the output of the agricultural "industry" is the result not only of agricultural activity but also of inseparable non agricultural secondary activity. These secondary activities concern mainly the processing of agricultural products and some services as rural tourism.

b. First results indicate that inseparable non-agricultural secondary activities as a whole contribute between 0.4 % and 3. 4 % to the overall output of the agricultural industry in the Member States. Nine Member States have so far transmitted data for both processing and other activities. In four countries (B, EL,F, I), processing activities were more important than the other activities.

The exclusion of units which produce solely for own consumption

a. According to the new EAA methodology, units which produce solely for own consumption are no longer taken into account in the EAA. In particular, this may have some impacts on the vegetables, fruits, potatoes, eggs,... output.

b. Even in those cases where downward revisions have been made, it cannot be said with certainty that they are due to the exclusion of kitchen gardens. However,

Eurostat observed a number of cases where either (apparently) no revisions have been made at all, or where these revisions have led to rather unexpected results. Further investigations by Eurostat and Member States are needed.

The dropping of the national farm concept

a. The concept of the national farm, which was used as the conventional measure of output, has been dropped. According to the new EAA methodology, the measure of output takes into account:
   - the output sold by agricultural units, held in stock or accounted for by own final consumption
   - the output used as intermediate consumption within the same unit (intra-consumption) as long as this output concerns two different basic activities

   This will have consequences on the measure of several outputs and inputs as cereal, seeds, forage plants, etc.

   A first analysis has focussed on annual feed products and agricultural services.

b. Several Member States were not able to split forage plants output (fodder maize , fodder root crops, others), or values for agricultural services from intermediate consumption were higher than those of the output.

The inclusion of the production of wine and olive oil (exclusively using grapes and olives grown by the same holding)

a. All wine and olive oil output was recorded in the old EAA. According to the new EAA methodology, only the production of wine and olive oil (exclusively using grapes and olives grown by the same holding) is taken into account. This may have some impacts on the values of wine and olive oil output.

b. In most of the countries which transmitted data on wine and olive oil, noticeable upward revisions were observed. Further investigations are ongoing on the reason why such high upward revisions were transmitted.

The exclusion of the activities relating to the production of seeds upstream and downstream of multiplication

a. According to the new EAA methodology, the production of seeds only concerns the production of multiplied seeds. Previously, all the seeds production was taken into account. This should have some impact on the measure of seeds output. However, it should be noted that the measure of intermediate consumption in seeds should not be affected by this change.

b. The impact of the new concept of EAA-seed production was not measured and analysed as such. As stipulated by the EAA manual (para 1.34.4), agricultural seeds for cereals (including rice), oilseeds, protein crops and potatoes, are entered respectively under the individual cereal and oilseeds varieties, protein crops and potatoes.

(2) Valuation and time of recording

Valuation of output at basic price

a. Output 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. As a result, value added is valued at basic price too. This has no consequences on the measure of the other balance items.

b. The revisions made by the Member States for the items "subsidies" and "taxes" differed considerably in terms of direction and in magnitude. It was difficult for Eurostat to judge on the content of the first data, and only the inventory of methodologies used to implement the EAA will allow to judge if these grants or taxes are actually subsidies or taxes on products.

The time of recording

a. According to the new EAA methodology, all distributive transactions are recorded on the basis of rights and obligations, i.e. when a claim or an account payable is created, converted or paid off (accrual basis). This will have consequences on the valuation of subsidies and taxes.

b. The implementation of this new rule raised a particular question of consequences on the valuation of milk superlevies. Indeed , milk campaign n/n+ 1 extends from April to March n+1 and the value of superlevies relating to this campaign is only known during the year n+1. It was not always clear if the value of this penalty is allocated to the calendar year n or n+1 or between these two years.

(3) Reclassification of grants for agriculture and taxes

The grants for agriculture

a. The grants for agriculture that were classified under "subsidies" according to the old methodology are now distinguished between:
   - subsidies on products
   - subsidies on production
   - capital transfers

   Capital transfers are recorded in the capital account and do not take part in the measure of income, whereas the first two are recorded respectively in the production account and in the generation of the income account. These two take part in the calculation of the income indicators.

Taxes

A distinction is now made between taxes on products and other taxes on production. In the old EAA, some taxes paid by the agricultural "industry" concerned products of the agri-food industries. It is the case of taxes on sugar and alcohol used for wine making. According to the new methodology, these taxes

constitute taxes on products of the agri-food industries and are no longer recorded in the generation of income account of the agricultural industry. However, these taxes should be added to the value of intermediate consumption of the agricultural "industry". As a result, this has no consequence on the measure of income.

b. Eurostat thinks that the content of these items will have to be analysed deeply in order to be sure that the same grant is classified under the same item in each Member State.

(4) Changes in the valuation of certain items

Intermediate consumption

a. Imports of livestock (serving as stocks) are now excluded from intermediate consumption. This value has to be deducted directly from sales. This won't have any impact on the measure of the income indicators.

b. Almost all Member States provided data for all the aggregates of intermediate consumption. However, the availability of detailed data varies between Member States. It seems that "purchases to other agricultural holdings" are difficult to isolate within the item concerned. The item "intermediate consumption" has been strongly revised upwards in nearly all Member States partially due to the dropping of the national farm concept and the inclusion of intra-unit consumption.

GFCF and CCF

a. 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).

   Gross fixed capital formation in plantations relates to expenditure on new plantations, to increase in the intrinsic 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. Plantations are subject to consumption of fixed capital.

   The calculation of gross fixed capital formation in livestock has changed. This item can be calculated by an direct method or an indirect method (in that case, the culling discount has to be taken into account).

b. From the above, it follows that, all other things being equal, the inclusion of the culling discount (or the use of a calculation method leading to equivalent results) and of the costs associated with the transfer of ownership (but the latter are <u>not</u> an element of own-account provided fixed capital goods and thus not of output) in the calculation of GFCF for animals should lead, when compared with data under the old methodology, to an increase in the GFCF for animals. The expected increase was not observed in all Member States. Further investigations are to be done to find out why there was no change or even downward revisions.

Only a few Member States have provided sofar a separate CFC value for plantations. Most provided only an aggregate figure for CFC.

Conclusion

The first analysis of the new EAA data confirmed the need for carrying out the EAA inventory exercise (see future plans under chapter V). Various Member States replies refer to the fact that certain value changes are due to the fact that errors committed under the old methodology are now corrected under the new methodology. The inventory exercise, accompanied by a detailed country-by-country analysis of the data should help to keep similar "errors" under the new methodology to an absolute minimum.

IV. EAA : data and publications

EAA data are annual and refer to the national level. But there are also Regional Accounts for Agriculture (RAA) the methodology of which is part of the EAA manual (rev. 1). On the basis of the EAA, agricultural income indicators are calculated, the most important of which is real (i.e. deflated) net value added at factor costs per annual work unit (annual work unit being a standardised measure for labour input). End of 1999, these income indicators were, for the first time, based on the new EAA methodology.

In principle, the first annual EAA publication under the new methodology was due for beginning 2000. However, Eurostat decided to delay this publication, in principle for three reasons: (1) as so far not all 15 Member States had provided data, the calculation of EU-15 data was still impossible, (2) economic analysis based on long time series was not possible because half of the Member States hadn't provided sofar pre-1995 data to Eurostat, and (3) the first data analysis showed that some changes in the new data need confirmation and/or explanations as to their exact origin before publication of the data concerned.

In general, EAA data are published by EUROSTAT in two ways: once a year on CD-ROM, and continuously in the public database NewCRONOS. First estimates of the agricultural income indicators for the current year are published at the end of each year, and revised second estimates 2-3 months later in the following year. Specific ad-hoc requests for data are answered either by the Eurostat datashop network or by Eurostat F-1. Taking into account the current situation regarding the data transmission of Member States to Eurostat, it is hoped that Eurostat will be able to publish EAA data according to the new methodologies for all 15 Member States in Autumn 2000.

What is agricultural income ?

Measuring agricultural income and its changes is one of the main purposes of the EAA.

1. Definition of agricultural income

The sequence of the accounts of the agricultural activity branch allows three accounting balances to be calculated which can be used as an income aggregate for the agricultural branch: net value added, net operating surplus (net mixed income) and net entrepreneurial income. It

It should be noted that income aggregates obtained as accounting balances from the sequence of the branch of activity accounts are not indicators of the total income or disposable income of households employed in agriculture because, apart from their purely agricultural income, these households can also have income from other sources (non-agricultural activities, remuneration, social benefits, property income).

The income of the agricultural activity branch should not be regarded as the income of farmers.

This measure of income also corresponds to the income generated by agricultural activities (and secondary non-agricultural activities) over a given accounting period, even if the corresponding receipts will in some cases only be received later. It is therefore not a case of income actually received during the accounting period.

It should be noted that Eurostat has drawn up a methodology for measuring the income of the agricultural household sector. These data are published every year and can be consulted in Eurostat's NewCRONOS database.

2. The three income indicators

The agricultural branch's three income indicators are defined as follows:

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

This measure corresponds to the real net value added at factor cost of agriculture per annual work unit.

Indicator B: The index of real net entrepreneurial income in agriculture per unpaid annual work unit.

This indicator presents changes over time in net entrepreneurial income per unpaid annual work unit. When converted into an index for each Member State it provides information on changes rather than on income levels. It is more useful in countries where agriculture is organised in the form of individual enterprises. On the other hand, in view of the existence of "traditional" companies, which show entrepreneurial income whilst having only paid labour, Indicator B is overestimated in relation to a notion of individual income. This disadvantage may prevent comparison of income levels between Member States if the importance of the "traditional" companies differs substantially from country to country.

Indicator C: Net entrepreneurial income in agriculture

This income aggregate is presented in absolute values (or in the form of an index in real terms). It allows comparability over a time of income in the agricultural branch between Member States.

V. Future developments

1. Revision 1.1 of the manual

At the time of drafting the present document, the EAA manual (rev. 1) has been published in three languages: German, English and French, translations in the remaining eight official languages of the EU have been made. Furthermore, the new manual is being translated (in some cases, translation was already concluded) into 13 languages covering the Candidate countries' languages. The eleven official language versions of the new manual will however be (re)published under the title of 'Manual on Economic Accounts for Agriculture and Forestry EAA/EAF 97 (rev. 1.1)'. The reason for making this new edition are several amendments to the rev. 1 version. These amendments, taking into account the most recent decisions of the Working Party EAA, will not change methodological aspects of the EAA 97. They rather concern the redrafting of the chapter on the valuation of EAA at constant prices, the addition of a chapter on unit values of agricultural products, changes in the coverage of the intra-unit consumption of animal feedingstuffs and in the breakdown of intermediate consumption, as well as a number of corrections on a linguistic level.

2. EAA inventory

A questionnaire for establishing an inventory of the EAA has been established. This inventory will give, for each Member State, information on the data sources, methods and techniques involved in the compilation of the EAA. Together with an in-depth analysis of the data transmitted, this inventory inter alia will allow EUROSTAT to assess the reliability and comparability of the data. The EAA inventory project was launched in end February 2000 (deadline for completing being September 2000).

3. Further investigation on EAF

Wherever possible EAA and EAF are treated in the new manual in parallel. However, as many of the changes which are dealt with in detail concern mainly or even exclusively the EAA, this makes reading for EAF users (or even producers) sometimes difficult. Furthermore several methodological issues seem not to be treated in a sufficiently detailed way. This is why EUROSTAT is going to set up a Task Force 'Economic Accounts for Forestry'. Its task would be to elucidate any open methodological matters and possibly the compilation of a separate manual for the EAF.

4. Enlargement

EAA forms part of the multi-country statistical cooperation project, which is currently being implemented. The project's overal objective is to support the Candidate

Countries in preparing and harmonising agriculture monetary statistics in accordance with EU requirements.

5. Units which produce solely for own consumption

The aim of the EAA is to measure, describe and analyse the formation of income from agricultural economic activity. For this reason, units which produce solely for own consumption, often referred to as “kitchen gardens”, are excluded from the EAA. Recently, the question arose if units engaged in subsistence farming fall under the same rule and were to be excluded from the EAA, knowing that in a number of non-EU countries, subsistence farming is quite important. Therefore, Eurostat proposed to reopen the discussion on the wording of the Paragraph 1.16 of the EAA manual(rev. 1.1).

6. Further analysis of the new EAA data

Until now not all the Member States have replied to Eurostat’s questionnaires (country reports), or only partial replies have been provided. After transmission of all requested data, Eurostat would like to assess the overall quality of the data provided. Special attention will be given to country check, constant prices, unit values, short- and long-term trend analysis in EAA data as well as to links in the Member States between the EAA and the National Accounts(“Bridge Tables”)

ANNEX: The new EAA valuations[1]

Table 1 : Revision of the main EAA aggregates, in 1995

	old EAA	new EAA	Difference (2)-(1)	Difference (in %)
Output of the agricultural industry at producer price	200 802	233 356	32 554	16%
Intermediate consumption	94 439	118 517	24 078	25%
Subsidies	30 786	31 733	948	3%
Taxes	3 220	3 399	179	6%
Consumption of fixed capital	30 243	32 525	2 282	8%
Net value added at factor costs	103 685	110 649	6 964	7%

Table 2 : Structure of the output of the agricultural industry, in 1995

	new EAA	%
Output of the agricultural industry at producer price	233 356	100%
Agricultural goods output	222 923	96%
Agricultural services output	6 889	3%
Secondary activities output	3 545	2%

Table 3 : The EAA sequence of account, in 1995

Production account

	old EAA (1)
Final agricultural output	200 802
- Intermediate consumption	94 439
- Depreciation	30 243
= Net value added at market prices	**76 120**

	new EAA (2)
Output of the agricultural "industry"	255 064
- Intermediate consumption	118 517
- Fixed capital consumption	32 525
= Net value added at basic price	**104 022**

(2)-(1)	(2)/(1) (%)
+54 261	+27.0
+24 078	+25.5
+2 282	+7.5
+27 902	**+36.7**

Generation of income account

	old EAA (1)
Resources :	
Net value added at market prices	76 120
Subsidies	30 786
Total	106 906
Uses :	
Taxes linked to production	3 220
Compensation of employees	22 854
Total	26 074
Net operating surplus	**80 831**

	new EAA (2)
Resources :	
Net value added at basic price	104 022
Other subsidies on production	9 433
Total	113 456
Uses :	
Other taxes on production	2 806
Compensation of employees	22 557
Total	25 364
Net operating surplus	**88 092**

(2)-(1)	(2)/(1) (%)
+27 902	+36.7
-21 352	-69.4
+6 550	+6.1
-414	-12.9
-297	-1.3
-711	-2.7
+7 261	**+9.0**

Entrepreneurial income account

	old EAA (1)
Resources :	
Net operating surplus	80 831
Total	80 831
Uses :	
Rents	5 092
Interest paid	11 892
Total	16 984
Net income from agr. activity of family labour	**63 847**

	new EAA (2)
Resources :	
Net operating surplus	88 092
Interest received	332
Total	88 424
Uses :	
Rents	5 022
Interest paid	11 549
Total	16 570
Entrepreneurial income	**71 854**

(2)-(1)	(2)/(1) (%)
+7 261	+9.0
+7 593	+9.4
-70	-1.4
-344	-2.9
-414	-2.4
+8 007	**+12.5**