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# REVISION OF THE 1987 DUTCH AGRICULTURAL ACCOUNTS

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## Abstract

During the recent revision of the Dutch National accounts, the agricultural data have been revised. To this end new Agricultural accounts have been compiled for the Netherlands. This has vastly improved the quality of the Agricultural accounts. In addition, the results can now be analysed from the standpoints of two differing conceptual approaches.

**Contents**

## 1. Introduction

This paper contains explanatory notes on the 'Dutch Agricultural accounts' (DAA). These were revised at the same time as the 'Dutch National accounts' (NA) were revised as regards methods and results. The base year for this revision was 1987. Since the DAA form a subsection of the overall NA, the reader is referred to 'National Accounts Occasional Paper nr.58' for extensive notes on the revision and also for definitions.

The following section gives a short account, specific to the DAA, of the background to and reasons for the changes. This is followed by a list of specific revision projects concerning agriculture. Then comes a description of the relationship between the DAA and the functional agricultural accounts derived from them which are compiled for the 'Statistical Office of the European Communities' (Eurostat).

Lastly, there is a summary of the effects of the revision on the major variables. In this paper the analysis of the differences due to the revision relates to the base year 1987. Both the original and the revised figures are given for this year in Tables 1-5. The tables are fully compatible with the NA as regards breakdowns and definitions. There are more tables than in previous DAA-publications. In addition, the contents of various tables have been changed. Among other changes, in order to be concise yet comprehensive, the list of output values (Table 2) is somewhat restricted, whereas that for intermediate consumption has been expanded (Table 3).

## 2. A background to the revision

As a result of the revision of the NA the DAA have undergone radical changes. Since at the time of the previous revision, for which the base year was 1977, little attention could be paid to agriculture, a critical reappraisal of sources and methods for the agricultural estimates had to be made.

Periodical revisions are necessary so that, given the requirements for a description of the economic process, new statistics, methods, insights etc. can be incorporated. In addition, a more intensive use of existing sources can lead to new insights. This has a bearing on the problem that a relevant description cannot simultaneously fulfil two conditions: it must be up to date and it must be continuous. To meet the up-to-dateness condition, the estimate of the levels of the figures is fundamental. The aim is to describe as accurately as possible the economic process which has taken place over one period.

In economic analysis, continuity, i.e. a reliable estimate of significant changes in relevant variables from one period to another, is also essential. However, for this the levels of the variables must be comparable in time. As we have said above, in practice these two conditions conflict.

For the annual publication we have opted for a methodology which determines the levels on the basis of an estimate of the changes which is as accurate as possible. These are comparable with those for the base year which was selected at the time of the revision.

A revision makes it possible to adjust the figures for this new base year by using the new statistical data, estimating methods etc. referred to above.

The estimates of DAA are based on a wide variety of sources. The quality of existing sources was reviewed and the data from these sources were supplemented with new data where necessary. In this way, in parallel with the NA, the review of the results has produced better-quality estimates in the DAA, particularly as regards the levels of the variables.

An important aspect of this revision of the NA is the endeavour to use a more "institutional" approach in describing the economic process, so that in general it corresponds more closely to the actual transactions

among economic actors. This means that, to a greater extent than in the past, the data relate in general to establishments which are classified by main activity. This also implies a certain heterogeneity in the description of the production process, since this refers to both the principal activity and also any secondary activities which have a different cost structure from the main activity.

As opposed to the above, 'functional' statistics describe a specific activity, such as production or imports and exports, as a whole, not distinguishing between (groups of) economic actors. When the production process for a given activity is described functionally the same statistics relate to all the establishments involved in those transactions, without taking account of their secondary activities or even of the main activity if this comes under another group in the 'Standard industrial classification 1974' (SBI).

The significance of the institutional approach as regards the breakdown by economic activity is particularly apparent in the recording of trade (SBI 61-66) in the NA, which was described functionally before the revision. Following the revision, the production of trade margins and the related inputs are recorded for a large number of SBI-groups in addition to trade itself, namely where these margins are produced as a secondary activity. Apart from that, it is assumed that in agriculture the size of trade as a secondary activity is negligible.

Like trade, agriculture was previously also described functionally. However, in the absence of institutional sources for establishments with agriculture as their principal activity, the approach following the revision is still for the most part functional. Agriculture is deemed to comprise all units which, whether exclusively or in combination with other economic activities, generate agricultural products.

The information is obtained from detailed functional statistics on physical agricultural production, supplemented with estimates of physical intermediate consumption. Nevertheless, by using the establishment as a basis in describing transactions in the NA system, institutional elements are added to the DAA. Besides secondary activities, estimates of intermediate deliveries from agricultural establishments are also recorded.

## 3. Revision plans

This section gives a qualitative description of the revision concerning agricultural production processes. These are discussed in relation to the various reasons for changes in the figures.

### 3.1 Revised classification in SBI 01

Following the revision the classifications used in describing the groups in SBI 01 (agriculture and horticulture) have changed. The new structure provides a better description of the activities in this class, which are broken down into five groups of industries, viz. arable farming and livestock raising (SBI 011), horticulture (SBI 012), public parks and gardens, landscape gardening (SBI 013), agricultural services (SBI 014) and hunting (SBI 015).

Before the revision the figures gave a (functional) description of the production process in SBI 011 and 012 (Gorter, C.N. and others, 1990). Because there were no appropriate sources, no account was taken of the SBI 013, 014 and 015 activities. Besides, there was the difficulty that transactions between agriculture and agricultural services were also omitted. The data from the 'Production statistics for agricultural services' (PS 014) were available and used for the first time for the report year 1987. Establishments whose principal activity was agricultural services were classified and described as such. Agricultural services were deemed to be activities which had specific reference to (a part of) the production process in agriculture and horticulture. In many cases these are activities which the farmer can also carry out himself, such as ploughing, mowing, threshing, sheep-shearing and fruit-picking.

Artificial insemination units and coperatives are also included in SBI 014. In addition to agricultural work under contract, SBI 014 also includes other economic activities, such as contract work in the construction industry (e.g. earth moving).

The introduction of PS 014 may be regarded as supplementing the above-mentioned moves towards an institutional approach in agriculture.

The description of the production process in SBI 014 affects the input structure of agriculture. Some of the intermediate consumption which was

recorded in SBI 011 and 012 before the revision are now recorded under SBI 014, such as intermediate consumption of fertilizers and soil improvers, plant protection products, seeds and seedlings, and also compensation of employees. 'Agricultural services' is accordingly included as a new heading as a subsection of agricultural intermediate consumption. The description of SBI 013 is also based on recently introduced production statistics, but has only a slight effect on agriculture. By analogy with SBI 014, some of the intermediate consumption of fertilizers and plant protection products is recorded under SBI 013.

Following the revision, SBI 015 is still not recorded. The economic significance is in all probability very minor and therefore there are no sources from which estimates can be made.

### 3.2 Use of an entirely new source or method

#### 3.2.1 Revision of the method for valuing seasonal products

One of the most striking revisions for agriculture concerns the valuation of output, sales and changes in inventories of seasonal products with strongly fluctuating sales prices. The method has been changed for potatoes, apples and pears, and may be briefly described as follows.

In the NA, just as before the revision, the estimation of the value of output (market value at producers' prices) of establishments takes place on the basis of the following identity:

Output = Sales + Changes in inventories

Transactions in goods and services are generally valued at current prices. This means that goods involved in changes in inventories are valued at prices current at the time of the addition to or withdrawal from inventories (valuation of inventories on the basis of replacement cost; UN, 1968, 6.109 and 6.112). The output value can then be calculated by correcting the sales value with the value of the change in inventories as a balance of an, in principle, infinite number of inventory changes. NA practice calculates this (as an approximation) by valuing the initial

and final inventories of every good at the same price, i.e. the weighted average sales price for the report period concerned (UN, 1968, 6.113). As the NA refer to calendar years, this means that the valuation of sales and changes in inventories (and therefore output) must take place at weighted average calendar year prices. Under normal circumstances, when output and sales are so close to each other that there is little inventory-piling, in most cases this valuation method gives a good approximation of the market value of the products. In such cases the report period can be chosen randomly (Van Stokrom, 1988, pp. 5-7).

Arable products are generally harvested in the second half of the calendar year, while the sales of these harvest is continued into the first half of the following year. In the NA and DAA the report period is the calendar year. This means that the change in inventories equals the harvest for the calendar year, less the sales for the first half year plus the sales for the second half year, which relate to the previous harvest and the harvest in the report period respectively.

Complications can arise when the average sales prices for consecutive harvests fluctuate strongly. In this case it is questionable whether the above valuation rule should be applied directly (Van Stokrom, 1988, pp. 7-12). This could give an unrealistic output value. The weighting scheme for calculating the harvest price includes prices for the first half of the year, which relate to sales from the previous harvest.

To avoid this problem, following the revision a method has been adopted whereby the harvest, and therefore also the change in inventories of the products concerned, are valued at average sales prices not for the report year, but for the harvesting period.

Both goods added to inventories, which are equivalent to the harvested quantities, and goods withdrawn from inventories, which are equivalent to the volume sold, are then valued at current sales prices. Applying the valuation method in this way gives a more accurate output value and also corresponds more closely to the international provisions (in the 'System of National Accounts'). Nevertheless, applying this method offers some considerable disadvantages. Firstly, it is more difficult to interpret the value of changes in inventories, which form the balance of additions and withdrawals. Within the year they are now valued at different prices. When sales prices of seasonal products fluctuate strongly it is possible that in the report period the change in volume can be the opposite of the

change in value.

Secondly, the problem of so called 'holding gains' may arise. These are caused where there is a difference between the (average) sales prices and the (average) prices of the harvest (output) period with regard to a particular harvest, as described above. Application of the method valuing changes in inventories at current prices excludes 'holding gains' from the output value. In the 'Revised System of National Accounts' this valuation method is defined as 'perpetual inventory method' (UN, 1992, Ch. VI, sector D.62), because the additions to inventories (= harvest/output) are valued at producers'(harvest) prices and the withdrawals from inventories (= sales) at sales prices. It follows that the price divergencies ('holding gains') are valued in the changes in inventories and not in the output value. This problem is discussed in detail in Chapter VI, sector D ('The measurement of market output') of the 'Revised System of National Accounts'. It states that normally the 'quantity measure' (valuation at weighted average prices for the report period concerned) suffices in a situation with slight price fluctuations and without sharp seasonal movements. In other situations, the 'quantity measure' will not be a correct approximation of the 'perpetual inventory method'. In this connection agriculture is mentioned explicitly. The via the 'perpetual inventory method' generated 'holding gains' do not, in contrast to the operating surplus, relate directly to output. It seems advisable to registrate 'holding gains' seperately from the 'operating surplus'. The registration of 'holding gains' does not form part of the revision of the 1987 DAA. A registration in the framework of the 'Revised System of National Accounts' may possibly provide an opening for the solution of the first mentioned disadvantage.

### 3.2.2 Revised level of compensation of employees

The method for estimating compensation of employees in agriculture has been completely revised (see Table 1 for results). The 'Agricultural Economics Research Institute' (LEI-DLO) estimates compensation of employees on the basis of data on number of workers taken from the agricultural/labour force surveys carried out by the 'Netherlands Central Bureau of Statistics' (CBS) and wage rates from the 'LEI-DLO Farm Accounting Data Network' (FADN).

Compensation of employees for agricultural services are estimated separately on the basis of PS 014. Before the revision a level for compensation of employees (for SBI 011, 012 and 014 together), which had been determined in the past, was extrapolated on the basis of changes, based on various CBS labour surveys.

### 3.2.3 Revised level of intermediate consumption of energy

The change in the level of energy intermediate consumption is also based on a new survey of farm accounting organisations made by the CBS. This has given a better picture of the type of energy sources (natural gas, heating oil, petrol, diesel etc.) which are used in agriculture.

Further information is obtained from existing CBS energy statistics. In particular, electricity intermediate consumption was substantially underestimated previously (see Table 3).

### 3.2.4 Recording of auction commission

Before the revision, in calculating agricultural intermediate consumption no estimate was made of delivery costs for market gardening auctions in the greenhouse sector. These costs relate, among other things, to auction commission, the balance of the Products Fund charges and payments, the hire of barrels, refrigeration, storage, sorting, packaging, freight and delivery costs. In particular, the auction commission and the minimum price fund charges have never been available at all, and it is doubtful whether the other items were correctly estimated. Following the revision, the other items will be much better recorded.

The 'Central Market Gardening Produce Auctioneering Bureau' issues data every year on the Products Fund charges and payments. The auction commission is estimated as a percentage of auction turnover. This percentage varies depending on the auction and the product. The total output value of the auctions is equivalent to the sum of the auction commissions (paid by the growers) added to the commission paid by the buyers (e.g. trade). The proportion paid by the market gardening sector is shown as commission in Table 3.

## 3.3 A more in-depth analysis of available sources

### 3.3.1 Revised level of output of onions

Before the revision, onion output in terms of quantity was determined on the basis of trade output according to the 'Commodity Board for Vegetables and Fruit' (CBVF), which produced an underestimate, since drying-out losses, taring etc. bring down the gross weight. The export price, which is much higher than the ex-farm price, was used for determining the product value. This produced an overestimate (see Table 2). Following the revision this price has been replaced by a grower's price.

The aim is to record quantity on the basis of the unwashed weight. The harvest estimate offers only a partial figure, since only areas of seed onions are recorded. The considerable increase in second-year planting onions since 1987 is not reflected in this figure. The CBVF provides additional information which can be used to estimate the total harvest, and which can be compared with other indicators, such as imports and exports.

### 3.3.2 Revised level of output of agricultural seeds for sowing

Following the revision, the quantities of agricultural seeds for sowing from Netherlands output are estimated on the basis of adjusted data from the 'Commodity Board for Cereals, Seeds and Pulses'. Whereas before the revision the price of seeds was estimated on the basis of export price trends, changes in import prices are now used, because these prices are more representative for changes in producers' prices.

A third basic change is that own consumption of agricultural seeds from intermediate deliveries by agricultural establishments is no longer recorded. The combination of these three changes has resulted in a substantial decrease in output value (see Table 2).

### 3.3.3 Revised level of output of fruit and vegetables

In this sector the change does not concern so much a different method or source of data, but an improvement in the quality of the estimates, which incorporate much more detail. For instance, the processing of data from a

large number of various sources (such as the CBVF, imports and exports, the quarterly survey on the vegetable and fruit processing industry etc.), at product level, using an automated system, has produced a substantial improvement in quality (see Table 2). However, the revised valuation method for apples and pears, which is analogous with that described in 3.2.1, is new.

### 3.3.4 Revised level of intermediate consumption of compound feedingstuffs

The quantities for animal feedingstuffs output are estimated on the basis of the functional information provided by the 'Commodity Board for Animal Feedingstuffs'. A large part of this output is sold to livestock farmers. The difference between the value at producers' prices of this amount and the value at purchasers' prices to agriculture is defined as trade and transport margins. Revised calculations have produced a steep reduction in this figure, and thus a substantial upward adjustment in value added (see Table 3).

### 3.3.5 Revised level of intermediate consumption of seeds and seedlings

This input category refers to import. The introduction of a more detailed breakdown of goods classification in the external trade statistics has produced a better demarcation for the heading 'seeds and seedlings'. This has produced a downward revision for this level (see Table 3).

### 3.3.6 Revised level of intermediate consumption of fertilizers

Even following the revision it is as difficult as ever to estimate intermediate consumption of fertilizers in agriculture. In spite of an increased amount of data (imports and exports, production statistics, LEI-DLO etc.), the results are not completely reliable, because of various differences in definitions, the lack of data on inventories and the direct recording of purchases by agriculture. The basis for the new estimating method is the LEI-DLO's 'Annual handbook on fertilizers'. In general this publication has proved to be reasonably reliable.

A comparison with the indicators on production and foreign trade produces in each case a good picture of the quantities which become

available for domestic consumption (from imports and domestic output) including that part intended for the agricultural sector.

All these figures are supplemented with purchases outside the fertilizer industry. The most important examples of this are skimmings from the sugar industry and guano from imports. The prices at which the agricultural sector purchases fertilizers are also based on data from the LEI-DLO. Because the calculation method for fertilizers is functional, the figures must be broken down subsequently into purchases by agriculture (SBI 011/012), public parks and gardens, landscape gardening (SBI 013) and agricultural services (SBI 014; see 3.1). On balance, the level for agriculture has been adjusted downwards somewhat (see Table 3).

### 3.3.7 Revised level of other intermediate consumption

Because of the substantial growth in the volume of production statistics in the services sector, the more detailed breakdowns in the NA and an improved method of comparing supply with demand, a series of intermediate consumption headings in the domain of other costs can now be specified; at present these are not directly recorded for agriculture (since there are no production statistics for these industry). A number of existing intermediate consumption headings has thus been adjusted. The main examples concern the intermediate consumption of water and veterinary services; these have been revised upwards fairly steeply (see Table 3).

### 3.3.8 Revised level of subsidies

In addition to the levies and subsidies as determined under EU regulations by the 'Ministry of Agriculture, Nature Management and Fisheries', using the calculations by the 'Agricultural equilibrium fund' (LEF), regulations have been enacted which apply to agriculture, but are not included in the LEF calculation. The recent changes in the laws governing fertilizers are an example of this. On the one hand, subsidies are granted for the construction of fertilizer storage capacity and on the other hand there is a levy on the output of fertilizers. Following the revision, an attempt has been made to give as complete a picture as possible of all the regulations in this domain. Regulations which before the revision were incorrectly assumed to apply to agriculture, such as

wages subsidies, are no longer recorded. Table 1 shows the effect of these corrections.

### 3.3.9 Revised level of consumption of fixed capital

Consumption of fixed capital means in general terms the calculated decline, during the course of the accounting period, in the current value of the stock of fixed assets held by producers. It is calculated on the basis of estimates of the average economic service lives of the various categories of fixed assets and their replacement value in the period over which they are written off. The actual calculations are made on the basis of the 'perpetual inventory method' (UN, 1992, Ch. VI, sector H.5).

The basis of this method is the value of the stock of fixed assets at the beginning of the year added to the balance of increases and decreases in gross fixed capital formation in the reference year. The value of the stock of fixed assets at the end of the year is calculated in this way.

The stock of fixed assets (by type of asset) divided by the imputed lifetime gives the estimated consumption of fixed capital for the year concerned.

In anticipation of new calculations for the total NA the lifetime of fixed assets in agriculture has been reduced drastically on the ground of information from CBS and LEI-DLO. On this basis an attempt has been made to recalculate the revised investment levels for the past years, so that new estimates could be compiled for consumption of fixed capital for these establishments (see Table 1). The result is naturally very provisional in view of the above.

## 3.4 Changes in recording data because of the institutional approach

### 3.4.1 Secondary activities in agriculture

In view of the limited data availability, estimates for this heading are restricted to transport margins, for which a level is determined by comparing supply and demand in the NA integration process (see 3.3.7). The transport margins mainly refer to own-account transport of milk and livestock by agricultural establishments on a contract basis (Table 2).

### 3.4.2 Intermediate deliveries in agriculture

One aspect of the institutional method is that as complete a picture as possible is obtained of transactions among establishments. Before the revision, not only were the data on deliveries within agriculture incomplete, but the method of recording them was not fully in line with the NA definitions. For a number of products the production for own-account consumption was, incorrectly, included in these transactions.

The elimination of these deliveries has produced a reduction in the output and intermediate consumption values for a number of products, such as milk, eggs and hay.

As part of the revision a wide-ranging survey was carried out on the extent of deliveries of livestock within agriculture. Using various sources, such as the FADN, estimates were made which caused a substantial increase in the output and intermediate consumption figures. In addition, deliveries of green maize for animal feedingstuffs and flower bulbs to heating sheds have also been revised (see Table 2).

The valuation of purchases of intermediate deliveries in agriculture was at producers' prices before revision, whereas following the revision they are valued at purchasers' prices, in accordance with the NA definitions. The recording of trade and transport margins has also contributed to an improved estimate of the output value of trade.

## 3.5 Changes in definitions

A significant change in the definitions concerns the distinction between levies and subsidies which are linked to products and those which are not. The product-linked category is in general restricted to subsidies and levies which can be directly related to the value or volume of the sales of the final products (or imported products). Because the co-responsibility levy and super-levy on milk over a given reporting year extend over a number of years, it is not possible to relate them directly to the flows of commodities; following the revision these are no longer recorded as product-related. However, this change in recording has no effect on the level of the value added.

Furthermore, there are a number of changes in the terminology used, so

that following the revision this is fully in line with the NA. The concept 'gross output' (which previously meant output excluding intermediate deliveries between agricultural establishments) is no longer used in the DAA following the revision, and the concept 'total output' has been changed to 'output' (see Tables 2, 4 and 5).

# 4. From National Agricultural accounts to Eurostat's Agricultural accounts

## 4.1 Introduction

The 'European Harmonized Agricultural accounts' (the EAA) are calculated from the DAA. Eurostat's 'Manual on Economic Accounts for Agriculture and Forestry' (the MEAAF), which is based on the 'European System of Integrated Economic Accounts', is used for this. On the basis of this manual changes are made to the national data. As a result of the revision of the DAA the national tables are less easy to relate to the EAA. The changes made to the national tables are more numerous than previously, which is due mainly to the completely revised system of recording intermediate deliveries of agricultural establishments (IDAE) and the institutional approach as regards some aspects.

The difference from the previous situation is apparent in the changing levels of value added in the DAA and the EAA. The conversion of the DAA to the EAA, against the background of the conceptual differences between the two systems, is explained briefly in the following subsections.

The main results of the EAA are given in Tables 6 and 7, (see the annual Eurostat publication 'Economic Accounts for Agriculture and Forestry' for detailed data).

## 4.2 Eurostat's Agricultural accounts

The EAA are based on the 'production branch' concept. This is a functional concept. It comprises purely agricultural output. Specialized units, which supply machines, equipment and operating staff for contract work on agricultural establishments are also considered to form part of the agricultural output branch. This implies that when compiling the EAA the value of all agricultural products must be determined, irrespective of where or in which type of unit they are produced. The description of the production process is therefore functional. Products and services which do not form part of agriculture but are generated on agricultural

establishments are not shown separately in the EAA.

An important difference relates to the recording of the IDAE, since the EAA are based on the concept of the 'national farm' (Eurostat, 1992, Ch. I.B.). This is based on the fiction of a single national agricultural holding, which is responsible for the total output of agricultural products in the economy of a country. In general, the output side of the EAA includes only products which are sold or delivered and which do not return to the 'national farm'. The IDAE concerns goods which in fact do return to the 'national farm'. Special rules for recording these transactions are laid down in the MEAAF.

The effect of these rules is that in the EAA transactions between agricultural establishments are recorded only when some person or establishment outside agriculture is involved. This person or establishment must be the legal owner of the goods. Direct transactions between agricultural establishments are not included at all. In the above regulations an exception is made for trade in livestock. This is to prevent the inclusion of the value of livestock in the accounts each time its ownership changes. For these deliveries only the ancillary charges incurred in the transaction are recorded, such as transport charges, fees, merchanting services and commissions.

The use of the concept of the 'national farm' thus gives a partial balancing of output and intermediate consumption in the DAA.

## 4.3 Changes in the national tables vis-à-vis the Eurostat tables

### 4.3.1 Intermediate deliveries

Before the revision, the DAA were based on the assumption that the IDAE referred to direct transactions between agricultural establishments without the involvement of any person or establishment outside agriculture. The use of the 'national farm' concept meant that no IDAE were included. Accordingly, the output and intermediate consumption values in the DAA were reduced by the same amount, since the trade and transport margins were not recorded in IDAE. Following the revision, only transactions relating to trade in livestock are balanced. This is done at both the output and intermediate consumption stages in producers' prices.

The margins on intermediate consumption of livestock are still recorded as costs. The net result is that, even following the revision, because of the change arising from the balancing of the IDAE, the level of value added is unchanged.

### 4.3.2 Institutional elements

The aggregation and balancing of the tables of SBI 011 and 012 with the tables of SBI 014 which is necessary for the EAA cannot be carried out directly. For this conversion, that part of the intermediate consumption in SBI 014 which can be attributed to activities which have no relation to agriculture must be reduced by the total intermediate consumption of this group of establishments. This is done by applying a 'breakdown percentage'. This percentage is calculated on the basis of the relative proportion of agricultural contract work in the total output value of SBI 014. Transport margins are not included in the EAA as a secondary activity, since they do not relate to typical agricultural activities.

### 4.3.3 Recording export rebates

Contrary to the NA, the MEAAF bases the recording of product-related subsidies (and levies) on the payment criterion. In general, subsidies are recorded in the accounts and tables of the branches or sectors by which they are paid. In accordance with this rule, export rebates on agricultural products must be recorded under trade (exporters) and not under agriculture. In the EAA this is reflected indirectly in higher sales prices and higher output values for the products concerned.

On balance, this change does not affect the level of value added at factor cost.

## 5. Summary of the main results

The revision of the DAA has brought substantial changes in the levels and patterns of the various variables. The substantial upwards correction for intermediate consumption, in particular, produced a lower level of gross value added at market prices. In spite of the substantial drop in the level of compensation of employees, the level of the operating surplus following the revision is also lower.

An indication of the effect on the results of the change in the concepts is given by the level of gross value added at market prices before the revision (17,006 mio Dfl.) compared with the levels for SBI 011 and 012 (15,066 mio Dfl.) and SBI 014 (1,184 mio Dfl.) together (16,250 mio Dfl.), following the revision. This also produces a lower level.

Value added is an important factor in assessing the position of agriculture in the context of the total national economy. The share of gross value added at market prices accounted for by agriculture in the national total dropped in 1987 from 4.4% to 3.8%. If the contribution to this process of income generation in SBI 014 were attributed to agriculture, the latter percentage would be 4.1%.

The economic importance of agriculture is also reflected in the output and input structures. The effects of the revision on these for 1987 are shown in Tables 3 and 5. In the revision projects described in Section 3 reference to the tables is made in each case. This shows the quantitative effects of the revision on detailed data.

The effects of the revision on the pattern and levels of the variables in the DAA are in general comparable with those in the EAA. A significant difference between the two systems of accounts following the revision concerns the levels produced by using two different conceptual bases.

The difference in the levels - following the revision - of gross value added at market prices in the DAA and the EAA (15,066 and 15,827 mio Dfl respectively for 1987) is explained by the implicit incorporation of SBI 014 into the EAA.

Under the definitions in the MEAAF, in 1987 the share of the national total of value added accounted for by agriculture following the revision was 4.0%. Before the revision this percentage was 4.4%, as in the DAA.

The level of compensation of employees and thus of operating surplus

in the DAA and the EAA were not comparable (see Tables 1 and 6). This is explained by the fact that before the revision the data on compensation of employees in the EAA were provided directly by the LEI-DLO to Eurostat. Further explanations are required on a number of points.

Table 2 highlights the upwards revision of the level of intermediate deliveries of agricultural establishments in crop production. In the adjustments of the levels for the individual products this is not noticeable. This is because, following the revision, cut maize is recorded as animal feedingstuffs, for which in 1987 the value at producers' prices was 250 mio Dfl. and the value at purchasers' prices 306 mio Dfl.

The deviation from the revised valuation of seasonal products is substantial in the case of potatoes. The output value was revised downwards. This produced an adjustment in the value for changes in inventories from + 47 to - 121 mio Dfl. (see Table 5). Unlike the other adjustments, this revision may not be reflected in the estimates in later years. Depending on the extent to which the sales prices fluctuate, the deviation as result of this change in method can vary strongly.

The new way of recording subsidies as a result of the change in the definitions cannot be seen in the tables. This follows from the valuation of output at market prices. As previously mentioned, the effect of this change on the level of value added at factor cost is nil.

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# A P P E N D I X

## T A B L E S

Table 1. Output, intermediate consumption and value added in agriculture.

| | | before revision | | | | after revision | | | | after revision/ before revision | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1986 | 1987 | growth rate | | 1986 | 1987 | growth rate | | 1986 | 1987 |
| | | | | current prices | constant prices | | | current prices | constant prices | current prices | current prices |
| | | mio fl | | | | | | | | | |
| 1 | Output | 35014 | 33545 | -4.2 | -1.5 | 36820 | 35048 | -4.8 | -1.4 | 105.2 | 104.5 |
| 2 | Intermediate consumption | 17308 | 16539 | -4.4 | 2.0 | 21250 | 19982 | -6.0 | 0.4 | 122.8 | 120.8 |
| 3 | (1-2) Gross value added at market prices | 17706 | 17006 | -4.0 | -5.0 | 15570 | 15066 | -3.2 | -3.8 | 87.9 | 88.6 |
| 4 | Consumption of fixed capital *) | 2420 | 2570 | 6.2 | | 3677 | 3012 | -18.1 | | 151.9 | 117.2 |
| 5 | (3-4) Net value added at market prices | 15286 | 14436 | -5.6 | | 11893 | 12054 | 1.4 | | 77.8 | 83.5 |
| 6 | Subsidies under EU regulations | 199 | 176 | -11.6 | | 199 | 176 | -11.6 | | 100.0 | 100.0 |
| 7 | Other subsidies | 71 | 137 | 93.0 | | 125 | 169 | 35.2 | | 176.1 | 123.4 |
| 8 | Super- and co-responsebility levy (milk) | 339 | 273 | -19.5 | | 273 | 273 | 0.0 | | 80.5 | 100.0 |
| 9 | Indirect taxes | 694 | 688 | -0.9 | | 572 | 656 | 14.7 | | 82.4 | 95.3 |
| 10 | (5+6+7-8-9) Net value added at factor cost | 14523 | 13788 | -5.1 | | 11372 | 11470 | 0.9 | | 78.3 | 83.2 |
| 11 | Compensation of employees | 2902 | 2997 | 3.3 | | 1619 | 1696 | 4.8 | | 55.8 | 56.6 |
| 12 | (10-11) Net operating surplus | 11621 | 10791 | -7.1 | | 9753 | 9774 | 0.2 | | 83.9 | 90.6 |

*) The figures following the revision are provisional

Table 2. Value of agricultural output.

| | | A. Output | | B. Intermediate deliveries within agriculture | | C. Output excluding B. | |
|---|---|---|---|---|---|---|---|
| | | 1987 before rev | 1987 | 1987 before rev | 1987 | 1987 before rev | 1987 |
| | | mio fl | | | | | |
| Final arable crop output | | 3073 | 2900 | 394 | 529 | 2679 | 2371 |
| including: | cereals | 438 | 452 | 27 | 22 | 411 | 430 |
| | potatoes | 1128 | 1041 | 105 | 118 | 1023 | 923 |
| | sugarbeets | 708 | 662 | | | 708 | 662 |
| | onions | 136 | 63 | | | 136 | 63 |
| | seeds for sowing | 402 | 198 | 175 | 76 | 227 | 122 |
| Final animal output | | 20461 | 22103 | 494 | 2069 | 19967 | 20034 |
| including: | cattle | 3108 | 4304 | | 1029 | 3108 | 3275 |
| | pigs | 5254 | 6268 | | 1028 | 5254 | 5240 |
| | sheep and goats | 187 | 188 | | | 187 | 188 |
| | equines | 34 | 35 | | | 34 | 35 |
| | poultry | 1306 | 1318 | | | 1306 | 1318 |
| | milk | 8751 | 8523 | 229 | | 8522 | 8523 |
| | eggs | 1431 | 1168 | 160 | | 1271 | 1168 |
| | hay | 125 | 92 | 105 | 12 | 20 | 80 |
| Final horticulture output | | 10009 | 9946 | 32 | 147 | 9977 | 9799 |
| including: | vegetables | 3414 | 3357 | | | 3414 | 3357 |
| | fruit | 462 | 454 | | | 462 | 454 |
| | flower bulbs | 812 | 812 | | 116 | 812 | 696 |
| | flowers and plants | 4261 | 4261 | | | 4261 | 4261 |
| | nursery plants | 613 | 613 | | | 613 | 613 |
| | seeds | 426 | 433 | 32 | 31 | 394 | 402 |
| Secondary activity transport | | 0 | 99 | | | 0 | 99 |
| Final agricultural output | | 33543 | 35048 | 920 | 2745 | 32623 | 32303 |

Table 3. Value of intermediate consumption of goods and services in agriculture.

| | | 1987 before rev | 1987 |
|---|---|---|---|
| | | purchasing value mio Dfl. | |
| Total intermediate consumption | | 16539 | 19982 |
| including: | intermediate agricultural products | 920 | 3119 |
| | compound feedingstuffs | 8237 | 7487 |
| | replacer milk | 1087 | 1063 |
| | other feedingstuffs | 77 | 77 |
| | seeds and seedlings | 648 | 566 |
| | fertilizers and soil improvers | 913 | 858 |
| | plant protection products | 290 | 299 |
| | natural gas | 774 | 749 |
| | electricity | 148 | 357 |
| | other forms of energy | 348 | 369 |
| | maintenance and repair | 1220 | 1046 |
| | agricultural services | 0 | 1508 |
| | auction commission | 0 | 327 |
| | veterinary services | 221 | 302 |
| | water | 28 | 127 |

Table 4. Volume and price changes in agriculture.

| | | Year to year mutations (%) | | | |
|---|---|---|---|---|---|
| | | Volume changes | | Price changes | |
| | | 1987 before rev | 1987 | 1987 before rev | 1987 |
| Output | | -1.5 | -1.4 | -2.5 | -3.3 |
| including: | arable crops | -3.5 | -7.0 | -5.5 | -12.9 |
| | livestock products | -4.0 | -3.2 | -5.0 | -4.3 |
| | horticulture crops | 5.0 | 5.7 | 3.0 | 2.2 |
| Intermediate consumption of goods and services | | 2.0 | 0.4 | -6.5 | -7.0 |
| Gross value added at market prices | | -5.0 | -3.8 | | |

Table 5. Agricultural output by product, by outlet.

| Group | | Year | Output | Export | Intermediate use | | | Final domestic use | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | agri-culture | food-processing industry | other | con-sumption | gross fixed captital formation | increase in inventories |
| | | | mio Dfl. | | | | | | | |
| Total arable crops | | 1987 b.r. | 3074 | 891 | 393 | 1615 | 30 | 115 | | 30 |
| | | 1987 | 2900 | 804 | 529 | 1583 | 67 | 127 | | -210 |
| including: | cereals | 1987 b.r. | 438 | 99 | 26 | 364 | 2 | | | -53 |
| | | 1987 | 452 | 104 | 22 | 386 | 4 | | | -64 |
| | potatoes | 1987 b.r. | 1128 | 400 | 105 | 477 | 4 | 96 | | 46 |
| | | 1987 | 1041 | 439 | 118 | 484 | 8 | 113 | | -121 |
| | sugarbeets | 1987 b.r. | 708 | 2 | | 706 | | | | |
| | | 1987 | 662 | 1 | | 661 | | | | |
| Total livestock products | | 1987 b.r. | 20462 | 2520 | 494 | 17594 | 70 | 354 | -559 | -11 |
| | | 1987 | 22103 | 2393 | 2069 | 17739 | 103 | 327 | -559 | 31 |
| including: | cattle | 1987 b.r. | 3108 | 205 | | 3503 | | | -550 | -50 |
| | | 1987 | 4304 | 205 | 1029 | 3667 | | 3 | -550 | -50 |
| | pigs | 1987 b.r. | 5220 | 922 | | 4291 | | 17 | -35 | 25 |
| | | 1987 | 6268 | 919 | 1028 | 4329 | | 2 | -35 | 25 |
| | poultry | 1987 b.r. | 1338 | 237 | | 1080 | | | | 21 |
| | | 1987 | 1318 | 233 | | 1064 | | | | 21 |
| | milk | 1987 b.r. | 8751 | | 229 | 8470 | | 52 | | |
| | | 1987 | 8523 | | | 8471 | | 52 | | |
| | eggs | 1987 b.r. | 1431 | 909 | 160 | 158 | 9 | 195 | | |
| | | 1987 | 1168 | 824 | | 106 | 38 | 200 | | |
| Total horticulture crops | | 1987 b.r. | 10009 | 6991 | 32 | 261 | 381 | 2312 | 32 | |
| | | 1987 | 9946 | 7007 | 147 | 278 | | 2458 | 66 | -10 |
| including: | vegetables and fruit | 1987 b.r. | 3876 | 2260 | | 237 | 365 | 1014 | | |
| | | 1987 | 3811 | 2203 | | 244 | | 1374 | | -10 |
| | flowers and plants | 1987 b.r. | 4261 | 3399 | | | | 862 | | |
| | | 1987 | 4261 | 3469 | | | | 792 | | |
| Total agriculture *) | | 1987 b.r. | 33545 | 10402 | 919 | 19470 | 481 | 2781 | -527 | 19 |
| | | 1987 | 35048 | 10204 | 2745 | 19600 | 269 | 2912 | -493 | -189 |

*) Following the revision these figures include secondary trade activities.

Table 6. Output, intermediate consumption and value added in agriculture for the SOEC.

| | 1987 before rev | 1987 |
|---|---|---|
| | mio Dfl. | |
| 1 Output | 32626 | 33019 |
| 2 Intermediate consumption | 15613 | 16882 |
| 3 (1-2) Gross value added at market prices | 17013 | 16137 |
| 4 Consumption of fixed capital *) | 2570 | 3261 |
| 5 (3-4) Net value added at market prices | 14443 | 12876 |
| 6 Subsidies | 327 | 231 |
| 7 Indirect taxes | 976 | 951 |
| 8 (5+6-7) Net value added at factor cost | 13795 | 12156 |
| 9 Compensation of employees | 1997 | 2189 |
| 10 (8-9) Net oprerating surplus | 11798 | 9966 |

*) The figures following the revision are provisional.

Table 7. Output, intermediate consumption and value added in agriculture for the SOEC.

| | Year to year mutations (%) | | | |
|---|---|---|---|---|
| | Volume changes | | Price changes | |
| | 1987 before rev | 1987 | 1987 before rev | 1987 |
| Output | -2.0 | -1.8 | -2.3 | -2.6 |
| Intermediate consumption of goods and services | 1.1 | 1.3 | -5.7 | -6.9 |
| Gross value added at market prices | -5.1 | -5.0 | | |

**Statistics Netherlands**
**National Accounts Occasional Papers**

**NA/01 Flexibility in the system of National Accounts**, Van Eck, R., C.N. Gorter and H.K. van Tuinen (1983).
This paper sets out some of the main ideas of what gradually developed into the Dutch view on the fourth revision of the SNA. In particular it focuses on the validity and even desirability of the inclusion of a number of carefully chosen alternative definitions in the "Blue Book", and the organization of a flexible system starting from a core that is easier to understand than the 1968 SNA.

**NA/02 The unobserved economy and the National Accounts in the Netherlands, a sensitivity analysis**, Broesterhuizen, G.A.A.M. (1983).
This paper studies the influence of fraud on macro-economic statistics, especially GDP. The term "fraud" is used as meaning unreporting or underreporting income (e.g. to the tax authorities). The conclusion of the analysis of growth figures is that a bias in the growth of GDP of more than 0.5% is very unlikely.

**NA/03 Secondary activities and the National Accounts: Aspects of the Dutch measurement practice and its effects on the unofficial economy**, Van Eck, R. (1985).
In the process of estimating national product and other variables in the National Accounts a number of methods is used to obtain initial estimates for each economic activity. These methods are described and for each method various possibilities for distortion are considered.

**NA/04 Comparability of input-output tables in time**, Al, P.G. and G.A.A.M. Broesterhuizen (1985).
It is argued that the comparability in time of statistics, and input-output tables in particular, can be filled in in various ways. The way in which it is filled depends on the structure and object of the statistics concerned. In this respect it is important to differentiate between coordinated input-output tables, in which groups of units (industries) are divided into rows and columns, and analytical input-output tables, in which the rows and columns refer to homogeneous activities.

**NA/05 The use of chain indices for deflating the National Accounts**, Al, P.G., B.M. Balk, S. de Boer and G.P. den Bakker (1985).
This paper is devoted to the problem of deflating National Accounts and input-output tables. This problem is approached from the theoretical as well as from the practical side. Although the theoretical argument favors the use of chained Vartia-I indices, the current practice of compilating National Accounts restricts to using chained Paasche and Laspeyres indices. Various possible objections to the use of chained indices are discussed and rejected.

**NA/06 Revision of the system of National Accounts: the case for flexibility**, Van Bochove, C.A. and H.K. van Tuinen (1985).
It is argued that the structure of the SNA should be made more flexible. This can be achieved by means of a system of a general purpose core supplemented with special modules. This core is a fully fledged, detailed system of National Accounts with a greater institutional content than the present SNA and a more elaborate description of the economy at the meso-level. The modules are more analytic and reflect special purposes and specific theoretical views.

**NA/07 Integration of input-output tables and sector accounts; a possible solution**, Van den Bos, C. (1985).
The establishment-enterprise problem is tackled by taking the institutional sectors to which the establishments belong into account during the construction of input-output tables. The extra burden on the construction of input-output tables resulting from this approach is examined for the Dutch situation. An adapted sectoring of institutional units is proposed for the construction of input-output tables.

**NA/08 A note on Dutch National Accounting data 1900-1984**, Van Bochove, C.A. (1985).
This note provides a brief survey of Dutch national accounting data for 1900-1984, concentrating on national income. It indicates where these data can be found and what the major discontinuities are. The note concludes that estimates of the level of national income may contain inaccuracies; that its growth rate is measured accurately for the period since 1948; and that the real income growth rate series for 1900-1984 may contain a systematic bias.

**NA/09 The structure of the next SNA: review of the basic options**, Van Bochove, C.A. and A.M. Bloem (1985).
There are two basic issues with respect to the structure of the next version of the UN System of National Accounts. The first is its 'size': reviewing this issue, it can be concluded that the next SNA should contain an integrated meso-economic statistical system. It is essential that the next SNA contains an institutional system without the imputations and attributions that pollute the present SNA. This can be achieved by distinguishing, in the central system of the next SNA, a core (the institutional system), a standard module for non-market production and a standard module describing attributed income and consumption of the household sector.

**NA/10 Dual sectoring in National Accounts**, Al, P.G. (1985).
Following a conceptual explanation of dual sectoring, an outline is given of a statistical system with complete dual sectoring in which the linkages are also defined and worked out. It is shown that the SNA 1968 is incomplete and obscure with respect to the links between the two sub-processes.

**NA/11 Backward and forward linkages with an application to the Dutch agro-industrial complex**, Harthoorn, R. (1985).
Some industries induce production in other industries. An elegant method is developed for calculating forward and backward linkages avoiding double counting. For 1981 these methods have been applied to determine the influence of Dutch agriculture in the Dutch economy in terms of value added and labour force.

**NA/12 Production chains**, Harthoorn, R. (1986).
This paper introduces the notion of production chains as a measure of the hierarchy of industries in the production process. Production chains are sequences of transformation of products by successive industries. It is possible to calculate forward transformations as well as backward ones.

**NA/13 The simultaneous compilation of current price and deflated input-output tables**, De Boer, S. and G.A.A.M. Broesterhuizen (1986).
A few years ago the method of compiling input-output tables underwent in the Netherlands an essential revision. The most significant improvement is that during the entire statistical process, from the processing and analysis of the basic data up to and including the phase of balancing the tables, data in current prices and deflated data are obtained simultaneously and in consistency with each other.

**NA/14 A proposal for the synoptic structure of the next SNA**, Al, P.G. and C.A. van Bochove (1986).

**NA/15 Features of the hidden economy in the Netherlands**, Van Eck, R. and B. Kazemier (1986).
This paper presents survey results on the size and structure of the hidden labour market in the Netherlands.

**NA/16 Uncovering hidden income distributions: the Dutch approach**, Van Bochove, C.A. (1987).

**NA/17 Main national accounting series 1900-1986**, Van Bochove, C.A. and T.A. Huitker (1987).
The main national accounting series for the Netherlands, 1900-1986, are provided, along with a brief explanation.

**NA/18 The Dutch economy, 1921-1939 and 1969-1985. A comparison based on revised macro-economic data for the interwar period**, Den Bakker, G.P., T.A. Huitker and C.A. van Bochove (1987).
A set of macro-economic time series for the Netherlands 1921-1939 is presented. The new series differ considerably from the data that had been published before. They are also more comprehensive, more detailed, and conceptually consistent with the modern National Accounts. The macro-economic developments that are shown by the new series are discussed. It turns out that the traditional economic-historical view of the Dutch economy has to be reversed.

**NA/19 Constant wealth national income: accounting for war damage with an application to the Netherlands, 1940-1945**, Van Bochove, C.A. and W. van Sorge (1987).

NA/20 **The micro-meso-macro linkage for business in an SNA-compatible system of economic statistics**, Van Bochove, C.A. (1987).

NA/21 **Micro-macro link for government**, Bloem, A.M. (1987).
This paper describes the way the link between the statistics on government finance and national accounts is provided for in the Dutch government finance statistics.

NA/22 **Some extensions of the static open Leontief model**, Harthoorn, R.(1987).
The results of input-output analysis are invariant for a transformation of the system of units. Such transformation can be used to derive the Leontief price model, for forecasting input-output tables and for the calculation of cumulative factor costs. Finally the series expansion of the Leontief inverse is used to describe how certain economic processes are spread out over time.

NA/23 **Compilation of household sector accounts in the Netherlands National Accounts**, Van der Laan, P. (1987).
This paper provides a concise description of the way in which household sector accounts are compiled within the Netherlands National Accounts. Special attention is paid to differences with the recommendations in the United Nations System of National Accounts (SNA).

NA/24 **On the adjustment of tables with Lagrange multipliers**, Harthoorn, R. and J. van Dalen (1987).
An efficient variant of the Lagrange method is given, which uses no more computer time and central memory then the widely used RAS method. Also some special cases are discussed: the adjustment of row sums and column sums, additional restraints, mutual connections between tables and three dimensional tables.

NA/25 **The methodology of the Dutch system of quarterly accounts**, Janssen, R.J.A. and S.B. Algera (1988).
In this paper a description is given of the Dutch system of quarterly national accounts. The backbone of the method is the compilation of a quarterly input-output table by integrating short-term economic statistics.

NA/26 **Imputations and re-routeings in the National Accounts**, Gorter, Cor N. (1988).
Starting out from a definition of 'actual' transactions an inventory of all imputations and re-routeings in the SNA is made. It is discussed which of those should be retained in the core of a flexible system of National Accounts. Conceptual and practical questions of presentation are brought up. Numerical examples are given.

NA/27 **Registration of trade in services and market valuation of imports and exports in the National Accounts**, Bos, Frits (1988).
The registration of external trade transactions in the main tables of the National Accounts should be based on invoice value; this is not only conceptually very attractive, but also suitable for data collection purposes.

NA/28 **The institutional sector classification**, Van den Bos, C. (1988).
A background paper on the conceptual side of the grouping of financing units. A limited number of criteria are formulated.

NA/29 **The concept of (transactor-)units in the National Accounts and in the basic system of economic statistics**, Bloem, Adriaan M. (1989).
Units in legal-administrative reality are often not suitable as statistical units in describing economic processes. Some transformation of legal-administrative units into economic statistical units is needed. This paper examines this transformation and furnishes definitions of economic statistical units. Proper definitions are especially important because of the forthcoming revision of the SNA.

NA/30 **Regional income concepts**, Bloem, Adriaan M. and Bas De Vet (1989).
In this paper, the conceptual and statistical problems involved in the regionalization of national accounting variables are discussed. Examples are the regionalization of Gross Domestic Product, Gross National Income, Disposable National Income and Total Income of the Population.

**NA/31 The use of tendency surveys in extrapolating National Accounts**, Oudde-ken, Frank and Gerrit Zijlmans (1989).
This paper discusses the feasibility of the use of tendency survey data in the compilation of very timely Quarterly Accounts. Some preliminary estimates of relations between tendency survey data and regular Quarterly Accounts-indicators are also presented.

**NA/32 An economic core system and the socio-economic accounts module for the Netherlands**, Gorter, Cor N. and Paul van der Laan (1989).
A discussion of the core and various types of modules in an overall system of economy related statistics. Special attention is paid to the Dutch Socio-economic Accounts. Tables and figures for the Netherlands are added.

**NA/33 A systems view on concepts of income in the National Accounts**, Bos, Frits (1989).
In this paper, concepts of income are explicitly linked to the purposes of use and to actual circumstances. Main choices in defining income are presented in a general system. The National Accounts is a multi-purpose framework. It should therefore contain several concepts of income, e.g. differing with respect to the production boundary. Furthermore, concepts of national income do not necessarily constitute an aggregation of income at a micro-level.

**NA/34 How to treat borrowing and leasing in the next SNA**, Keuning, Steven J. (1990).
The use of services related to borrowing money, leasing capital goods, and renting land should not be considered as intermediate inputs into specific production processes. It is argued that the way of recording the use of financial services in the present SNA should remain largely intact.

**NA/35 A summary description of sources and methods used in compiling the final estimates of Dutch National Income 1986**, Gorter, Cor N. and others (1990).
Translation of the inventory report submitted to the GNP Management Committee of the European Communities.

**NA/36 The registration of processing in supply and use tables and input-output tables**, Bloem, Adriaan M., Sake De Boer and Pieter Wind (1993).
The registration of processing is discussed primarily with regard to its effects on input-output-type tables and input-output quotes. Links between National Accounts and basic statistics, user demands and international guidelines are examined. Net recording is in general to be preferred. An exception has to be made when processing amounts to a complete production process, e.g. oil refineries in the Netherlands.

**NA/37 A proposal for a SAM which fits into the next System of National Accounts**, Keuning, Steven J. (1990).
This paper shows that all flow accounts which may become part of the next System of National Accounts can be embedded easily in a Social Accounting Matrix (SAM). In fact, for many purposes a SAM format may be preferred to the traditional T-accounts for the institutional sectors, since it allows for more flexibility in selecting relevant classifications and valuation principles.

**NA/38 Net versus gross National Income**, Bos, Frits (1990).
In practice, gross figures of Domestic Product, National Product and National Income are most often preferred to net figures. In this paper, this practice is challenged. Conceptual issues and the reliability of capital consumption estimates are discussed.

**NA/39 Concealed interest income of households in the Netherlands; 1977, 1979 and 1981**, Kazemier, Brugt (1990).
The major problem in estimating the size of hidden income is that total income, reported plus unreported, is unknown. However, this is not the case with total interest income of households in the Netherlands. This makes it possible to estimate at least the order of magnitude of this part of hidden income. In this paper it will be shown that in 1977, 1979 and 1981 almost 50% of total interest received by households was concealed.

**NA/40 Who came off worst: Structural change of Dutch value added and employ-- ment during the interwar period**, Den Bakker, Gert P. and Jan de Gijt (1990).
In this paper new data for the interwar period are presented. The distribution of value added over industries and a break-down of value added into components is given. Employment by industry is estimated as well. Moreover, structural changes during the interwar years and in the more recent past are juxtaposed.

**NA/41 The supply of hidden labour in the Netherlands: a model**, Kazemier, Brugt and Rob van Eck (1990).
This paper presents a model of the supply of hidden labour in the Netherlands. Model simulations show that the supply of hidden labour is not very sensitive to cyclical fluctuations. A tax exempt of 1500 guilders for second jobs and a higher probability of detection, however, may substantially decrease the magnitude of the hidden labour market.

**NA/42 Benefits from productivity growth and the distribution of income**, Keuning, Steven J. (1990).
This paper contains a discussion on the measurement of multifactor productivity and sketches a framework for analyzing the relation between productivity changes and changes in the average factor remuneration rate by industry. Subsequently, the effects on the average wage rate by labour category and the household primary income distribution are studied.

**NA/43 Valuation principles in supply and use tables and in the sectoral accounts**, Keuning, Steven J. (1991).
In many instances, the valuation of transactions in goods and services in the national accounts poses a problem. The main reason is that the price paid by the purchaser deviates from the price received by the producers. The paper discusses these problems and demonstrates that different valuations should be used in the supply and use tables and in the sectoral accounts.

**NA/44 The choice of index number formulae and weights in the National Accounts. A sensitivity analysis based on macro-economic data for the interwar period**, Bakker, Gert P. den (1991).
The sensitivity of growth estimates to variations in index number formulae and weighting procedures is discussed. The calculations concern the macro-economic variables for the interwar period in the Netherlands. It appears, that the use of different formulae and weights yields large differences in growth rates. Comparisons of Gross Domestic Product growth rates among countries are presently obscured by the use of different deflation methods. There exists an urgent need for standardization of deflation methods at the international level.

**NA/45 Volume measurement of government output in the Netherlands; some alternatives**, Kazemier, Brugt (1991).
This paper discusses three alternative methods for the measurement of the production volume of government. All methods yield almost similar results: the average annual increase in the last two decades of government labour productivity is about 0.7 percent per full-time worker equivalent. The implementation of either one of these methods would have led to circa 0.1 percentage points higher estimates of economic growth in the Netherlands.

**NA/46 An environmental module and the complete system of national accounts**, Boo, Abram J. De, Peter R. Bosch, Cor N. Gorter and Steven J. Keuning (1991).
A linkage between environmental data and the National Accounts is often limited to the production accounts. This paper argues that the consequences of economic actions on ecosystems and vice versa should be considered in terms of the complete System of National Accounts (SNA). One should begin with relating volume flows of environmental matter to the standard economic accounts. For this purpose, a so-called National Accounting Matrix including Environmental Accounts (NAMEA) is proposed. This is illustrated with an example.

**NA/47 Deregulation and economic statistics: Europe 1992**, Bos, Frits (1992).
The consequences of deregulation for economic statistics are discussed with a view to Europe 1992. In particular, the effects of the introduction of the Intrastat-system for statistics on international trade are investigated. It is argued that if the Statistical Offices of the EC-countries do not respond adequately, Europe 1992 will lead to a deterioration of economic statistics: they will become less reliable, less cost effective and less balanced.

**NA/48 The history of national accounting**, Bos, Frits (1992).
At present, the national accounts in most countries are compiled on the basis of concepts and classifications recommended in the 1968-United Nations guidelines. In this paper, we trace the historical roots of these guidelines (e.g. the work by King, Petty, Kuznets, Keynes, Leontief, Frisch, Tinbergen and Stone), compare the subsequent guidelines and discuss also alternative accounting systems like extended accounts and SAMs.

**NA/49 Quality assessment of macroeconomic figures: The Dutch Quarterly Flash**, Reininga, Ted, Gerrit Zijlmans and Ron Janssen (1992).
Since 1989-IV, the Dutch Central Bureau of Statistics has made preliminary estimates of quarterly macroeconomic figures at about 8 weeks after the end of the reference quarter. Since 1991-II, a preliminary or "Flash" estimate of GDP has been published. The decision to do so was based on a study comparing the Flash estimates and the regular Quarterly Accounts figures, which have a 17-week delay. This paper reports on a similar study with figures through 1991-III.

**NA/50 Quality improvement of the Dutch Quarterly Flash: A Time Series Analysis of some Service Industries**, Reininga, Ted and Gerrit Zijlmans (1992).
The Dutch Quarterly Flash (QF) is, just like the regular Quarterly Accounts (QA), a fully integrated statistic based on a quarterly updated input-output table. Not all short term statistics used to update the QA's IO-table are timely enough to be of use for the QF, so other sources have to be found or forecasts have to be made. In large parts of the service industry the latter is the only possibility. This paper reports on the use of econometric techniques (viz. series decomposition and ARIMA modelling) to improve the quality of the forecasts in five parts of the service industry.

**NA/51 A Research and Development Module supplementing the National Accounts**, Bos, Frits, Hugo Hollanders and Steven Keuning (1992).
This paper presents a national accounts framework fully tailored to a description of the role of Research and Development (R&D) in the national economy. The framework facilitates to draw macro-economic conclusions from all kinds of data on R&D (also micro-data and qualitative information). Figures presented in this way can serve as a data base for modelling the role of R&D in the national economy.

**NA/52 The allocation of time in the Netherlands in the context of the SNA; a module**, Kazemier, Brugt and Jeanet Exel (1992).
This paper presents a module on informal production, supplementing the National Accounts. Its purpose is to incorporate informal production into the concepts of the SNA. The relation between formal and informal production is shown in the framework of a Social Accounting Matrix (SAM). To avoid a controversial valuation of informal production, the module constists of two SAMs. One expressed in actual prices with informal labour valued zero, and one which expresses the embedded informal labour input measured in terms of hours worked.

**NA/53 National Accounts and the environment: the case for a system's approach**, Keuning, Steven J. (1992).
The present set of main economic indicators should be extended with one or a few indicators on the state of the environment. This paper lists various reasons why a so-called Green Domestic Product is not suitable for this purpose. Instead, a system's approach should be followed. A National Accounting Matrix including Environmental Accounts (NAMEA) is presented and the way to derive one or more separate indicators on the environment from this information system is outlined.

**NA/54 How to treat multi-regional units and the extra-territorial region in the Regional Accounts?**, De Vet, Bas (1992).
This paper discusses the regionalization of production and capital formation by multi-regional kind-of-activity units. It also examines the circumstances in which a unit may be said to have a local kind-of-activity unit in the extra-territorial region and what should be attributed to this "region".

**NA/55 A historical Social Accounting Matrix for the Netherlands (1938)**, Den Bakker, Gert P., Jan de Gijt and Steven J. Keuning (1992).
This paper presents a Social Accounting Matrix (SAM) for the Netherlands in 1938, including related, non-monetary tables on demographic characteristics, employment, etc. The distribution of income and expenditure among household subgroups in the 1938 SAM is compared with concomittant data for 1987.

**NA/56 Origin and development of the Dutch National Accounts**, Den Bakker, Gert P. (1992).
This paper describes the history of national accounting in the Netherlands. After two early estimates in the beginning of the nineteenth century, modern national accounting started in the 1930s on behalf of the Tinbergen model for the Dutch economy. The development spurred up after World War II to provide data to the government for economic planning purposes. In the 1980s, the development was towards a flexible and institutional approach.

**NA/57 Compiling Dutch Gross National Product (GNP); summary report on the final estimates after the revision in 1992**, Bos, Frits (1992).
This summary report describes the sources and methods used for compiling the final estimate of Dutch Gross National Product after the revision of the Dutch National Accounts in 1992. Attention is focused on the estimation procedures for 1988. A more extensive report is also available.

**NA/58 The 1987 revision of the Netherlands' National Accounts,** Van den Bos, C and P.G. Al (1994).
The 1987 revision that was completed in 1992 has improved the Dutch National Accounts in three ways. First, new and other data sources have been used, like Production statistics of service industries, the Budget Survey and Statistics on fixed capital formation. Secondly, the integration process has been improved by the use of detailed make- and use-tables instead of more aggregate input-output tables. Thirdly, several changes in bookkeeping conventions have been introduced, like a net instead of a gross registration of processing to order.

**NA/59 A National Accounting Matrix for the Netherlands**, Keuning, Steven and Jan de Gijt (1992).
Currently, the national accounts typically use two formats for presentation: matrices for the Input-Output tables and T-accounts for the transactions of institutional sectors. This paper demonstrates that presently available national accounts can easily be transformed into a National Accounting Matrix (NAM). This may improve both the transparency and analytic usefulness of the complete set of accounts.

**NA/60 Integrated indicators in a National Accounting Matrix including environmental accounts (NAMEA); an application to the Netherlands**, De Haan, Mark, Steven Keuning and Peter Bosch (1993).
In this paper, environmental indicators are integrated into a National Accounting Matrix including Environmental Accounts (NAMEA) and are put on a par with the major aggregates in the national accounts, like National Income. The environmental indicators reflect the goals of the environmental policy of the Dutch government. Concrete figures are presented for 1989. The NAMEA is optimally suited as a data base for modelling the interaction between the national economy and the environment.

**NA/61 Standard national accounting concepts, economic theory and data compilation issues; on constancy and change in the United Nations-Manuals on national accounting (1947, 1953, 1968 and 1993)**, Bos, Frits (1993).
In this paper, the four successive guidelines of the United Nations on national accounting are discussed in view of economic theory (Keynesian analysis, welfare, Hicksian income, input-output analysis, etc.) and data compilation issues (e.g. the link with concepts in administrative data sources). The new guidelines of the EC should complement those of the UN and be simpler and more cost-efficient. It should define a balanced set of operational concepts and tables that is attainable for most EC countries within 5 years.

**NA/62 Revision of the 1987 Dutch agricultural accounts,** Pauli, Peter and Nico van Stokrom (1994).
During the recent revision of the Dutch national accounts, new agricultural accounts have been compiled for the Netherlands. This paper presents the major methodological and practical improvements and results for 1987, the base year for this revision. In addition, this paper demonstrates that a linkage can be established between the E.C. agricultural accounting system and the agricultural part of the standard national accounts.

**NA/63 Implementing the revised SNA in the Dutch National Accounts,** Bos, Frits (1993).
This paper discusses the implementation of the new United Nations guidelines on national accounting (SNA) in the Netherlands. The changes in basic concepts and classifications in the SNA will be implemented during the forthcoming revision. The changes in scope will be introduced gradually. Important changes scheduled for the near future are the incorporation of balance sheets, an environmental module and a Social Accounting Matrix.

**NA/64 Damage and insurance compensations in the SNA, the business accounts and the Dutch national accounts,** Baris, Willem (1993).
This paper describes the recording of damages to inventories and produced fixed assets in general, including damages as a result of legal product liability and of the liability for damage to the environment. In this regard, the 1993 System of National Accounts and the practice of business accounting are compared with the Dutch national accounts.

**NA/65 Analyzing economic growth: a description of the basic data available for the Netherlands and an application,** Van Leeuwen, George, Hendrie van der Hoeven and Gerrit Zijlmans (1994).
This paper describes the STAN project of the OECD and the Dutch national accounts data supplied to the STAN database, which is designed for a structural analysis of the role of technology in economic performance. Following an OECD analysis for other industrial countries, the importance of international trade for a small open economy such as the Netherlands is investigated. The STAN database is also available on floppy disk at the costs of DFL. 25, an can be ordered by returning the order form below (Please mention: STAN floppy disk).

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