WORKING PAPER

ECONOMIC ACCOUNTS FOR AGRICULTURE IN THE REPUBLIC OF SERBIA, 2007-2016

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Economic accounts for agriculture in the Republic of Serbia, 2007–2016

ABBREVIATIONS

GDP	Gross domestic product
GVA	Gross value added
EAA	Economic accounts for agriculture
ESA	European system of accounts
CAP	Common agricultural policy
IAS	Institute for application of science in agriculture
LKAU	Local kind-of-activity unit
MAFWM	Ministry of Agriculture, Forestry and Water Management
MF	Ministry of finance
VAT	Value added tax
CCIS	Chamber of commerce and industry of Serbia
SORS	Statistical Office of the Republic of Serbia
SNA	System of national accounts
DAP	Directorate for agrarian payments

SYMBOLS

−	=	Category not applicable
...	=	Data not available
0	=	Data value under 0.5 of measurement unit
Ø	=	Average
( )	=	Incomplete or insufficiently estimated data
*	=	Corrected data
↑←	=	Covered by data in arrow direction

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INTRODUCTORY NOTES

Economic accounts for agriculture (EAA) make an integral part of the international statistical system and are created primarily for the purpose of monitoring and evaluating the effects of an agricultural policy. As a part of the Serbian statistical system, they are expected to provide a basis for analysing the production processes of the agricultural sector and the primary income generated by these activities in the country. They also ensure international comparability of the results, as well as comparisons with the results of other economic activities in the national economy.

Since economic accounts for agriculture are an integral part of the system of national accounts, they provide specific data on economic activities in agriculture, which could not be visible in the system of national accounts as they are either indirectly used in the calculations or form an integral part of the categories presented on the higher level. In addition, these accounts are regarded as complementary to agricultural statistics, in a manner that agricultural variables are consistent with the concepts and definitions of national accounts. Economic accounts for agriculture are intended to ensure a conceptual framework for integrating agricultural statistics and its economic implications, which means, first and foremost, contribution of agriculture to the economy.

The methodological frame for calculating economic accounts for agriculture ensured ESA 2010 – European System of National and Regional Accounts, Commission Regulation (EC) No 138/2004 of the European Parliament and of the Council of 5 December 2003 on the economic accounts for agriculture in the Community, Commission Regulation (EC) No 306/2005 of 24 February 2005 amending Annex I, Commission Regulation (EC) No 909/2006 of 20 June 2006 amending Annexes I and II, as well as the Manual on Economic Accounts for Agriculture and Forestry, Rev.1.1.

The presented results of calculations of the economic accounts for agriculture in the Republic of Serbia cover the period from 2007 to 2016 and relate to the elements of production account and factor income in agriculture. The results are offered at current and constant prices. Also provided are the methodological principles underlying the EAA compilation with a detailed description of calculation methods, data sources and main features

The working document was prepared in the SORS National Accounts, Prices and Agriculture Department (Satellite Accounts Division).

Starting from 1999 the Statistical Office of the Republic of Serbia has not at disposal and may not provide available certain data relative to AP Kosovo and Metohija and therefore these data are not included in the coverage for the Republic of Serbia (total).

I. METHODOLOGICAL BACKGROUNDS OF ECONOMIC ACCOUNTS FOR AGRICULTURE

1.1. Coverage and observation units

Economic accounts for agriculture are an integral part of the European system of accounts (ESA), and therefore for their compilation use is made of (4-digit level nomenclature of activities) the General Classification of Economic activities - NACE Rev. 2 (Regulation of the European Parliament and of the Council No. 1893/2006), which came into force on 1 January 2008.

Accounts by industry describe, in more detail, the level of production process and the use of goods and services by activity. The industry consists of a group of units of homogeneous agricultural production (local KAUs) engaged in the same or similar type of activity. A series of accounts for an industry is limited to the production and generation of income account. These accounts are essentially similar to the corresponding accounts for institutional sectors (and units). However, output and intermediate consumption of the activity are broken by products in the resource and use table.

Since the purpose of economic accounts for agriculture is to measure, describe and analyse the generation of income from agricultural economic activity (which in the Member States is almost exclusively a commercial activity), units which produce solely for own final consumption (e.g. kitchen gardens and private livestock rearing) are excluded.

Economic accounts for agriculture cover:

– family agricultural holdings having at least 0.5 hectares of agricultural land (area) on which they perform agricultural production;

– family agricultural holdings having less than 0.5 hectares of agricultural land, which they utilize for crop farming, livestock breeding, fruit growing, vineyards, vegetable production, flower growing (glass and plastic protective covers), and for other forms of practices of agricultural production, intended for marketing, as well as fish farming, mushroom growing, snail farming, bee-keeping, etc.;

– enterprises, farm cooperatives, unincorporated enterprises and other forms of organisation with the status of legal entity that are registered as mainly dealing with agricultural production, and

– enterprises, institutions and other legal entities registered for another activity, having organised branches or other organisational units in which their agricultural production is carried out.

Inseparable non-agricultural secondary activities

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

Inseparable non-agricultural secondary activities of local agricultural KAUs are defined as activities closely linked to agricultural production for which information on any production, intermediate consumption, compensation of employees, labor input and the gross fixed capital formation cannot be separated from the information on the main agricultural activity during the period of statistical observation.

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

– activities which represent a continuation of agricultural activity and which use agricultural products (processing of agricultural products: milk into butter, cream, yoghurts and other dairy products, fruit and vegetables into fruit juices, brandy, jams etc., grapes into dried grapes and wine, processed meat products, processing of other agricultural products, etc.

– activities involving the agricultural holding and its means of agricultural production, i.e. workforce, buildings, machinery, and equipment (agricultural services, rural tourism, etc.).

The agricultural secondary activities of non-agricultural units are negligible and are recorded as zero by convention. Agricultural production carried out by a non-agricultural unit is in fact considered to be always separable.

1.2. Main EAA elements: Definitions

Output of agricultural industry is equal to the sum of the value of crop production, animal production, agricultural services and value of production from inseparable non-agricultural secondary activities on the holdings.

Crop output includes production of cereals, industrial crops, forage crops, vegetables and horticultural products, fruit and other agricultural products.

Animal output includes production or rearing (natural growth) of animals, poultry and other animals and animal products.

Production of animal products includes production of milk, eggs and other agricultural products.

Agricultural goods and services output is the value of production of all agricultural goods (crop and animal production) and agricultural services.

Inseparable non-agricultural secondary activity is the activity that cannot be separated from the main activity and is carried out on the agricultural holding (processing of milk, grapes, fruits and vegetables, and other inseparable activities: other goods and services).

1.1. Scope of output of agricultural industry according to EAA

Output of agricultural "industry"				
Agricultural output				Non-agricultural secondary activities (inseparable)
Agricultural goods output			Agricultural services output	
Crop output	Animal production			
	Animals	Animal products		
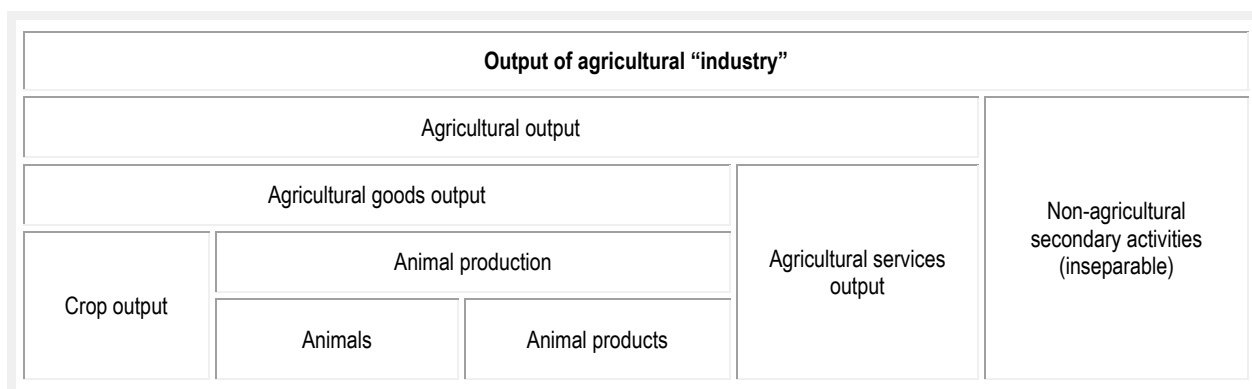
The reference period is the calendar year.

In the frame of economic accounts for agriculture, agricultural production is valued at basic prices. Hence, subsidies on products and services are included, whereas taxes on products and services are excluded.

Intermediate consumption represents the value of all goods and services used as inputs in the agricultural production process. It is valued at the purchaser prices.

Gross value added at basic prices is equal to the difference between the value of agricultural production (output of the agricultural „industry") at basic prices and intermediate consumption at purchaser prices.

Consumption of fixed capital represents the amount of fixed capital used up in the production process during the period under consideration as a result of normal wear and tear and foreseeable obsolescence.

Net value added at basic prices is equal to the difference between gross value added at basic prices and consumption of fixed capital.

Other subsidies on production are current unrequited payments (other than subsidies on products that are included in the calculation of basic prices in the valuation of output and as such are not presented in the generation of income account) mainly intended to cover the part of production costs or support for changes in agricultural production methods.

Factor income is equal to the net value added less taxes on production, plus subsidies on production.

1.2. Generation of value added and primary income in agricultural industry

Composition of total output value	Output of agricultural "industry"					
	Intra-unit consumption	Processing by producers (as separable activity)	Own final consumption	Sales	Own-account produced fixed capital goods	Change in stocks
				Subsidies on products less taxes on products		
Other subsidies on production	Output of agricultural "industry"					
	Gross value added at basic prices				Total intermediate consumption	
	Net value added at basic prices			Fixed capital consumption		
	Factor income		Other taxes on production			

1.3. Methods of calculation

1.3.1.   Output

The result of "production" process is the "output", which is recorded as a resource, whereas intermediate consumption as a use in the production account.

One of the main characteristics of the economic accounts for agriculture is the adoption of the "quantity x price" formula when measuring the output of the large majority of agricultural products.

In economic accounts for agriculture, production is valued at basic prices.

The basic price is the price receivable by the producers from the purchaser for a unit of goods or services produced as output minus any tax payable on that unit as a consequence of its production or sale, i.e. taxes on products, plus any subsidy receivable on that unit, as a result of its production or sale, i.e. subsidies on products. The basic price excludes any transport charges invoiced separately by the producer.

$$\text{Basic price} = \text{Amount received for a unit of goods or services} - \text{Taxes on products} + \text{Subsidies on products}$$

1.3. Output of the agricultural "industry", resources and uses

Resources	Uses	Agricultural output
Gross output	**Sales** (total, excluding trade in animals between agricultural holdings)	X
	Change in stocks (with producers)	X
- Losses	**Own-account produced fixed capital goods** (productive animals, plantations yielding repeat products)	X
	Own final consumption (of agricultural products)	X
= Usable output	**Processing by producers (of agricultural products, separable activities)**	X
	Intra-unit consumption:	
	■ for the same activity (seeds, milk for livestock feed, wine grapes, olives for olive oil, hatching eggs)	
	■ for a separate activity:	
	■ crop products used in animal feed (cereals, oil seeds, fodder crops, marketable or not, etc.)	X
	■ animal by-products used in crop production (slurry, manure)	

1.3.1.1. Intermediate consumption

Intermediate consumption represents the value of all goods and services used as inputs in the production process, excluding fixed assets whose consumption is recorded as fixed capital consumption. The goods and services concerned are either transformed or used up in the production process.

Products used for intermediate consumption are presented at the time when they enter into the production process and are valued at the purchaser prices at the time of purchase.

The purchaser price is the price the purchaser actually pays for the products, at the time of purchase, which includes all taxes less subsidies on products (except deductible VAT), as well as transport charges paid separately by the purchaser to take delivery at required time and place.

$$\text{Purchaser price} = \text{Amount paid for a unit of goods or services} + \text{Taxes on products} - \text{Deductible VAT} - \text{Subsidies on products} + \text{Transport costs}$$

Taxes on products are compulsory, unrequited payments, in cash or in kind, which are levied by general government and are payable per unit of goods or services produced or transacted. The obligation arises from the production, sale, import, export, transfer and other forms of delivery of goods and services. They may be equivalent to a monetary amount determined per unit of goods or services or calculated "ad valorem" as a fixed percentage of the unit price or value of goods or services. In this category included are value added tax, excise tax, other taxes on products and import duties.

Subsidies on products are subsidies payable per unit of goods or services produced (l, kg, etc.) by agricultural producers.

The following table shows the elements of intermediate consumption, according to the methodology of economic accounts for agriculture.

1.4. Items of intermediate consumption according to EAA

Intermediate consumption
Seeds and planting stocks
Seeds and planting stock - intra-unit consumption
Seeds and planting stock - purchased outside the agriculture
Energy, lubricants
Fertilisers and soil improvers
Plant protection products and pesticides
Veterinary expenses
Animal feedingstuffs
Animal feedingstuffs - intra-unit consumption
Animal feedingstuffs - purchased outside the agriculture
Maintenance of materials
Maintenance of buildings
Agricultural services
Other goods and services

1.3.1.2. Gross value added (GVA)

The balancing item of the production account is gross value added, one of the most important balancing items in economic accounts for agriculture. Since the output is valued at basic prices and intermediate consumption at purchaser prices, the gross value added contains subsidies on products less taxes on products.

1.3.1.3. Net value added

Gross value added less consumption of fixed capital represents the net value added.

Net value added of the industry measures the value created by all agricultural LKAUs (local units kind of activity), after the consumption of fixed capital.

1.3.1.4. Subsidies

Subsidies are current unrequited payments that general governments (including non-resident government units) make to resident producers, with objective of influencing the level of agricultural production, the prices and value of goods and services produced/rendered by the producers, sale or import, production conditions, etc.

Subsidies are classified into:

– subsidies on products (export subsidies and other subsidies on products), and

– other subsidies on production.

Subsidies on products are subsidies payable per unit of goods or services produced (l, kg, etc.) by agricultural producers. The amount of subsidies on products can be specified as (i) a specific amount of money per unit of quantity of goods or services, (ii) a specified percentage of the price per unit, i.e. calculated "ad valorem", (iii) the difference between a specified target price and the market price paid by buyer, and (iv) export support.

Subsidies on products usually become payable when goods are produced, sold or exported.

By convention, subsidies on products can pertain to market output or to output for own final use (ESA 2010).

Other subsidies on production are paid to resident production units as a result of their production activities. These payments relate mainly to the assumption of production costs (e.g. input subsidies for crop production, such as fertilizers, fuel, seed and planting material, etc.) or support for changes in the method of production.

Since output is valued at basic prices, only other subsidies on production are recorded in the generation of income account (as negative uses).

1.3.1.5. Net value added at factor costs (Factor income)

Net value added at factor costs is defined as net value added at basic prices less other taxes on production plus other subsidies on production. This indicator measures the remuneration of all factors of production (land, capital and labour) and can be termed "factor income", as it represents the whole value generated by a unit engaged in production activity.

1.5. Factor income

Production account	
P-1	**Output**
P-2	- Intermediate consumption
K-1	- Consumption of fixed capital
B.1n	= Net value added
D.29	- Other taxes on production
D.39	+ Other subsidies on production
	= Net value added at factor costs (Factor income)

1.3.1.6. Discrepancy between EAA industry and agricultural branch of the central framework of national accounts

EAA agricultural industry differs to some extent from the branch as defined for national accounts purposes. The differences relate to the definition of both characteristic activities and units. They can be summarised as follows[1]:

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

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[1] EUROSTAT (2000): *Manual on the economic accounts for Agriculture and Forestry* EAA/EAF97 (Rev.1.1), Office for Official Publications of the European Communities, Luxembourg.

II. CALCULATION OF AGRICULTURAL GROSS VALUE ADDED AT CONSTANT PRICES

Calculation of agricultural gross value added at constant prices is based on the principles of the System of national accounts 2008 – SNA 2008 and the European system of accounts 2010 – ESA 2010, as well as on international standards and recommendations covered by the Handbook on Price and Volume Measures in National Accounts.

For each aggregate of goods and services presented in the accounts, price and quantity measures have to be structured so that:

Value index = Price index x Volume index

This means that each and every change in the value of a given flow must be attributed to either a price change or a change in volume or a combination of the two.

The systematic breakdown of the changes in current value into the components "change in price" and "changes in volume" is restricted to flows representing transactions of goods and services and to the elements concerned in the valuation of these transactions (production, intermediate consumption, consumption of fixed capital, gross value added, net value added, GFCF, change in stocks, taxes and subsidies on products).

In accordance with the recommendations of ESA 2010, in EAA, changes in volume are measured using Laspeyres-type indices and changes in price are measured using Paasche-type indices.

Laspeyers volume index:

$$L_{(q)} = \frac{\sum p_0 q_n}{\sum p_0 q_0} = \frac{\sum p_o q_o \frac{q_n}{q_o}}{\sum p_0 q_0} = \frac{\sum V_0 \frac{q_n}{q_0}}{\sum V_0}$$

Paasche price index:

$$P_{(p)} = \frac{\sum q_n p_n}{\sum q_n p_n} = \frac{\sum p_0 q_n \frac{p_n}{p_0}}{\sum p_o q_n}$$

For each elementary product,

- p_0 : represents the price recorded in the base year 0,
- p_n : represents the price recorded in year n,
- q_0 : represents the quantity recorded in the base year 0,
- q_n : represents the quantity recorded in year n,
- Vo : represents the value recorded in the base year 0 ($V_o = p_0 q_o$).

Changes in volume are measured using Laspeyres-type indices: changes in the quantities of elementary series are therefore weighted by the value in the base year. Changes in price are measured using Paasche-type indices: changes in the prices of elementary series are therefore weighted by the value in the current year at the base year prices.

The term "base year" refers to the year from which the prices are used to compile the weighting scheme.

The calculation of GVA for agriculture at the previous year prices means that every previous year is treated as the base year and the weights are changed successively by years. This approach guarantees that weights are relatively up-to-date and helps avoiding problems, and therefore are linked to weighting products that are no longer produced and new products that have emerged. It is for this reason that the EAA measures changes in volume with using the weightings for the preceding year.

Value added constitutes the balancing item of the production account. As such, it is not possible to split value added directly into a price component and a volume component. The theoretically correct method for calculating value added at constant prices is to carry out "double deflation". Therefore, Gross value added in the prices of the preceding year is defined as the difference between the output measured at the prices of the preceding year and intermediate consumption measured at the prices of the preceding year.

According to this calculation method, only two consecutive years expressed at the same prices are comparable. The obtained data series calculated at the previous year prices cannot be used to calculate the rate of real growth, which is due the fact that the data are not comparable (each year is valued at previous year prices). In order to obtain comparable data series for calculating the growth rate it is necessary to make it a continuous procedure, which is achieved by chain-liking of the data to a selected reference year. The reference year is the year that is used for the presentation of the data series at constant prices. In a series of index numbers it is the year that has the value of 100. One of the main features of chain-linking is that by changing the reference year, the absolute values are changing, but growth rates remain the same. According to Eurostat recommendations, at this point 2010 is the reference year.

Breakdown of taxes and subsidies on products into volume and price component

The volume index of subsidies (or taxes) on product is identical to the volume index of the output at the producer prices. In this case, the volume index of the output is the same whether expressed at producer prices or at basic prices.

III. CALCULATION OF ECONOMIC ACCOUNTS FOR AGRICULTURE IN THE REPUBLIC OF SERBIA

3.1. Main features of the calculation

Calculation of the economic accounts for agriculture in the Republic of Serbia was carried out for the period 2007-2016 and is in accordance with the concepts and rules stipulated by the Regulation (EC) No 138/2004 of the European Parliament and of the Council of 5 December 2003 on the economic accounts for agriculture in the Community with annexes. The general methodological framework comprises the System of National Accounts 2008 – SNA 2008 and the European System of Accounts 2010 – ESA 2010.

In the current statistical system of the Republic of Serbia no special surveys are implemented to provide direct data in value terms for the calculation of items and elements of the economic accounts for agriculture; however, the indirect data from the regular SORS statistical surveys envisaged to measure different areas of the economy (agricultural production, industry, prices, and price indices etc.) are used for this purpose. Also, administrative data are used; in the first place, data on subsidies in agriculture (data from the Ministry of Agriculture, Forestry and Water Management, the Directorate for agrarian payments and the Ministry of finance).

The calculation of the economic accounts for agriculture covers the total agricultural production. Hence, both family holdings and legal entities, and unincorporated enterprises in the Republic of Serbia are covered.

The main features of the calculation can be summarised as follows:

– It is performed in accordance with the General Industrial Classification of Economic Activities within the European Communities, Revision 2, or NACE, Rev. 2, for agricultural industry,

– At current and constant prices,

– "Double deflation" method is used for calculation at constant prices, and

– Reference year for presentation of the time series at constant prices is 2010.

3.2. Data sources

Given the multi-source character of the EAA and the fact that it represents a kind of statistics of synthesis, a wide range of data collection techniques can be used.

Therefore, in the Republic of Serbia, apart from analytical procedures imposed on primary statistics, alternative indirect methods are needed to be applied for some EAA items such as intra-unit consumption, intermediate consumption, consumption of fixed capital, and other, for which no direct statistical data are available. The indirect methods rely upon the assumptions and developed models with input coefficients based on respective expertise and technical standards.

In this process a large number of agricultural statistical data is available, both compiled by the SORS and obtained from external sources. They can be split into two main groups:

- Regular statistical surveys, and

- Administrative and other data sources.

The following table shows the available data sources, their EAA relevance with corresponding input variables for the calculations, including the institutions in charge of data provision.

3.1. EAA elements and the most relevant data sources

Data source	EAA item	Input variable for the EAA calculation	Institution in charge
Agricultural Statistics			
Crop production statistics	Output	Sown areas, harvested areas, average yield, total production	SORS
Survey on agriculture production -livestock production	Output, Gross fixed capital formation in livestock	Number of livestock by species and categories, incl. the number of beehives, livestock turnover by species, average weight per head, production of milk (from cows, sheep and goats), eggs, honey and wool	SORS
Survey on agriculture production -crop production	Output, Intermediate consumption, Gross fixed capital formation in livestock	Harvested areas, average yield, total production, intra-unit consumption, production costs by elements	SORS
Annual survey on legal entities dealing with agricultural production	Output, Intermediate consumption	Balance of wheat and maize for legal entities, production costs by elements	SORS
Slaughtering statistics	Output, Gross fixed capital formation in livestock	Number of heads slaughtered and the average weight at slaughter (only for legal enitities)	SORS
Monthly reports on purchase and sale of agricultural products	Output, Intermediate consumption	Monthly data on purchase and sale of agricultural products (quantities and values)	SORS
Agricultural price statistics	Output, Intermediate consumption, volume measures	Output absolute prices and indices, Input absolute prices and indices	SORS
Results of research projects, bio-technical coefficients, experts' estimates	Output, Intermediate consumption, Gross fixed capital formation in livestock, *"missing prices"*	Bio-technical coefficients such as seed consumption per ha, live/carcass weight coefficient, calving percentage, etc.	Faculty of Agriculture, IAS, CCIS
Other statistics and data sources			
External trade statistics	Output, Intermediate consumption	Export and import (quantities and values)	SORS
Industry statistics	Output, Intermediate consumption	Industry production (quantities and values)	SORS
Producer price indices (PPI)	Intermediate consumption at constant prices	Producer price indices on product level	SORS
Consumer price index (CPI)	Intermediate consumption at constant prices	Consumer price indices on product level	SORS
Data on compensatory payments in agriculture	Basic prices, Factor Income	Subsidies on production, other subsidies on production, capital transfers	MAFWM, DAP and MF

3.3. Methods of calculation

Calculation of crop output relies upon the data of agricultural production statistics, such as the data on produced (harvested) quantities of crops. These data are obtained on the basis of the estimated area and the average yields for each crop provided by agricultural production statistics. When it comes to calculating animal production, use is made of data on the number, weights, balance and slaughtering of animals and poultry, as well as data on the production of animal products (milk, eggs, wool, etc.).

For valuation of agricultural production (output), use is made of average producer prices of agricultural products.

Producer prices of agricultural products are calculated on monthly and annual basis, based on sales data on agricultural products from own production of legal entities engaged in agricultural production (sales prices) and data on purchases of agricultural products from family holdings, performed by the authorized units (purchaser prices).

Calculation of the output of inseparable non-agricultural secondary activities includes the following activities:

- Processing of cereals into flours, shredded wheat, etc.

- Processing of fruits and vegetables into juices, brandy, marmalade, etc.

- Processing of grapes into dried grapes, wine, etc.

- Processing of milk into cheese, butter, yoghurt and other dairy products

- Processing of meat, and

- Agricultural services.

Intermediate consumption refers to all goods and services used as inputs in the production process, such as seeds and planting material, energy and lubricants, fertilizers and other means for improving soil quality, plant protection products, veterinary expenses, animal feed, maintenance of materials and equipment, maintenance of buildings, agricultural services and other goods and services (costs of renting buildings, equipment and machines without personnel to carry out agricultural production, agricultural extension services fees, subscriptions, fees for membership in professional associations, chambers of commerce, purchases of small tools, working clothing, spare parts and durable equipment of low value, i.e. less than 500 EUR at 1995 prices or with a normal service life of less than one year, etc.).

The data required for the calculation of the elements of intermediate consumption are obtained from a number of regular surveys conducted by the Statistical Office of the Republic of Serbia, such as the Annual survey on family holdings, Annual report on agricultural enterprises and cooperatives, Monthly reports on sale and purchase of agricultural products (seeds and planting material), Household budget survey, Annual survey on industrial production, etc. However, in assessing the consumption of certain elements of intermediate consumption, in addition to the aforementioned sources, the data of external trade statistics, as well as expert estimates of standard consumption of different inputs in agriculture (fertilizers, seeds, plant protection products, fuel and other fuels, etc.) are used.

Goods used for intermediate consumption are valued at purchaser prices at the time they enter into the production process.

As the balancing item of output and intermediate consumption, the gross value added of agriculture is obtained. Subtracting the amount of the fixed capital depreciation results in the net value added of agriculture. At this point, the estimates of depreciation in agriculture in the Republic of Serbia are based on the expert correction coefficients that are applied to the output of agriculture.

The calculation of the subsidies in agriculture was conducted so as to allow their classification according to the requirements of the methodology on economic accounts for agriculture. Since the method of monitoring and recording of projected and paid subsidies in agriculture by the Agency for Payments in Agriculture and the Ministry of Agriculture and Environmental Protection is based on a completely different classification, it is necessary to examine in detail the contents of each of the support measures in agriculture and then execute its reclassification according to the requirements of the EAA (division into subsidies on products and other subsidies on production). For this purpose the OECD methodology for the assessment of support to agriculture was used[2].

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[2] OECD (2008): OECD's Producer Support Estimate and Related Indicators of Agricultural Support: Concepts, Calculations, Interpretation and Use (The PSE Manual), OECD Trade and Agriculture Directorate, Paris.

IV. EAA CALCULATION RESULTS FOR THE REPUBLIC OF SERBIA: QUANTITATIVE OVERVIEW

The presented results of the calculation of economic accounts for agriculture in the Republic of Serbia refer to the period from 2007 to 2016.

In the period observed achieved was a cumulative growth of GVA in agriculture of 25.4%, while the average annual growth rate equalled 2.5%. After achieving the real GVA growth of 9.9% in 2008, there was a slowdown in growth in 2009 (6.7%), and the fall in 2010 (-5.1%), followed by a period of growth of 4.4% in 2011. The largest decline was recorded in 2012 (-28.4%), while in 2013 a significant growth of 30.2% was recorded. In 2016, recorded was a growth of agricultural GVA of 10.4%.

Graph 4.1. Real growth rate of GVA in agriculture, 2008–2016, %
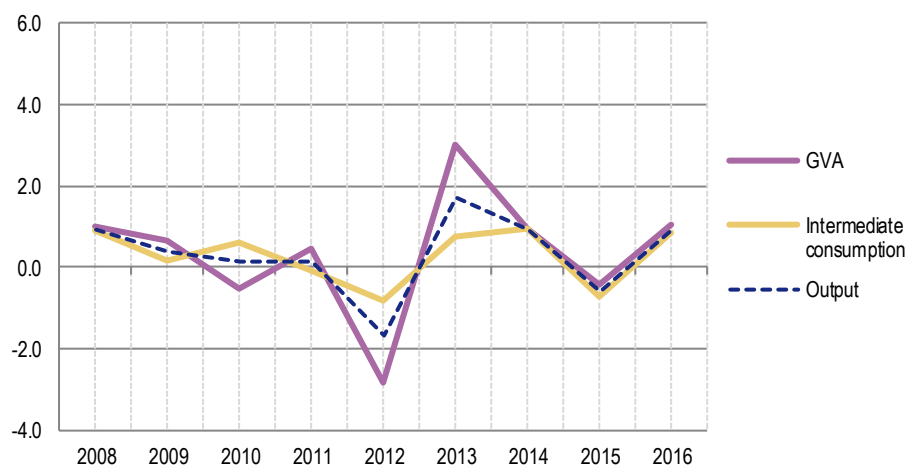
Output and intermediate consumption of agriculture

In the period from 2007 to 2016, intermediate consumption represented 58.2% of the agricultural industry output on average, ranging from 56.7% in 2008 to 59.2% in 2010.

Graph 4.2. Output and intermediate consumption at current prices, RSD million
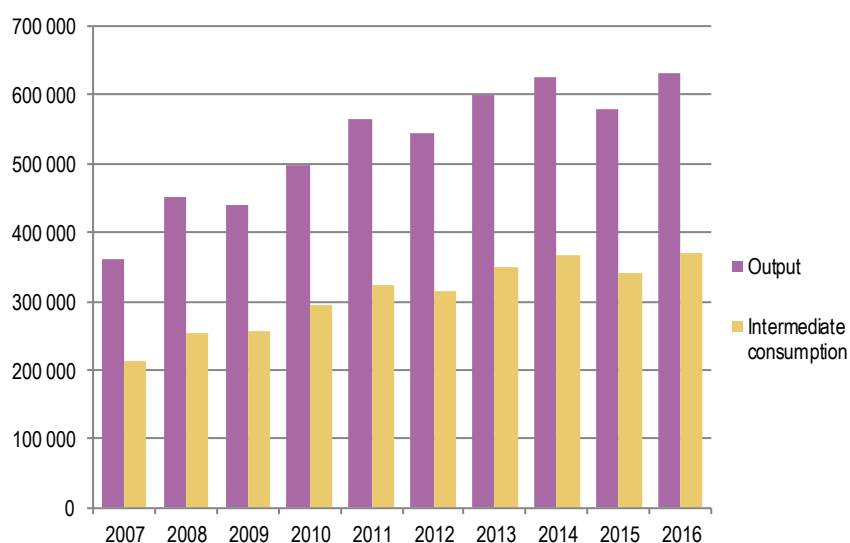
Agricultural output structure

In the period from 2007 to 2016, the average share of agricultural goods production in the total production of agricultural goods and services amounted to 97.5%, while the share of agricultural services equalled 2.5%.

In the same period, the average share of animal output in the production of agricultural goods and services accounted for 30.6%, while the share of crop output equalled 66.9%.

Graph 4.3. Structure of the agricultural output in 2016
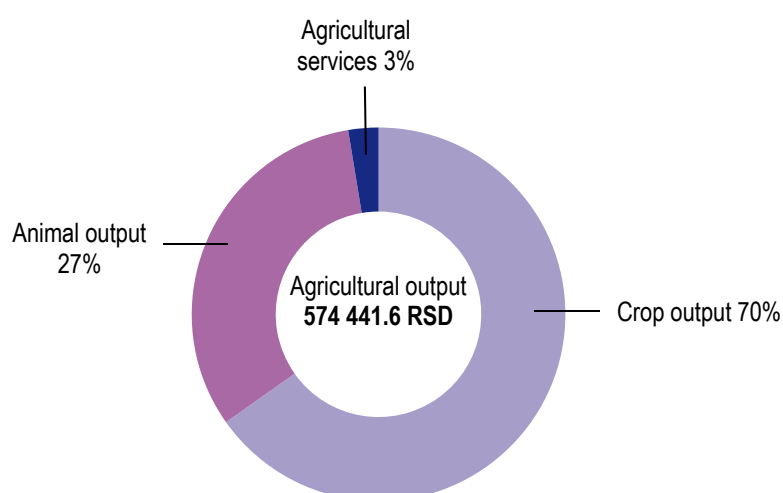
Crop output

In the period from 2007 to 2016, the average share of cereals dominated in the structure of crop production with 43.8%. Fruit production contributed with 15.0%, followed by industrial crops with 13.6%, while the share of vegetables and horticultural products was 9.6%. Wine production and forage crops equalled 8.2% and 5.5%, respectively. The lowest share belonged to potatoes production with 4.1%.

Graph 4.4. Structure of crop output in 2016
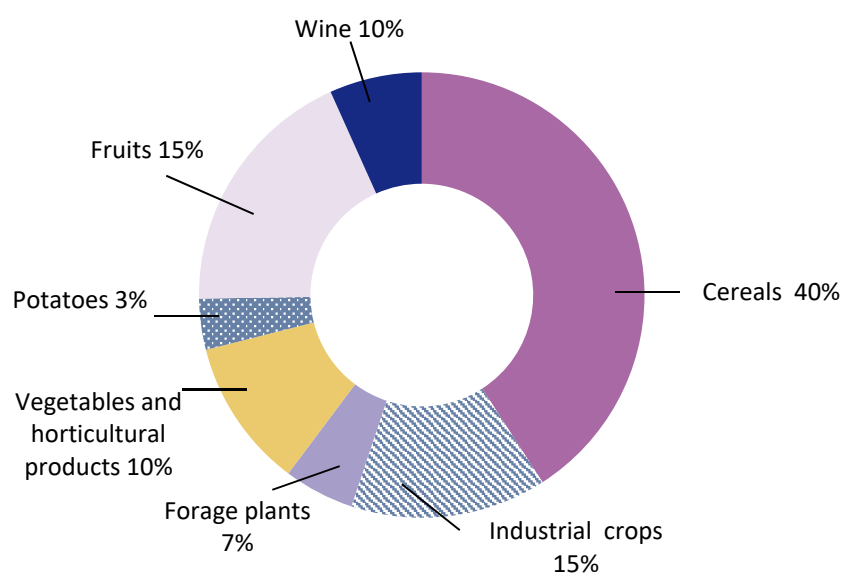
Animal output

In the period from 2007 to 2016, animal husbandry participated, on average, with 68.5%, while animal products participated with 31.5% in the animal output.

The highest average share in animal husbandry had the raising of pigs (51.2%), followed by the raising of cattle (28.2%). The raising of poultry accounted for 12.5%, while sheep and goats participated with 7.9%. The share of horse raising was only 0.2%.

Milk was the most important product of animal production. The average share of its production in the total value of animal production (animal output) equalled 70.6%.

Graph 4.5. Structure of animal output in 2016

Other animal products 1%
Eggs 9%
Sheep and goats, including milk production 5%
Poultry 9%
Cattle, including milk production 41%
Pigs 35%
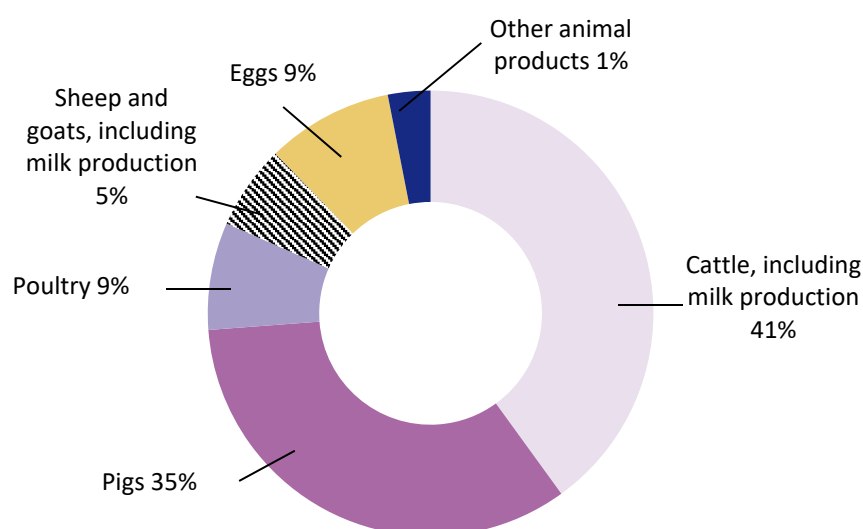
Volume of agricultural production

The volume of agricultural production represents the value of production at the previous year prices. It is expressed in producer prices with a view to avoiding the impact of subsidies. In the observed period, the volume of agricultural production varied considerably, mainly due to unfavourable climatic influences.

In 2008 the volume of production of agricultural goods increased by 10.6%. This is followed by a period of lower growth in volume, further followed by significant fall of 17.2% in 2012. The highest growth of 16.5% in the observed period was recorded in 2013. In 2014, lower growth of 11.4% was recorded, and then in 2015 fall of 6.4%. In 2016 recorded was a growth of volume of (9.0%).

These developments are the result of high fluctuations in the volume of crop production. After the growth in 2008 (18.6%) and 2009 (9.5%), there was a period of lower growth, while in 2012 the fall equalled 26.6%. The highest growth was recorded in 2013 (25.2%), while in 2014, lower growth of 15.4% was recorded. In 2015, recorded was fall of 13.3%. In 2016 recorded was a growth of 14.6%

In 2008 and 2009 the volume of livestock production fell by 6.3% and 7.5%, respectively. The next three years saw a growth of 8.1%, 2.8% and 5.3%, while in 2013 the volume of livestock production fell by 0.3%. In 2014 recorded was growth of 3.3%, while in 2015 the growth equalled 8.0%. In 2016 recorded was fall of 2.2%

Consumption structure of agricultural output

The main part of agricultural production is sold; the data are estimated on the basis of direct and indirect statistical sources. The methodology of establishing market shares of agricultural products is in the process of being developed. Therefore, the results are subject to possible revision if taking into account the changes in the data sources and assumptions used. The sales, which included sales to other agricultural holdings, sales to non-agricultural units outside agriculture and exports, in the period 2007-2016 amounted on average to 79.9% of agricultural production. In 2015, the share of total sales from holdings in agricultural production equalled 82.2%, while in 2016 it was 76.2%.

Intra-unit consumption moved between 8.4% and 14.3% in the observed period. Intra-unit consumption includes the products which are produced and consumed in the other agricultural activity at the four-digit level of NACE Rev. 2, especially the crop products used as animal feedingstuff. It is important to point out that the products produced and consumed on the agricultural holdings and corresponding to the same activity at the four-digit NACE Rev. 2 level are not included as part of agricultural production. Characteristic examples are seeds used in the same production, grapes for producing wine, olives for producing olive oil, milk used as calves fodder. In 2015 the share of intra-unit consumption equalled 11.2%, and in 2016 it was 14.3%

On average an agricultural household used 7.3% of agricultural output value of agricultural holding for own final consumption in 2007-2016. The share of own consumption of households in agricultural production in 2015 equalled 5.8%, and in 2016 it was 4.7%. When compared to the previous year, the level of stocks in 2016 increased by 11.3%.

Own production of fixed capital assets equalled on average 2.5% of agricultural output value. In 2016, their share grew in comparison with the previous year.

Graph 4.6. Consumption structure of agricultural output at producer prices, 2007-2016
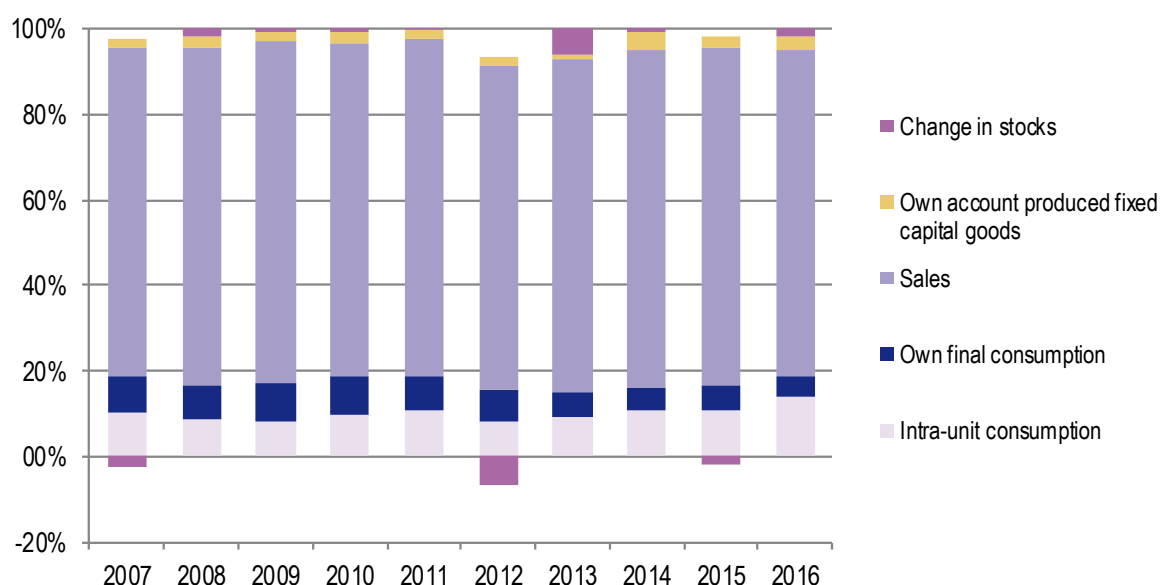
Intermediate consumption

The value of intermediate consumption in 2016 amounted to **RSD** 365 474.4 mill, representing the fall of 7.4% if compared to the previous year. The real level of intermediate consumption decreased by 8.6%, while input prices fell by 1.1%. The cost of plant protection products, maintenance of materials and other goods and services, declined compared to the previous year while fertilizers and other means to improve the quality of soil, maintenance of buildings, agricultural services, seeds and planting materials and animal feedingstuffs slightly increased when compared to the previous year.

Graph 4.7. Structure of intermediate consumption, 2007-2016, RSD mill.
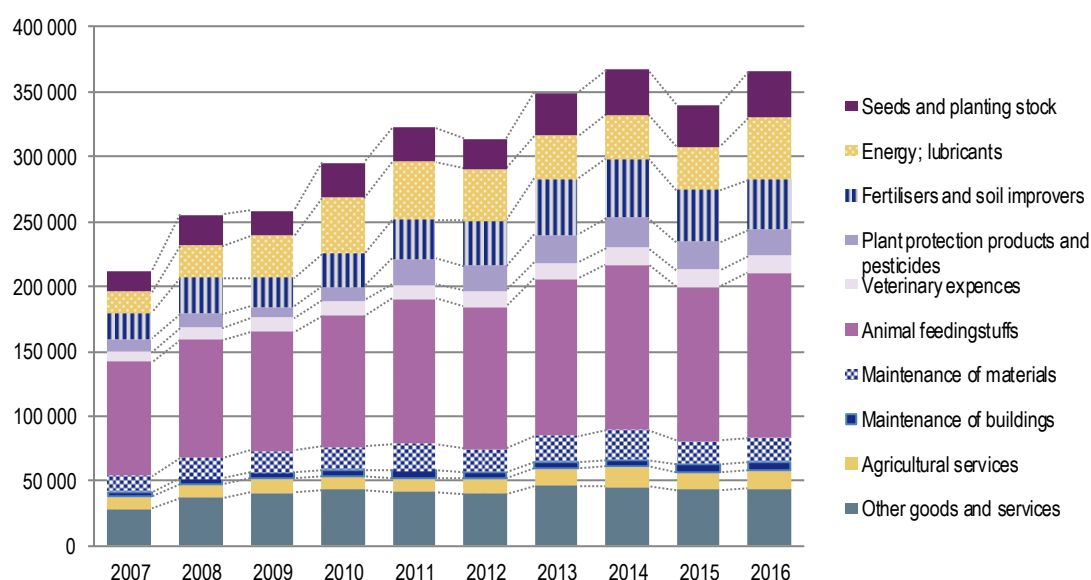
In the period from 2007 to 2016, the largest share in the total production costs of agricultural holdings had animal feedingstuffs with 35.5% on average, followed by the costs of other goods and services (13.5% on average) and energy and lubricants (11.2% on average). Fertilisers and other means for improving the quality of soil had the average share of 10.6%, while seeds and planting stocks had the average share of 8.7%. The lowest share had the costs of maintenance of buildings (1.6% on average).

Table 1. Economic accounts for agriculture, Republic of Serbia

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	Current prices, RSD million									
Production in basic prices	360 864.3	450 024.5	439 815.6	498 776.4	564 117.8	542 919.5	599 637.5	624 424.9	578 599.8	630 618.8
Intermediate consumption	212 139.2	255 060.0	258 117.4	295 276.6	322 353.7	313 514.6	349 334.0	367 327.2	340 358.5	365 474.4
Gross value added	**148 725.1**	**194 964.4**	**181 698.2**	**203 499.7**	**241 764.1**	**229 404.9**	**250 303.5**	**257 097.7**	**238 241.2**	**265 144.4**
Factor income	131 753.0	187 355.7	164 618.0	186 000.4	211 492.4	207 113.6	225 786.7	236 170.6	224 220.7	239 958.1
Share of GVA of agriculture in GDP, %	**6.3**	**7.1**	**6.3**	**6.6**	**7.1**	**6.4**	**6.5**	**6.6**	**5.9**	**6.3**[3]
	Constant prices (previous year prices), RSD million									
Production in basic prices	...	394 619.3	467 404.6	446 113.8	505 305.7	469 587.6	635 612.7	655 891.3	587 666.6	632 748.4
Intermediate consumption	...	231 225.0	259 373.4	273 716.0	292 802.2	296 447.9	336 963.8	382 131.1	341 173.6	369 668.2
Gross value added	**...**	**163 394.3**	**208 031.2**	**172 397.8**	**212 503.5**	**173 139.7**	**298 649.0**	**273 760.2**	**246 493.0**	**263 080.2**
	Chain-linked volume measures, 2010=100, RSD million									
Production in basic prices	432 951.8	473 449.9	491 734.7	498 776.4	505 305.7	420 630.7	492 445.4	538 643.2	506 934.7	554 376.5
Intermediate consumption	251 217.3	273 818.8	278 449.4	295 276.6	292 802.2	269 271.2	289 411.1	316 582.3	294 041.8	319 362.9
Gross value added	**182 960.3**	**201 006.2**	**214 477.9**	**203 499.7**	**212 503.5**	**152 184.7**	**198 120.5**	**216 687.0**	**207 749.2**	**229 409.1**
Real growth rates of GVA	**...**	**9.9**	**6.7**	**-5.1**	**4.4**	**-28.4**	**30.2**	**9.4**	**-4.1**	**10.4**

Share of gross value added of agriculture in gross domestic product, 2007-2016, %

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[3] Share of agricultural GDP in the estimated GDP, as the sum of four quarters.

Table 2. Agricultural output at current prices, Republic of Serbia

Description	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						RSD million				
Agricultural output	**330 173.8**	**417 831.7**	**407 850.6**	**466 810.9**	**519 959.5**	**502 684.2**	**544 441.5**	**569 387.0**	**525 466.3**	**574 441.6**
Agricultural goods output	**320 755.9**	**407 406.0**	**396 220.7**	**455 752.7**	**509 125.4**	**491 597.1**	**531 469.0**	**554 638.8**	**511 800.9**	**559 699.0**
Crop production	217 273.6	278 825.0	265 101.3	328 980.8	359 103.1	324 451.0	358 223.2	376 110.4	342 762.7	404 269.9
Cereals	90 749.4	134 574.8	110 383.8	146 732.7	175 221.3	138 324.7	157 155.0	171 318.6	139 584.0	164 022.2
Industrial crops	26 548.8	32 308.6	30 737.3	44 618.9	46 655.3	52 805.6	51 487.0	54 392.7	48 500.6	59 115.9
Forage plants	12 760.6	14 146.6	14 585.7	17 601.0	17 183.5	18 693.3	16 626.0	23 688.2	17 553.2	27 062.5
Vegetables and horticultural products	22 585.0	24 878.5	28 753.3	42 902.7	27 246.3	28 985.5	27 374.7	28 813.2	36 977.3	40 579.0
Potato	8 317.8	8 313.5	9 746.6	17 695.1	17 870.0	12 342.0	19 102.0	13 024.7	13 641.5	13 892.3
Fruits	33 929.0	39 323.6	37 040.3	41 159.2	50 859.5	53 932.0	58 404.4	49 699.7	63 116.0	60 494.6
Wine	21 795.8	24 758.2	33 316.3	17 872.6	23 712.7	18 925.0	27 534.5	34 621.3	22 794.7	38 568.5
Olive oil	-	-	-	-	-	-	-	-	-	-
Other crop products	587.2	521.3	538.0	398.6	354.5	442.9	539.6	552.0	595.3	534.9
Animal production	103 482.3	128 581.0	131 119.4	126 771.9	150 022.3	167 146.1	173 245.8	178 528.4	169 038.2	155 429.1
Animals	69 000.6	87 759.4	95 853.4	89 606.0	102 774.2	113 462.5	118 892.8	123 133.0	111 012.3	104 280.9
Cattle	21 439.1	24 735.2	26 669.9	24 797.0	29 058.9	31 377.2	32 406.8	32 114.4	31 703.4	30 352.6
Pigs	32 955.3	46 733.9	51 192.4	45 392.2	48 768.0	58 641.6	60 982.8	65 764.6	57 097.8	54 272.3
Equines	128.5	117.7	105.3	61.4	60.9	377.2	203.2	151.3	77.3	366.8
Sheep and goats	6 523.7	6 771.0	7 362.5	8 516.4	9 314.9	7 800.5	8 121.4	10 107.9	8 971.1	5 998.2
Poultry	7 954.0	9 401.1	10 523.2	10 838.9	15 571.5	15 266.1	17 178.6	14 994.7	13 162.7	13 291.1
Other animals	…	…	…	…	…	…	…	…	…	…
Animal products	34 481.7	40 821.7	35 266.0	37 165.9	47 248.1	53 683.5	54 353.0	55 395.5	58 026.0	51 148.1
Milk	25 352.1	30 397.0	25 480.0	26 942.5	34 212.1	36 776.5	38 017.9	38 459.0	37 309.9	35 047.9
Eggs	8 287.9	9 703.9	8 649.2	8 608.4	10 809.9	14 678.0	13 395.1	14 970.9	15 507.4	13 740.5
Other animal products	841.7	720.7	1 136.8	1 615.0	2 226.1	2 229.0	2 940.0	1 965.6	5 208.7	2 359.8
Agricultural services	**9 417.8**	**10 425.7**	**11 629.9**	**11 058.2**	**10 834.1**	**11 087.1**	**12 972.5**	**14 748.2**	**13 665.4**	**14 742.6**

Table 2. Agricultural output at current prices, Republic of Serbia (continued)

Description	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						Structure (%)				
Agricultural output	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Agricultural goods output	**97.1**	**97.5**	**97.1**	**97.6**	**97.9**	**97.8**	**97.6**	**97.4**	**97.4**	**97.4**
Crop production	65.8	66.7	65.0	70.5	69.1	64.5	65.8	66.1	65.2	70.4
Cereals	27.5	32.2	27.1	31.4	33.7	27.5	28.9	30.1	26.6	28.6
Industrial crops	8.0	7.7	7.5	9.6	9.0	10.5	9.5	9.6	9.2	10.3
Forage plants	3.9	3.4	3.6	3.8	3.3	3.7	3.1	4.2	3.3	4.7
Vegetables and horticultural products	6.8	6.0	7.0	9.2	5.2	5.8	5.0	5.1	7.0	7.1
Potato	2.5	2.0	2.4	3.8	3.4	2.5	3.5	2.3	2.6	2.4
Fruits	10.3	9.4	9.1	8.8	9.8	10.7	10.7	8.7	12.0	10.5
Wine	6.6	5.9	8.2	3.8	4.6	3.8	5.1	6.1	4.3	6.7
Olive oil	-	-	-	-	-	-	-	-	-	-
Other crop products	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Animal production	31.3	30.8	32.1	27.2	28.9	33.3	31.8	31.4	32.2	27.1
Animals	20.9	21.0	23.5	19.2	19.8	22.6	21.8	21.6	21.1	18.2
Cattle	6.5	5.9	6.5	5.3	5.6	6.2	6.0	5.6	6.0	5.3
Pigs	10.0	11.2	12.6	9.7	9.4	11.7	11.2	11.6	10.9	9.4
Equines	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Sheep and goats	2.0	1.6	1.8	1.8	1.8	1.6	1.5	1.8	1.7	1.0
Poultry	2.4	2.2	2.6	2.3	3.0	3.0	3.2	2.6	2.5	2.3
Other animals	…	…	…	…	…	…	…	…	…	…
Animal products	10.4	9.8	8.6	8.0	9.1	10.7	10.0	9.7	11.0	8.9
Milk	7.7	7.3	6.2	5.8	6.6	7.3	7.0	6.8	7.1	6.1
Eggs	2.5	2.3	2.1	1.8	2.1	2.9	2.5	2.6	3.0	2.4
Other animal products	0.3	0.2	0.3	0.3	0.4	0.4	0.5	0.3	1.0	0.4
Agricultural services	**2.9**	**2.5**	**2.9**	**2.4**	**2.1**	**2.2**	**2.4**	**2.6**	**2.6**	**2.6**

Table 3. Agricultural output at previous year prices, Republic of Serbia

Description	2008	2009	2010	2011	2012	2013	2014	2015	2016
					RSD million				
Agricultural output	**365 091.6**	**434 989.8**	**415 373.7**	**469 848.8**	**430 486.6**	**585 592.9**	**606 771.8**	**532 696.0**	**572 842.4**
Agricultural goods output	**354 677.7**	**424 136.0**	**403 529.2**	**458 718.7**	**421 516.8**	**572 677.2**	**592 314.1**	**518 898.1**	**557 944.9**
Crop production	257 719.1	305 206.0	261 832.3	328 426.3	263 565.1	406 063.3	413 304.1	326 079.7	392 659.2
Cereals	122 951.2	143 078.2	119 123.4	144 178.4	121 304.2	179 468.4	198 072.2	136 942.0	173 967.3
Industrial crops	30 064.9	32 201.5	36 048.7	42 955.4	35 052.2	70 087.1	60 248.7	44 755.3	62 032.9
Forage plants	13 055.4	16 274.8	15 897.3	16 133.1	13 532.5	19 158.2	19 897.7	21 143.1	20 669.8
Vegetables and horticultural products	25 908.7	25 395.2	28 782.4	42 038.3	23 553.5	34 306.9	22 861.5	33 000.7	38 583.4
Potato	9 126.2	9 092.4	9 895.6	17 608.9	11 565.8	13 171.3	18 627.3	13 038.3	14 564.5
Fruits	32 085.7	46 074.4	30 923.5	46 164.9	39 202.0	67 612.7	55 431.2	49 275.6	58 067.8
Wine	23 955.4	32 541.4	20 819.2	18 993.7	18 960.0	21 752.3	37 560.2	27 360.9	24 260.9
Olive oil	-	-	-	-	-	-	-	-	-
Other crop products	571.6	548.0	342.3	353.4	395.0	506.3	605.2	563.9	512.6
Animal production	96 958.7	118 930.0	141 696.9	130 292.4	157 951.7	166 613.9	179 010.1	192 818.4	165 285.7
Animals	65 627.8	80 882.3	104 958.9	92 174.4	108 834.9	114 635.0	123 991.7	133 376.3	112 543.9
Cattle	21 735.4	21 577.4	26 958.0	26 938.9	29 706.7	30 321.4	29 718.4	36 165.9	32 096.1
Pigs	28 225.1	42 686.4	59 445.1	43 794.7	44 640.0	61 281.5	68 615.9	71 148.4	59 309.5
Equines	84.3	114.6	72.4	45.1	424.0	162.4	160.5	68.7	310.7
Sheep and goats	6 818.4	6 279.6	7 680.6	8 542.1	20 005.0	7 439.0	8 997.3	11 841.7	7 426.1
Poultry	8 764.5	10 224.3	10 802.8	12 853.5	14 059.2	15 430.8	16 499.6	14 151.5	13 401.4
Other animals	…	…	…	…	…	…	…	…	…
Animal products	31 330.9	38 047.7	36 738.0	38 118.0	49 116.8	51 978.8	55 018.4	59 442.2	52 741.8
Milk	23 597.3	28 414.6	25 296.9	27 790.9	34 584.1	35 125.2	38 840.1	38 383.8	36 156.7
Eggs	7 101.0	8 487.4	10 272.8	8 741.3	12 299.7	14 097.7	14 435.7	16 412.3	13 911.8
Other animal products	632.6	1 145.7	1 168.2	1 585.9	2 233.0	2 755.9	1 742.5	4 646.1	2 673.3
Agricultural services	**10 413.8**	**10 853.8**	**11 844.4**	**11 130.2**	**8 969.8**	**12 915.7**	**14 457.7**	**13 797.9**	**14 897.5**

Table 3. Agricultural output at previous year prices, Republic of Serbia (continued)

Description	2008	2009	2010	2011	2012	2013	2014	2015	2016
					Volume changes				
Agricultural output	**10.6**	**4.1**	**1.8**	**0.7**	**-17.2**	**16.5**	**11.4**	**-6.4**	**9.0**
Agricultural goods output	**10.6**	**4.1**	**1.8**	**0.7**	**-17.2**	**16.5**	**11.4**	**-6.4**	**9.0**
Crop production	18.6	9.5	-1.2	-0.2	-26.6	25.2	15.4	-13.3	14.6
Cereals	35.5	6.3	7.9	-1.7	-30.8	29.7	26.0	-20.1	24.6
Industrial crops	13.2	-0.3	17.3	-3.7	-24.9	32.7	17.0	-17.7	27.9
Forage plants	2.3	15.0	9.0	-8.3	-21.2	2.5	19.7	-10.7	17.8
Vegetables and horticultural products	14.7	2.1	0.1	-2.0	-13.6	18.4	-16.5	14.5	4.3
Potato	9.7	9.4	1.5	-0.5	-35.3	6.7	-2.5	0.1	6.8
Fruits	-5.4	17.2	-16.5	12.2	-22.9	25.4	-5.1	-0.9	-8.0
Wine	9.9	31.4	-37.5	6.3	-20.0	14.9	36.4	-21.0	6.4
Olive oil	-	-	-	-	-	-	-	-	-
Other crop products	-2.7	5.1	-36.4	-11.3	11.4	14.3	12.1	2.2	-13.9
Animal production	-6.3	-7.5	8.1	2.8	5.3	-0.3	3.3	8.0	-2.2
Animals	-4.9	-7.8	9.5	2.9	5.9	1.0	4.3	8.3	1.4
Cattle	1.4	-12.8	1.1	8.6	2.2	-3.4	-8.3	12.6	1.2
Pigs	-14.4	-8.7	16.1	-3.5	-8.5	4.5	12.5	8.2	3.9
Equines	-34.4	-2.7	-31.3	-26.5	595.6	-56.9	-21.0	-54.6	302.2
Sheep and goats	4.5	-7.3	4.3	0.3	114.8	-4.6	10.8	17.2	-17.2
Poultry	10.2	8.8	2.7	18.6	-9.7	1.1	-4.0	-5.6	1.8
Other animals	…	…	…	…	…	…	…	…	…
Animal products	-9.1	-6.8	4.2	2.6	4.0	-3.2	1.2	7.3	-9.1
Milk	-6.9	-6.5	-0.7	3.1	1.1	-4.5	2.2	-0.2	-3.1
Eggs	-14.3	-12.5	18.8	1.5	13.8	-4.0	7.8	9.6	-10.3
Other animal products	-24.8	59.0	2.8	-1.8	0.3	23.6	-40.7	136.4	-48.7
Agricultural services	**10.6**	**4.1**	**1.8**	**0.7**	**-17.2**	**16.5**	**11.4**	**-6.4**	**9.0**

Table 4. Intermediate consumption of agriculture at current prices, Republic of Serbia

Description	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	RSD million									
Intermediate consumption	**212 139.2**	**255 060.0**	**258 117.4**	**295 276.6**	**322 353.7**	**313 514.6**	**349 334.0**	**367 327.2**	**340 358.5**	**365 474.4**
Seeds and planting stock	16 127.0	23 499.9	19 382.9	27 226.0	26 126.3	22 550.2	33 544.0	35 271.7	32 682.1	35 093.8
Energy; lubricants	16 353.1	24 756.7	31 808.3	42 747.3	44 588.5	40 295.7	32 554.5	33 409.2	33 182.2	47 792.4
Fertilisers and soil improvers	20 339.7	28 041.2	22 495.6	25 277.1	30 650.4	34 396.3	43 436.5	45 673.8	40 436.3	38 609.1
Plant protection products and pesticides	10 064.2	10 815.7	8 844.9	11 357.9	19 579.5	19 577.3	21 595.1	22 937.6	21 372.4	20 024.2
Veterinary expenses	7 474.9	9 151.9	10 569.0	11 115.0	11 302.4	12 151.6	12 508.6	13 360.7	13 257.7	13 788.5
Feedingstuffs	87 446.8	91 084.0	91 969.1	101 024.5	111 356.2	109 341.2	120 676.5	127 297.7	118 076.9	126 566.0
Maintenance of materials	12 524.8	16 224.4	16 661.7	17 845.2	20 916.6	18 012.5	20 050.1	23 045.4	18 409.2	18 863.3
Maintenance of buildings	4 106.9	3 983.8	3 915.4	4 477.9	5 132.4	5 257.0	5 316.8	5 684.7	5 931.9	6 213.7
Agricultural services	9 417.8	10 425.7	11 629.9	11 058.2	10 834.1	11 986.8	12 972.5	14 748.2	13 665.4	14 742.6
Other goods and services	28 283.8	37 076.8	40 840.7	43 147.5	41 867.2	39 946.0	46 679.4	45 898.2	43 344.4	43 780.8
	Structure (%)									
Intermediate consumption	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Seeds and planting stock	7.6	9.2	7.5	9.2	8.1	7.2	9.6	9.6	9.6	9.6
Energy; lubricants	7.7	9.7	12.3	14.5	13.8	12.9	9.3	9.1	9.7	13.1
Fertilisers and soil improvers	9.6	11.0	8.7	8.6	9.5	11.0	12.4	12.4	11.9	10.6
Plant protection products and pesticides	4.7	4.2	3.4	3.8	6.1	6.2	6.2	6.2	6.3	5.5
Veterinary expenses	3.5	3.6	4.1	3.8	3.5	3.9	3.6	3.6	3.9	3.8
Feedingstuffs	41.2	35.7	35.6	34.2	34.5	34.9	34.5	34.7	34.7	34.6
Maintenance of materials	5.9	6.4	6.5	6.0	6.5	5.7	5.7	6.3	5.4	5.2
Maintenance of buildings	1.9	1.6	1.5	1.5	1.6	1.7	1.5	1.5	1.7	1.7
Agricultural services	4.4	4.1	4.5	3.7	3.4	3.8	3.7	4.0	4.0	4.0
Other goods and services	13.3	14.5	15.8	14.6	13.0	12.7	13.4	12.5	12.7	12.0

Table 5. Intermediate consumption of agriculture at constant prices of the previous year, Republic of Serbia

Description	2008	2009	2010	2011	2012	2013	2014	2015	2016
	Mill. RSD								
Intermediate consumption	**231 225.0**	**259 373.4**	**273 716.0**	**292 802.2**	**296 447.9**	**336 963.8**	**382 131.1**	**341 173.6**	**369 668.2**
Seeds and planting stock	16 724.2	23 449.5	21 156.5	23 077.0	26 460.9	31 271.1	38 242.8	33 038.6	33 775.2
Energy; lubricants	24 523.9	29 080.5	41 952.3	42 890.1	35 417.2	31 929.5	32 710.6	34 970.0	48 817.6
Fertilisers and soil improvers	20 659.7	27 521.0	22 715.6	25 319.6	29 984.5	48 688.0	50 314.9	37 530.0	42 149.7
Plant protection products and pesticides	10 222.6	10 615.0	8 931.4	11 377.0	19 154.1	19 117.1	21 926.3	20 067.3	19 865.3
Veterinary expenses	7 297.3	8 979.7	10 677.2	11 262.9	10 863.1	12 414.5	12 794.9	13 536.8	13 410.7
Feedingstuffs	85 368.5	89 370.6	92 910.0	102 369.2	107 028.0	114 235.1	138 490.8	124 779.0	131 156.4
Maintenance of materials	16 095.3	16 308.2	16 963.0	18 854.1	16 487.9	19 319.3	23 239.8	17 624.5	17 840.3
Maintenance of buildings	3 893.9	3 670.3	4 200.4	4 436.1	4 479.1	4 318.9	5 277.7	5 808.9	6 487.5
Agricultural services	10 414.0	10 856.1	11 842.8	11 129.9	9 698.7	12 914.6	14 456.3	13 797.9	14 897.5
Other goods and services	36 025.6	39 522.6	42 366.8	42 086.2	36 874.4	42 755.8	44 676.9	40 020.7	41 267.9
	Volume changes								
Intermediate consumption	**9.0**	**1.7**	**6.0**	**-0.8**	**-8.0**	**7.5**	**9.4**	**-7.1**	**8.6**
Seeds and planting stock	3.7	-0.2	9.2	-15.2	1.3	38.7	14.0	-6.3	3.3
Energy; lubricants	50.0	17.5	31.9	0.3	-20.6	-20.8	0.5	4.7	47.1
Fertilisers and soil improvers	1.6	-1.9	1.0	0.2	-2.2	41.5	15.8	-17.8	4.2
Plant protection products and pesticides	1.6	-1.9	1.0	0.2	-2.2	-2.4	1.5	-12.5	-7.1
Veterinary expenses	-2.4	-1.9	1.0	1.3	-3.9	2.2	2.3	1.3	1.2
Feedingstuffs	-2.4	-1.9	1.0	1.3	-3.9	4.5	14.8	-2.0	11.1
Maintenance of materials	28.5	0.5	1.8	5.7	-21.2	7.3	15.9	-23.5	-3.1
Maintenance of buildings	-5.2	-7.9	7.3	-0.9	-12.7	-17.8	-0.7	2.2	9.4
Agricultural services	10.6	4.1	1.8	0.6	-10.5	7.7	11.4	-6.4	9.0
Other goods and services	27.4	6.6	3.7	-2.5	-11.9	7.0	-4.3	-12.8	-4.8