POLSKI FADN

FADN and Polish FADN

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LIST OF CONTENTS

List of Abbreviations

AAD	Agricultural Accountancy Department
AWU	Annual Work Unit
BEAH	Book of Events in Agricultural Holdings
BRE	Book of Receipts and Expenditures
CAP	Common Agricultural Policy
CTAH	Community Typology for Agricultural Holdings
DG-AGRI	Directorate-General for Agriculture and Rural Development
EC	European Commission
ECU	European Currency Unit
ESU	European Size Unit
EU	European Union
EUR	Code designator of monetary unit called "euro"
euro	Monetary unit, obligatory in most of the EU Member States
EUROSTAT	Statistical Office of The European Union
FADN	Farm Accountancy Data Network
GTF	General Types of Farming
IAFE-NRI	Institute of Agricultural and Food Economics – National Research Institute
LAL	List of Assets and Liabilities
LSAL	List of Selected Assets and Liabilities
LU	Livestock Units
NTS	Nomenclature of Territorial Units for Statistics
OGA	Other Gainful Activities
SGM	Standard Gross Margin
SO	Standard Output
UAA	Utilized Agricultural Area
VAT	Value Added Tax

I. FARM ACCOUNTANCY DATA NETWORK (FADN)

I.1. General Information

Farm Accountancy Data Network (FADN) was created in stages, and its scope was extended accordingly as the European Union was subject to consecutive enlargements. Pursuant to Regulation No 79/65/EEC of the Council of 15 June 1965 setting up a network for the collection of accountancy data on the incomes and business operation of agricultural holdings in the European Economic Community [18], six founding States of the Community have established FADN. In 1973, the FADN has covered Great Britain, Ireland and Denmark, since 1981 Greece. Spain and Portugal joined FADN in 1986, Finland in 1986 as well and Sweden and Austria in 1995. On the 1 May 2004, more countries joined FADN: Cyprus, Estonia, Lithuania, Latvia, Poland, Slovakia, Slovenia, Czech Republic, Hungary and Malta. Romania and Bulgaria participate in FADN from 2007, Croatia from 2013. Currently, the FADN functions within the area of 28 EU Member States.

The objectives and circumstances of FADN establishment are described in the provisions of the Treaty of Rome establishing the Economic Community and in the preamble of the Regulation establishing FADN.

The part of the Treaty of Rome that directly pertains to agriculture stipulates that agricultural economy and trade in agricultural products form a part of the common market, and Common Agricultural Policy (CAP) will be established by the Community members for correct functioning and development of the common market of agricultural products [23].

When developing the CAP and specific mechanisms in its implementation, the following will be taken into account:

- particular nature of agricultural economy, arising from the social structure of the agriculture,
- structural and natural disparities between individual agricultural regions and the necessity of gradual removal,
- the fact that agriculture in the Community Member States is closely connected with the entire economy.

In order to achieve the pursued goals of the common market, the CAP can assure in particular:

- effective coordination of efforts taken in the field of vocational education, research and dissemination of agricultural knowledge. This coordination can be based on jointly financed projects or institutions,
- joint actions aimed at increasing the consumption of certain products.

The implementation of defined CAP objectives would not be possible without appropriate tools. The FADN is one of them. The data collected under this system are used first of all:

- to define the income of agricultural holdings functioning within the territory of the Community on a yearly basis,

- to analyse activity of agricultural holdings,
- evaluation of the effects of planned modifications concerning the Community's agriculture.

The unique nature of FADN is that it collects the data classified as sensitive, which describe primarily the economic and financial condition of agricultural holdings.

Given the objectives to be fulfilled, FADN is based on the accounting data originating in the accounting carried out according to the management accounting formula, and this type of accounting, unlike financial accounting[1], is aimed at reflecting the economic situation of an agricultural holding as accurately as possible. The choice of the accounting formula was decided by the willingness to take decisions as accurate as possible in relation to the situation of agricultural holdings. Otherwise, even the decisions developed using the best techniques would refer to the virtual reality generated on the basis of virtual accounting data[2].

FADN has been established on the basis of four basic legal provisions of the Community. They include:

- Regulation No 79/65/EEC of the Council of 15 June 1965 setting up a network for the collection of accountancy data on the incomes and business operation of agricultural holdings in the European Economic Community,
- Commission Decision 85/377/EEC of 7 June 1985 establishing a Community typology for agricultural holdings,
- Commission Regulation (EEC) No 1859/82 of 12 July 1982 concerning the selection of returning holdings for the purpose of determining incomes of agricultural holdings,
- Regulation No 118/66/EEC of the Commission of 29 July 1966 on the form of farm return to be used for the purpose of determining incomes of agricultural holdings.

Currently, the functioning of FADN is regulated by the following legal regulations[3]:

- Council Regulation (EC) No 1217/2009 of 30 November 2009 setting up a network for the collection of accountancy data on the incomes and business operation of agricultural holdings in the European Community, *as amended*,
- Commission Regulation (EC) No 1242/2008 of 8 December 2008 establishing a Community typology for agricultural holdings, *as amended*,
- Commission Regulation (EU) No 1291/2009 of 18 December 2009 concerning the selection of returning holdings for the purpose of determining incomes of agricultural holdings, *as amended*,
- Commission Implementing Regulation (EU) No 1320/2013 of 3 December 2013 correcting Implementing Regulation (EU) No 385/2012 on the farm return to be used for determining the incomes of agricultural holdings and analysing the business operation of such holdings.

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[1] Financial accounting is regulated by relevant provisions of law, which differ in EU Member States.

[2] Most participants of training in agricultural accounting gave a negative answer to the question whether it is possible to take a very good decision on the basis of data that do not reflect the factual situation in an agricultural holding. Unfortunately, such an answer is not correct. Such knowledge level might lead to a decision that is very good in terms of the used techniques, but unfortunately inaccurate in relation to the given agricultural holding. This threat is aggravated by the fact that it does not refer only to the decisions taken at the level of the agricultural holding by the direct decision-maker – the farmer , but also the provision of inadequate advice by advisors and decisions taken by economic politicians.

[3] In 2014 the works on legislation amendments have been undertaken. Pending the publication of the new regulations, the operation of the FADN is governed by the above-mentioned regulations.

I.2. Main rules applicable in FADN

The Commission Regulation establishing the FADN defines among others three main rules for the functioning of the system, namely [18]:

- **Farmers voluntarily participate in the FADN system.**

There are often cases when a farmer keeps his accounting at his agricultural holding due to own needs or existing obligations. However, in order to make the agricultural accounting data available for the Commission, it is necessary to obtain the consent of the farmers.

- **The data from agricultural holdings sent to the Commission are confidential.**

It is not allowed within FADN to disclose any personal agricultural accounting data or any other personal details whatsoever. This prohibition applies to all people currently or previously participating in the work within FADN who have gained access to personal data on that account. This prohibition is also imposed on the people who have changed their job or retired.

According to the confidentiality rules, and in fact in order to prevent the identification of an entity from which the data come from, it is admissible to publish averaged results covering at least 15 holdings [15].

It should be reminded that a farmer has the right to freely administer the agricultural accounting data coming from his agricultural holding.

- **The data must not be used for tax purposes.**

It defines the FADN goal and the method of using the collected accounting data from agricultural holdings. The data obtained on the basis of the regulation are used mainly as a basis for the reports drawn up by the Commission on the situation in agriculture and on particular agricultural markets, and on the income of farmers in the European Union. These reports are developed on a yearly basis in order to be submitted to the Council and the European Parliament, in particular when the prices of agricultural products are determined each year.

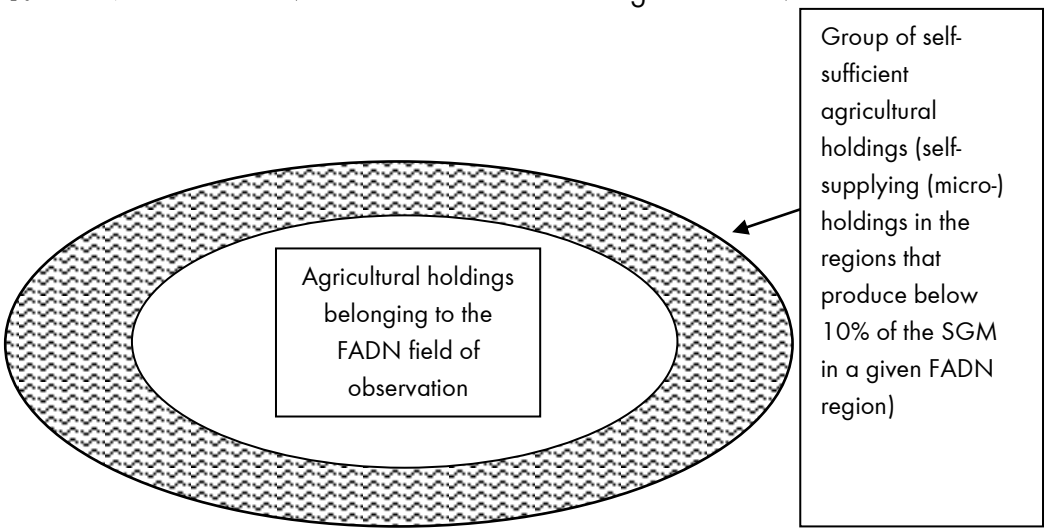
The Regulation provides for an absolute prohibition to use any personal accounting data or any other details obtained under the system for tax purposes or other purposes that might cause risk of inconvenience or loss for a farmer.

I.3. FADN field of observation

The agricultural holdings in the European Union include the ones whose Utilised Agricultural Area amounts to at least 1 ha and the ones smaller than 1 ha that supply the market with a specific part of their products, or produce more than a specific production output. Such holdings also belong to FADN field of observation. The other holdings are not covered by FADN sample.

Diagram 1 shows the FADN field of observation for agricultural holdings that were classified according to the Community typology for agricultural holdings applicable until the end of 2009.

Diagram 1. FADN field of observation determined according to the SGM



FADN field of observation covers commercial agricultural holdings. They are holdings that produce at least 90% of the Standard Gross Margin (SGM) value within a given region or country. The lower threshold is set on the basis of a summing up the SGM value for holdings existed in the national register of agricultural holdings (ranging from the largest to the smallest ones) until the moment when the value of SGM of the last holding reaches 90% of the SGM value in a relevant administrative unit. However, due to the fact that the structure of value of thresholds is not constant, but incremental, the minimal value thresholds expressed in the European Size Units (ESU) amount to 16, 8, 4, 2, 1 ESU. This is the reason why the FADN field of observation in individual Member States covers holdings that produce over 90% of the SGM.

Table 1. The minimal thresholds for economic size of an agricultural holding that defines the FADN field of observation in the selected regions of EU Member States, expressed in ESU, in EUR, in ha of wheat and in heads of dairy cows (according to SGM "2004")

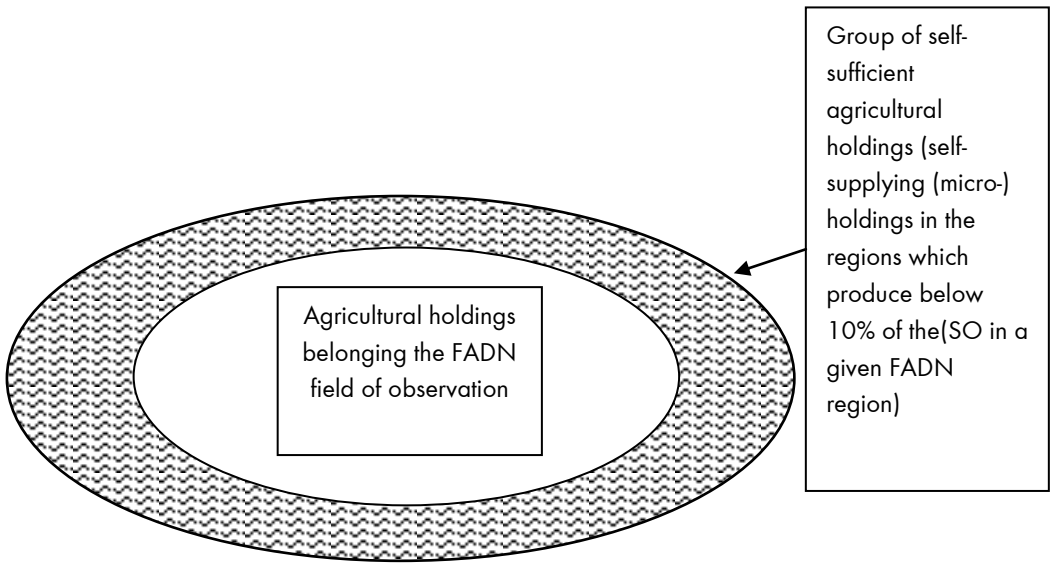
Country	FADN region	Threshold value		Wheat		Dairy cows	
		ESU	EUR	SGM per 1 ha (EUR)	Threshold value in ha of wheat	SGM per head (EUR)	Threshold value in cow heads
Bulgaria	*bg Bulgaria*	1	1 200	181	6,6	421	2,9
Romania	*ro Romania*	1	1 200	170	7,1	391	3,1
Cyprus	*cy Kypros/Kibris*	2	2 400	413	5,8	1 090	2,2
Estonia	*ee Eesti*	2	2 400	219	10,9	654	3,7
Greece	*gr11_2_3 Makedonia*	2	2 400	348	6,9	852	2,8
Ireland	*ie_c_u Connacht-Ulster*	2	2 400	898	2,7	923	2,6
Lithuania	*lt Lietuva*	2	2 400	272	8,8	436	5,5
Latvia	*lv Latvija*	2	2 400	281	8,5	698	3,4
Poland	*pl_a Pomorze i Mazury*	2	2 400	343	7,0	762	3,1
Portugal	*pt16 Centro*	2	2 400	191	12,6	995	2,4
Slovenia	*si Slovenija*	2	2 400	459	5,2	834	2,9
Hungary	*hu32 Észak-Alföld*	2	2 400	269	8,9	1 097	2,2
Czech Republic	*cz Ceska Republika*	4	4 800	394	12,2	889	5,4

Country	FADN region	Threshold value		Wheat		Dairy cows	
		ESU	EUR	SGM per 1 ha (EUR)	Threshold value in ha of wheat	SGM per head (EUR)	Threshold value in cows heads
Spain	*es61_3 Andalucía, Ceuta y Melilla*	4	4 800	455	10,5	1 120	4,3
Italy	*ite2 Umbria*	4	4 800	599	8,0	1 363	3,5
Austria	*at21 Kärnten*	8	9 600	469	20,5	1 428	6,7
Denmark	*dk_a Øerne*	8	9 600	949	10,1	1 696	5,7
Finland	*fi131_2_3_41 Sisä-Suomi*	8	9 600	413	23,2	1 937	5,0
France	*fr24 Centre*	8	9 600	830	11,6	1 310	7,3
Luxembourg	*lu Luxembourg*	8	9 600	560	17,1	1 469	6,5
Malta	*mt Malta*	8	9 600	-	-	670	14,3
Germany	*de11 Stuttgart*	8	9 600	575	16,7	1 215	7,9
Slovakia	*sk01 Bratislavsky*	8	9 600	246	39,0	1 064	9,0
Sweden	*se01_2_4_a Stockholm /ÖstraMellansverige /Sydsverige/Västsverige*	8	9 600	554	17,3	1 307	7,3
Belgium	*be1_2 Vlaams gewest en Brussel*	16	19 200	1 183	16,2	1 683	11,4
The Netherlands	*nl Nederland*	16	19 200	1 130	17,0	1 710	11,2
The UK	*uk3_4_5 East*	16	19 200	-	-	-	-

Source: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ef_tsgm&lang=en. Commission Regulation (EC) No 1265/2008 of 16 December 2008 amending Regulation (EEC) No 1859/82 concerning the selection of returning holdings for the purpose of determining incomes of agricultural holdings.

New rules of Community typology for agricultural holdings are in force from 2010. The main change consists in replacing the parameters of the SGM with Standard Output (SO) parameters. Therefore, the FADN field of observation has changed.

Diagram 2. FADN field of observation determined according to SO



The FADN field of observation selected according to SO covers commercial holdings that produce at least 90% of the SO in a given region or country. The lower threshold is set on the basis of a summing up the SO value for holdings existed in the national register of agricultural holdings (ranging from the largest to the smallest ones) until the moment when the value of SO of the last holding reaches 90% of the SO value in a relevant administrative unit.

In individual Member States, the thresholds of economic values defining the minimal economic size of agricultural holdings included in the FADN field of observation, vary mainly due to the differences in the agricultural structure.

Table 2. The minimal thresholds for economic size of an agricultural holding that defines the FADN field of observation in selected regions of the EU Member States, expressed in EUR, hectares of wheat and in heads of dairy cows (according to SO "2007")

Country	FADN region	Threshold value (EUR)	Wheat		Dairy cows	
			SO per 1 ha (EUR)	Threshold value (in ha of wheat)	SO per head (in EUR)	Threshold value (in cow heads)
Bulgaria	*Bulgaria*	2 000	380	5,3	849	2,4
Romania	*Romania*	2 000	370	5,4	1 077	1,9
Croatia	*Zagrebacka zupanija*	4 000	598	6,7	2 211	1,8
Cyprus	*Cyprus*	4 000	486	8,2	3 027	1,3
Estonia	*Estonia*	4 000	414	9,7	1 769	2,3
Greece		4 000	data not available			
Hungary	*Észak-Alföld*	4 000	473	8,4	1 866	2,1
Latvia	*Latvia*	4 000	479	8,4	1 293	3,1
Lithuania	*Lithuania*	4 000	516	7,8	1 200	3,3
Malta	*Malta*	4 000	-	-	2 165	1,8
Poland	*Wielkopolska i Śląsk*	4 000	692	5,8	1 282	3,1
Portugal	*Centro (PT)*	4 000	405	9,9	2 254	1,8
Slovenia	*Slovenia*	4 000	655	6,1	1 919	2,1
Spain	*Andalucía*	4 000	565	7,1	2 185	1,8
Austria	*Kärnten*	8 000	615	13,0	2 300	3,5
Czech Republic	*Czech Republic*	8 000	673	11,9	1 855	4,3
Finland		8 000	data not available			
Ireland		8 000	data not available			
Italy	*Umbria*	8 000	1 249	3,2	2 294	1,7
Denmark		15 000	data not available			
Sweden	*Stockholm*	15 000	755	19,9	2 877	5,2
Belgium	*Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest*	25 000	1 400	17,9	2 166	11,5
France	*Centre (FR)*	25 000	916	27,3	2 254	11,1
Germany	*Stuttgart*	25 000	995	25,1	1 869	13,4
Luxembourg	*Luxembourg*	25 000	856	29,2	2 202	11,4
Slovakia	*Bratislavský kraj*	25 000	567	44,1	1 928	13,0
The Netherlands	*Netherlands*	25 000	1 240	20,2	2 540	9,8
The UK	*East of England*	25 000	1 187	21,1	2 533	9,9

Source: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ef_tso_coef&lang=en. Commission Regulation (EU) No 1291/2009 of 18 December 2009 concerning the selection of returning holdings for the purpose of determining incomes of agricultural holdings.

I.4. Community typology for agricultural holdings until the end of 2009

The holdings classification rules are precisely defined and were officially established for the first time in the Commission Decision 78/463/EEC of 7 April 1978. According to these rules, agricultural holdings in the EU are usually classified according to two criteria:

- economic size,
- type of farming.

I.4.1. Criteria used in the Community typology for agricultural holdings

Following the extension of the measures and scale of subsidies under the CAP, a need arose to examine more precisely the effects of planned measures in various agricultural holdings formulated not only according to the quantitative criteria (e.g. land resources), but also according to the economic criteria (the type of agricultural production or the value of obtained economic margins). Therefore nearly 20 years after the establishment of FADN, the European Commission has adopted Decision 85/377/EEC of 7 June 1985 establishing a Community typology for agricultural holdings within the territory of the Community.

The aim of the typology for agricultural holdings is to provide an instrument that makes it possible at the Community level:

- to conduct analyses of the economic situation of agricultural holdings grouped according to economic criteria,
- to compare the economic situation of agricultural holdings between:
  - various classes created according to the rules of this typology,
  - the Member States and regions in Member States,
  - various reference periods.

In the primary classification of agricultural holdings until the end of 2009, the following economic parameters were applied:

- Standard Gross Margin (SGM),
- European Size Unit (ESU).

By means of them, holdings could have been and are grouped according to two criteria:

- economic size,
- type of farming.

❖ Gross Margin

Classification of holdings according to economic parameters was based on the concept of Gross Margin. It reflected the margin of production value in a given agricultural activity over the value of specific costs.

Gross Margin
for a given agricultural activity (crop or livestock production)
means:
the annual output value per
one hectare or one head of animal
reduced by:
specific costs incurred to generate this output.

Gross Margins were calculated on the basis of empirical data derived from reports submitted by agricultural holdings.

The output value for a given activity specified on the basis of SGM parameters is a sum of the value of main and by-products that are subject to trade on the market. They are specified according to farm-gate prices. The output value is increased by the subsidies

for products, area or animals. When calculating the value of livestock production, the value of purchased animals for rearing is deducted.

The set of specific costs deducted from the output value varies in the case of crop and livestock production.

The basic specific costs in the crop production include: seeds, fertilizers and crop protection products; in livestock production these include: feeding stuffs and veterinary products.

The general rule for including particular costs among specific costs is to simultaneously fulfil three criteria, namely:

- beyond a doubt, they can be linked to a given activity,
- their amount is proportional to the scale of production,
- they have direct influence on the production volume (value).

The amount of VAT (Value Added Tax) on sales and VAT on purchases is not included when calculating the Gross Margin.

In accordance with the Commission guidelines, specific costs must not include the following cost components:

- labour,
- use of machinery and buildings,
- fuels and lubricants (in case of glasshouses, the cost of fuels is added to specific costs),
- depreciation of machinery and buildings,
- services.

Components of specific costs are specified according to the prices for supply to an agricultural holding. These costs are reduced by any subsidies for individual cost components.

❖ Standard Gross Margin (SGM)

In the classification of agricultural holdings operating within the European Union until the end of 2009, a method was applicable that used the concept of SGM.

Standard Gross Margin (SGM)
for a given agricultural activity (crop or livestock production)
means:
the standard output value
from one hectare or one head of animal
reduced by:
standard specific costs necessary to generate this output.

Standard Gross Margin is a margin of output value in a given agricultural activity over the value of specific costs **in average production conditions of a given region**. In order to eliminate the impact of changes in production (e.g. due to bad weather) or prices of products and means of production, the calculations use average values from three years of a reference period on the basis of averaged annual data from a given region. This is precisely why the term of Gross Margin was supplemented with the term "standard". The value of SGM is updated every two years for the purpose of taking into account the changes in the price level and technology (output) efficiency.

The margins were calculated for every statistical region and for every conducted activity in reference to 1 ha of crop or 1 head of animal[4]. There are FADN regions within the European Union for which SGM is calculated for 124 activities.

Such a high number of items in the sets of SGMs reflects not only the differentiation of agriculture in the European Union, but it also demonstrates the level of details that assures comparability of achieved results and hence reflecting the real situation in agriculture.

I.4.2. Economic size of an agricultural holding

The economic size of an agricultural holding until the end of 2009 was defined by means of SGMs for all activities carried out in a holding.

The economic size of an agricultural holding was expressed in European Size Units (ESU). Beginning with the „1984" set, the value of the European Size Unit equalled to 1 200 ECU (European Currency Unit used from 1979 to 1998, currently EUR 1 200). This value was determined by the European Commission and was used to express the value of the SGM generated in an agricultural holding covered by the classification. On the basis of the calculated economic sizes expressed in ESU, a given agricultural holding could be classified in one of ten economic size classes.

Diagram 3. Procedure for determining the economic size of agricultural holdings and for expressing it in ESU

Step 1	Determination of agricultural activities carried out at an agricultural holding.
Step 2	Determination of the size of activities carried out at an agricultural holding (the number of hectares or the heads of livestock).
Step 3	Multiplication of the size of each activity of an agricultural holding by a relevant SGM coefficient for the determination of the Standard Gross Margin for each activity carried out at an agricultural holding.
Step 4	Summing up the SGMs for all activities carried out at an agricultural holding. The obtained result defines the Standard Gross Margin of an agricultural holding.
Step 5	If the Standard Gross Margin "1984" (SGM) is applied and higher, the calculated SGM for an entire agricultural holding should be divided by 1 200 (until the time when 1 ESU is specified as the equivalent of EUR 1 200). The obtained results provide information about the economic size of an agricultural holding expressed in ESU.

[4] Exception:
- SGM for mushrooms refers to 100 m^2,
- SGM for poultry refers to 100 heads of animals,
- SGM for bees refers to 1 beehive (i.e. bee family in a hive).

Table 3. Economic size classes for agricultural holdings used in the EU typology

Economic size classes	Economic Size in ESU	Terminology used for economic size classes since 1983/84
I	below 2	Very small
II	2 - < 4	
III	4 - < 6	Small
IV	6 - < 8	
V	8 - < 12	Medium - small
VI	12 - < 16	
VII	16 - < 40	Medium - large
VIII	40 - < 100	Large
IX	100 - < 250	Very large
X	250 and more	

I.4.3. Type of farming of an agricultural holding

The type of farming of a holding is the second criterion used in the classification of agricultural holdings. Until the end of 2009, it was determined on the basis of the share of individual activities in the creation of the total value of the Standard Gross Margin (SGM) in a holding.

In the formula for the determination of types of farming, there were two applicable threshold values amounting to: 1/3 and 2/3 of SGM. According to this formula, the holdings in which no activity has exceeded 1/3 of SGM were defined as "mixed", the ones with a share of two activities within the range of 1/3 to 2/3 of SGM were called "bipolar" and the ones with a share of one activity exceeding 2/3 of SGM were referred to as specialist ones.

The type of farming of a holding, determined according to this criterion, reflected its production system. Depending on the desired level of detail, the types of farming of holdings were divided into:

- 8 general types of farming and a group of non-classified holdings (marked by means of one digit),
- 17 principal types of farming (marked by means of two digits),
- 50 particular types of farming (marked by means of three digits),
- sub-types of 50 particular types of farming (marked by means of four digits),

The last level of the scheme was used optionally by the Member States in which the number of holdings classified under particular types was small.

Diagram 4. General types of farming (GTF) of agricultural holdings in the European Union typology

Type No.	Type name
1	Specialist field crops
2	Specialist horticulture
3	Specialist permanent crops
4	Specialist grazing livestock
5	Specialist granivores
6	Mixed cropping
7	Mixed livestock holdings
8	Mixed crops – livestock
9	Non-classified holdings

An example of a developed four-level typology is illustrated by the scheme of type of farming of specialist granivores holdings, as presented in Diagram 5 [9].

Diagram 5. Presentation of the complete four-level scheme of agricultural holdings in the typology of agricultural holdings in the European Union, using the example of the type of farming of specialist granivores holdings

Code	Level of type	Type name
5	general	Specialist granivores
50	principal	Specialist granivores
501	particular	Specialist pigs
5012	Sub-type of the particular type	Specialist pigs fattening

The scheme described above is extensive enough to distinguish all the types of farming that have already been identified in the European Union.

The described rules of classification of agricultural holdings are applied mainly in the selection of a representative sample of holdings from a given region or country for the needs of FADN. This classification is also used in the EUROSTAT Farm Structure Surveys.

The aim of this system of classification for agricultural holdings is:

- to provide information necessary to form the CAP,
- to make it possible to group holdings at the level of the European Union in order:
    - to analyse the economic situation of agricultural holdings grouped according to the economic criteria (constituting a supplementation of the groupings of holdings according to quantitative criteria such as land resources, number of cows, etc.),
    - to compare the structure of holdings and their economic situation between:
        - types of farming,
        - the Member States and regions,
        - the reference periods.

The economic size of an agricultural holding and its type of farming are two standard criteria for grouping of holdings in the generation of reports describing the work of agricultural holdings functioning in the European Union.

I.5. Community typology for agricultural holdings after principal modification in 2010*

Since 2010, agricultural holdings functioning in the European Union are classified **according to new rules of the Community typology for agricultural holdings** (CTAH). The necessity to introduce the modifications arose after decoupling of payments. Under these circumstances, the SGM coefficients for certain agricultural activities have negative values since the value of output of particular products counted according to market prices did not cover the value of incurred specific costs, which resulted in negative values of SGM coefficients in the Member States.

Table 4. The impact of direct payments on the value of the SGM coefficient for 2 agricultural activities in Finland

Activity	Value of the "2002" SGM coefficient in EUR	
	with subsidies	without subsidies
Piglets less than 20 kg live weight	42,30	-30,00
Male bovine animals 1-2 year old	173,60	-94,00

Source: Author's own calculations according to Eurostat data

This state of affairs has obviously prevented the application thereof to the typology of agricultural holdings. In such a situation, the SGM parameter used so far has been replaced with the parameter of Standard Output (SO). Furthermore, in order to assure increased objectivity of the SO coefficient, its reference period has been extended by 2 years (from 3 to 5).

For the needs of holdings' classification in terms of the size according to the standard economic size of the holding, the ESU used so far, representing an equivalent of EUR 1 200 of the SGM, has been replaced with a range of values of absolute standard output expressed in the European Currency Unit – euro (EUR).

The holding typology structure has been changed as well. The hitherto 4-level structure has been substituted with the introduced 3-level structure with new definition of types of farming.

Along with the modification of parameters used in the CTAH, a deeper methodological change has been made. One of the important reasons for amendment was the need to reflect other gainful activities in CTAH that were previously omitted. To that end, 3 groups of agricultural holdings have been distinguished according to the share of other gainful activities (OGA) in the total value of revenue of an agricultural holding (up to 10%, from over 10 to 50 %, over 50%).

Commission Regulation (EC) No 1242/2008 of 8 December 2008 establishing a Community typology for agricultural holdings (OJ 13.12.2008, L 335/3) is the legal act establishing the new typology of agricultural holdings.

The document RI/CC 1500 TYPOLOGY HANDBOOK for the Community typology for agricultural holdings is applicable to the new typology.

* Compiled with the contribution of Izabela Cholewa.

I.5.1. Criteria used in the Community typology for agricultural holdings

The economic parameter of Standard Output applies to the main typology of agricultural holdings.

Holdings are classified by means of this parameter according to two features:

- economic size,
- type of farming.

❖ Standard Output (SO)

The concept of SO applies to the Community typology for agricultural holdings that was modified in 2010. It resulted in the need for developing a new set of SO coefficients that replace the SGM coefficients used so far.

Standard Output (SO) for a given crop or livestock
means:
the average output value from 5 years for a specific agricultural activity (involving crop or livestock production) obtained from one hectare or one head of animal.

The SO coefficient is the average output value from 5 years for a specific agricultural activity in the average production conditions for a given region. In order to eliminate the fluctuation of the output value (caused e.g. by bad weather) or of the prices of products and production materials, the calculations adopt average values from five years of a reference period on the basis of averaged annual data from a given region [17]. Diagram 6 and Diagram 7 present the method for calculating SO for crop and livestock output.

Diagram 6. The method for calculating the output value for crop activity for the needs of determining the SO coefficient

			Output value
Standard Output	=	+	main product (e.g. wheat grain)
		+	by - product (e.g. straw)

Diagram 7. The method for calculating the output value for livestock activity for the needs of determining the SO coefficient

			Output value		
Standard output	=	+	main product (e.g. milk)	–	Replacement value (e.g. the relevant part of an in-calf heifer)
		+	by - product (e.g. meat)		

The output value for a given activity is a sum of values of main and by-products. They are specified according to net farm-gate prices (without VAT). Direct payments are not added to the production value. When calculating the output value in the case of livestock activity, only the replacement value is deducted.

The conversion of the SO coefficient value for particular activities of crop and livestock production impacts on two classifying criteria, namely the economic size and the type of farming for an agricultural holding. The level and nature of these changes in relation to the old typology

based on the SGM parameters are determined by the fact that subsidies are not included in the output and the specific costs thereof in the determination of the SO coefficient value.

I.5.2. Economic size of an agricultural holding

The economic size of an agricultural holding is determined by means of the sum of SOs for all the agricultural activities carried out in a holding. A significant change under the CTAH consists in resignation from the application of ESU when defining the economic size classes of agricultural holdings – from 2010 these classes are expressed by means of the SO value in EUR. The number of economic size classes has also increased to 14. On the basis of the calculated SO values expressed in EUR, a given agricultural holding is classified in a relevant economic size class.

Diagram 8. Procedure for determining the economic size of agricultural holdings and for expressing it in the European currency (EUR)

Step 1	Determination of agricultural production activities carried out at an agricultural holding.
Step 2	Determination of the physical size of individual production activities carried out at an agricultural holding (the number of hectares or the heads of livestock).
Step 3	Multiplication of the size of each agricultural production activity by the relevant SO coefficient in order to calculate the SO value for each activity carried out at an agricultural holding.
Step 4	Summing up the SO values for all the activities carried out at an agricultural holding. The obtained result expresses the SO value of an entire agricultural holding. The obtained result provides information about the economic size of an agricultural holding expressed in the European currency (EUR).

Table 5. New economic size classes for agricultural holdings used in the EU typology

nES6		nES9		nES	Scope in EUR
				1	EUR < 2 000
1	Very small	1	Very small	2	2 000 ≤ EUR < 4 000
				3	4 000 ≤ EUR < 8 000
2	Small	2	Small	4	8 000 ≤ EUR < 15 000
		3	Small	5	15 000 ≤ EUR < 25 000
3	Medium - small	4	Medium - small	6	25 000 ≤ EUR < 50 000
4	Medium - large	5	Medium - large	7	50 000 ≤ EUR < 100 000
5	Large	6	Large	8	100 000 ≤ EUR < 250 000
		7	Large	9	250 000 ≤ EUR < 500 000
6	Very large	8	Very large	10	500 000 ≤ EUR < 750 000
				11	750 000 ≤ EUR < 1 000 000
		9	Very large	12	1 000 000 ≤ EUR < 1 500 000
				13	1 500 000 ≤ EUR < 3 000 000
				14	EUR ≥ 3 000 000

I.5.3. Type of farming of an agricultural holding

The type of farming of an agricultural holding is the second criterion used in the CTAH. It is defined on the basis of the share of individual agricultural activities in the creation of the total SO value in a holding.

In the formula for the determination of types of farming, there are two applicable threshold values amounting to: 1/3 and 2/3 of the total SO value. According to this formula, the holdings in which no activity has exceeded 1/3 of SO are defined as "mixed", the ones with a share of two activities within the range of 1/3 to 2/3 of SO are called "bipolar" and the ones with a share of one activity group exceeding 2/3 of SO are referred to as specialist ones.

The type of farming of a holding, determined according to this criterion, reflects its production system. Depending on the desired level of detail, the types of farming of holdings are divided into:

- 8 general types of farming and a group of non-classified holdings (marked by means of one digit),
- 21 principal types of farming and a group of non-classified holdings (marked by means of two digits),
- 61 particular types of farming and a group of non-classified holdings (marked by means of three digits).

Diagram 9. General types of farming (GTF) of agricultural holdings in the CTAH

Type No.	Type name
1	Specialist field crops
2	Specialist horticulture
3	Specialist permanent crops
4	Specialist grazing livestock
5	Specialist granivores
6	Mixed cropping
7	Mixed livestock
8	Mixed crops – livestock
9	Non-classified holdings

Pursuant to the new CTAH rules, the scheme of types of farming for agricultural holdings has been reduced from a 4-level to a 3-level one. The 3-level scheme of types of farming is illustrated using the example of the type of farming of specialist granivores holdings, as presented in Diagram 10 [20].

Diagram 10. Presentation of the complete 3-level scheme of agricultural holdings according to the new typology of agricultural holdings in the European Union, using the example of the type of farming of specialist granivores holdings

Code	Type	Type name
5	general	Specialist granivores
51	principal	Specialist pigs
512	particular	Specialist pig fattening

I.5.4. Other gainful activities directly related to the agricultural holding

Due to the increasing importance of multi-functionality of agricultural holdings, the typology was supplemented with an additional "classification" in which the criterion is constituted by the share of "Other gainful activities directly related to the holding" (OGA) in the total turnover of an agricultural holding. Gainful activities directly related to the agricultural holding comprise the activities under which either the resources of the agricultural holdings (area, buildings, machinery, etc.) or the agricultural products of such holdings are used.

Diagram 11. Formula for calculating the percentage of OGA directly related to the agricultural holding in the total turnover of an agricultural holding

$$\text{OGA (\%)} = \frac{\text{Turnover of OGA directly related to the holding}}{\text{Total holding turnover}}$$

(agricultural + OGA directly related to the holding + direct payments)

On the basis of the calculated share of OGA in the total holding turnover, expressed as percentage, the given agricultural holding can be classified in one of the three OGA classes [17].

Diagram 12. OGA classes for agricultural holdings in the European Union typology

OGA class	Title	Limits in %
I	Typically agricultural	$0 \leq \% \leq 10$
II	Mixed with mostly agricultural production	$10 < \% \leq 50$
III	Mixed with mostly OGA	$50 < \% < 100$

OGA is not taken into account in the typology used on the basis of the agricultural production activities, which means that OGA is not included both in the economic size and the type of farming of an agricultural holding.

In order to get an opportunity to analyse time series after the principal change of the CTAH, each Member State has been obliged to create a "transitional" set of regional SO „2004" coefficients from the three-years 2003-2005 reference period. Owing to that, it is possible to carry out parallel classifications of agricultural holdings according to the old and new CTAH rules. The set of SO „2007" coefficients from the 2005-2009 reference period represents the first classical set of coefficients calculated according to the new CTAH rules.

I.6. Selection of the sample of agricultural holdings from the FADN field of observation

Liaison Agencies from each Member States develop annual plans for selection of agricultural holdings to be included in FADN. Following their development and approval by FADN National Committees, these plans are submitted for approval to the Community Committee that supervises the FADN.

Table 6. The number of holdings in the sample and within the FADN field of observation and the average weight of holdings in individual Member States and the total number in the European Union in 2011

No.	EU Member State	Number of holdings in the FADN field of observation	Sample size	Average holding weight in the sample	Percentage (%) of the country in FADN
1	Austria	92 790	2 034	45,6	2,5
2	Belgium	30 450	1 252	24,3	1,5
3	Bulgaria	115 650	2 249	51,4	2,8
4	Cyprus	10 240	470	21,8	0,6
5	Czech	14 810	1 417	10,5	1,7
6	Denmark	28 700	1 822	15,8	2,2
7	Estonia	8 100	659	12,3	0,8
8	Finland	39 740	890	44,7	1,1
9	France	295 880	7 413	39,9	9,1
10	Greece	323 710	3 714	87,2	4,5
11	Spain	523 820	8 175	64,1	10,0
12	The	51 640	1 461	35,3	1,8
13	Ireland	103 350	1 051	98,3	1,3
14	Lithuania	53 360	1 105	48,3	1,4
15	Luxembourg	1 620	450	3,6	0,6
16	Latvia	21 930	1 000	21,9	1,2
17	Malta	3 090	522	5,9	0,6
18	Germany	207 180	8 928	23,2	10,9
19	Poland	725 570	11 076	65,5	13,5
20	Portugal	109 970	2 299	47,8	2,8
21	Romania	1 042 220	5 746	181,4	7,0
22	Slovakia	3 900	531	7,3	0,6
23	Slovenia	39 930	929	43,0	1,1
24	Sweden	28 340	1 013	28,0	1,2
25	Hungary	101 740	1 921	53,0	2,3
26	The UK	92 410	2 724	33,9	3,3
27	Italy	785 480	10 913	72,0	13,3
	The EU	4 855 620	81 764	59,4	100,0

Source: Author's own elaboration based on Standard Results published on the European Commission website.

The agricultural holdings within the FADN field of observation vary to a great extent in terms of economic size and type of farming. In order to properly reflect this diversity in the sample, the Liaison Agency divides the FADN field of observation into stratums. Disregarding this action in the process of selecting the sample could cause improper representation of certain types of holdings (e.g. large dairy farms in a particular region or small holdings producing sheep in another region). Three following criteria apply to the stratification of the group of holdings:

- regional location,
- economic size,
- type of farming.

I.7. The Farm Return

After the accounting year, a Liaison Agency from each Member State submits a Farm Return for agricultural holdings belonging to the representative sample of holdings, approved ultimately by the Commission. Liaison Agencies of all Member States submit these returns in the form of electronic files to the European Commission.

The scope, format and method for entering the data necessary for the FADN Farm Return are described in detail in Commission Regulation [19]. Owing to that it is possible to create common collections of data from the holdings functioning within the European Union.

The information included in the Farm Return are structured according to the following thematic groups:

- General information on the holding (Table A),
- Type of occupation (Table B),
- Labour (Table C),
- Assets (Table D),
- Quotas and other rights (Table E),
- Debts (Table F),
- Value added tax (VAT) (Table G),
- Inputs (Table H),
- Crops (Table I),
- Livestock production (Table J),
- Animal products and services (Table K),
- Other gainful activities directly related to the farm (Table L),
- Subsidies (Table M).

The scope and level of details of accounting data from agricultural holdings causes that a Farm Return might include even up to 2 000 variables [16].

I.8. Main users of the FADN database

Community institutions, in particular the European Commission, are the earliest and main recipients of information provided by FADN. The demand for information submitted by these institutions is prioritised by the E.3 Directorate-General for Agriculture and Rural Development (DG Agri).

Pursuant to the decision of the European Commission, the main recipients are constituted by the entities serving the Directorate-General for Agriculture and Rural Development. They include the entities responsible for management of common agricultural markets (for instance: the market of cereals, beef and veal or milk), for management of measures concerning the development of rural areas and general analyses from the point of view of the CAP. The FADN database also serves the clients from institutions from outside the Community. Each year, the DG E.3 (DG Agri E.3) is responsible for numerous information demands submitted by public and private organisations, such as the Ministries of Agriculture of various Member States, universities and research and development institutes, as well as trade organisation of agricultural producers.

As mentioned before, the main task of FADN is to meet the demand of the European Commission for information on agricultural holdings. These measures are not aimed at the establishment of statistics on the agriculture sector, but the income and financial situation of various agricultural holdings.

The accounting data of agricultural holdings covered by the FADN data base are used to calculate the set of indicators for income and productivity, production costs and structure of farm's assets. The Standard Results from the group of agricultural holdings grouped according to various criteria, including by default: according to economic size and type of farming of agricultural holdings, represent the main information component for programming of the CAP. They are useful both to identify and assess the tools and means used in the creation of the CAP. In this context, the FADN database provides the principal contribution to the development of analyses and assessment of the impact of measures designed during the CAP reform.

High usefulness of FADN results from the fact that it is a harmonised system of representative research using precisely defined terms with precisely developed method for selecting the sample of holdings and transparent control procedures. Hence, the data obtained by FADN are representative for specific collections of agricultural holdings functioning within various areas of the European Union. Furthermore, due to the applied multi-level data quality control procedure, it provides reliable data. It assures the possibility of reflecting the actual results of agricultural holdings operating within the Community.

I.9. FADN Standard Results

A team of DG AGRI employees responsible for the functioning of FADN develops various studies on the basis of the data collected under FADN. They include the so-called FADN Standard Results.

Standard Results are formed by a set of statistical data calculated on the basis of farm returns submitted by Liaison Agencies of Member States. These results describe the basic information on the financial situation of various groups of holdings operating within the Community.

For the needs of comparability between the variables used in FADN and the variables used by other institutions providing the data from the area of agricultural statistics, the European Commission has precisely defined each variable that is found in the FADN Standard Results.

All the variables of Standard Results referring to the values are quoted in EUR. It makes it possible to aggregate the results of individual Member States at the Community level and to directly compare the results between the Member States.

In order to prevent the identification of holdings from which the accounting data were obtained, the Commission does not publish the averaged results from group of less than 15 holdings [15].

Table 7. Size of the FADN field of observation and sample in 2011 broken down by EU Member States, as described by the FADN Standard Results, level I

EU Member State	Threshold for economic size	Number of farms represented in FADN Standard Results		Number of farms in the sample in the FADN Standard Results	
	EUR	No of farms	%	No of farms	%
Bulgaria	2 000	115 650	2,38	2 249	2,75
Romania	2 000	1 042 220	21,46	5 746	7,03
Cyprus	4 000	10 240	0,21	470	0,57
Greece	4 000	323 710	6,67	3 714	4,54
Spain	4 000	523 820	10,79	8 175	10,00
Ireland	4 000	103 350	2,13	1 051	1,29
Lithuania	4 000	53 360	1,10	1 105	1,35
Latvia	4 000	21 930	0,45	1 000	1,22
Malta	4 000	3 090	0,06	522	0,64
Poland	4 000	725 570	14,94	11 076	13,55
Portugal	4 000	109 970	2,26	2 299	2,81
Slovenia	4 000	39 930	0,82	929	1,14
Hungary	4 000	101 740	2,10	1 921	2,35
Italy	4 000	785 480	16,18	10 913	13,35
Austria	8 000	92 790	1,91	2 034	2,49
Czech Republic	8 000	14 810	0,31	1 417	1,73
Finland	8 000	39 740	0,82	890	1,09
Denmark	15 000	28 700	0,59	1 822	2,23
Slovakia	15 000	3 900	0,08	531	0,65
Sweden	15 000	28 340	0,58	1 013	1,24
Belgium	25 000	30 450	0,63	1 252	1,53
France	25 000	295 880	6,09	7 413	9,07
The Netherlands	25 000	51 640	1,06	1 461	1,79
Luxembourg	25 000	1 620	0,03	450	0,55
Germany	25 000	207 180	4,27	8 928	10,92
The UK	25 000	92 410	1,90	2 724	3,33
EU FADN		4 855 620	100,00	81 764	100,00

Source: Author's own elaboration based on Standard Results published on the European Commission website. Commission Regulation (EU) No 1291/2009 of 18 December 2009 concerning the selection of returning holdings for the purpose of determining incomes of agricultural holdings.

In 2011, there were over 80 000 agricultural holdings in the European Union covered by FADN, and they represented nearly 5 million commercial agricultural holdings from 27 Member States.

The content-related uniformity of the system makes it possible to compare the results of agricultural holdings, e.g. the Polish with the Finnish ones (see Table 8).

Table 8. FADN Standard Results from 2011 concerning the average holding in Poland and Finland (monetary values are expressed in the European currency, EUR).

Specification		Country	
		Poland	Finland
SAMPLE AND POPULATION			
SYS02	Farms represented	725 570	39 740
SYS03	Sample farms	11 076	890
STRUCTURE & YIELDS			
SE005	Economic size – EUR	23 700	76 500
SE010	Total labour input – AWU	1,72	1,31
SE015	Unpaid labour input – AWU	1,49	1,03
SE020	Paid labour input – AWU	0,23	0,28
SE025	Total Utilised Agricultural Area – ha	19	54
SE030	Rented U.A.A. – ha	5	19
SE035	:Cereals – ha	11	25
SE041	:Other field crops – ha	2	5
SE042	:Energy crops – ha	0,01	0,00
SE046	:Vegetables and flowers – ha	0,18	0,16
SE050	:Vineyards – ha	0,00	0,00
SE054	:Permanent crops – ha	0,49	0,25
SE055	::Orchards – ha	0,47	0,10
SE065	::Other permanent crops – ha	4,56	22,49
SE071	:Forage crops – ha	0,08	0,12
SE072	:Agricultural fallows – ha	0,14	1,29
SE073	:Set aside – ha	0,98	0,00
SE075	Woodland area – ha	13	29
SE080	Total livestock units – LU	3,22	8,10
SE085	Dairy cows – LU	2,88	10,37
SE090	Other cattle – LU	0,05	0,57
SE095	Sheep and goats – LU	5,94	7,47
SE100	Pigs – LU	0,85	1,88
SE105	Poultry – LU	50,26	37,94
SE110	Yield of wheat – kg/ha	86,84	-
SE115	Yield of maize – kg/ha	1,48	1,13
SE120	Stocking density – LU/ha	4 936	8 707
SE125	Milk yield – kg/cow	23 700	76 500

Table 8. FADN Standard Results from 2011 concerning the average holding in Poland and Finland (monetary values are expressed in the European currency, EUR).

	OUTPUT		
SE131	**Total output**	29 353	89 958
SE135	**Total output crops and crop production**	16 017	37 527
SE136	Total crop output/ha	850	713
SE140	:Cereals	7 811	14 634
SE145	:Protein crops	167	274
SE146	:Energy crops	1	0
SE150	:Potatoes	834	1 866
SE155	:Sugar beet	531	454
SE160	:Oil-seed crops	1 327	1 433
SE165	:Industrial crops	142	198
SE170	:Vegetables & flowers	2 726	17 396
SE175	:Fruit	1 560	284
SE180	:Citurs fruit	0	0
SE185	:Wine and grapes	0	0
SE190	:Olives & olive oil	0	0
SE195	:Forage crops	521	789
SE200	:Other crop output	399	199
SE206	**Total output livestock & livestock products**	12 919	46 258
SE207	Total livestock output / LU	980	1 619
SE211	:Change in value of livestock	233	336
SE216	:Cows' milk & milk products	4 470	28 936
SE220	:Beef and veal	1 791	6 772
SE225	:Pigmeat	4 890	7 059
SE230	:Sheep and goats	16	476
SE235	:Poultrymeat	987	1 170
SE240	:Eggs	541	1 096
SE245	:Ewes' and goats' milk	5	35
SE251	:Other livestock and products	221	713
SE256	**Other output**	417	6 173
SE260	:Farmhouse consumption	371	159
SE265	:Farm use	3 552	4 894

Table 8. FADN Standard Results from 2011 concerning the average holding in Poland and Finland (monetary values are expressed in the European currency, EUR).

	COSTS		
SE270	**Total inputs**	24 114	118 465
SE275	**Total intermediate consumption**	17 956	80 298
SE281	**Total specific costs**	12 254	36 840
SE284	Specific crop costs / ha	268	277
SE285	:Seeds and plants	1 222	3 328
SE290	::Seeds and plants home-grown	358	687
SE295	:Fertilisers	2 397	5 950
SE300	:Crop protection	1 047	1 523
SE305	:Other crop specific costs	486	4 272
SE309	Specific livestock costs / LU	540	762
SE310	:Feed for grazing livestock	2 107	11 244
SE315	:: Feed for grazing livestock home-grown	1 277	2 480
SE320	:Feed for pigs & poultry	4 476	6 633
SE325	:: Feed for pigs & poultry home-grown	1 884	1 728
SE330	:Other livestock specific costs	518	3 889
SE331	:Forestry specific costs	1	0
SE336	**Total farming overheads**	5 703	43 459
SE340	:Machinery & building current costs	1 426	11 410
SE345	:Energy	2 837	14 046
SE350	:Contract work	694	6 986
SE356	:Other direct inputs	746	11 017
SE360	**Depreciation**	4 216	24 375
SE365	**Total external factors**	1 942	13 792
SE370	:Wages paid	1 327	6 622
SE375	:Rent paid	324	4 001
SE380	:Interest paid	291	3 169

Table 8. FADN Standard Results from 2011 concerning the average holding in Poland and Finland (monetary values are expressed in the European currency, EUR).

	SUBSIDIES		
SE600	**Balance current subsidies & taxes**	5 610	49 200
SE605	**Total subsidies – excluding on investments**	5 890	49 568
SE610	:Total subsidies on crops	20	3 108
SE611	::Compensatory payments/area payments	0	0
SE612	::Set aside premiums	0	0
SE613	::Other crops subsidies	9	2 934
SE615	:Total subsidies on livestock	35	10 562
SE616	::Subsidies dairying	35	5 790
SE617	::Subsidies other cattle	0	3 180
SE618	::Subsidies sheep & goats	0	246
SE619	::Other livestock subsidies	0	1 346
SE621	:Environmental subsidies	444	9 683
SE622	:LFA subsidies	407	13 154
SE623	:Other rural development payments	240	794
SE624	:Total support for rural development	1 092	23 631
SE625	:Subsidies on intermediate consumption	193	0
SE626	:Subsidies on external factors	0	0
SE630	:Decoupled payments	3 211	11 491
SE631	:Single Farm payment	0	11 491
SE632	:Single Area payment	3 211	0
SE640	:Additional aid	0	0
SE650	:Total aid for Article 68	47	1 521
	BALANCES SUBSIDIES AND TAXES		
SE600	**Balance current subsidies & taxes**	5 610	49 200
SE605	**Total subsidies – excluding on investments**	5 890	49 568
SE395	**VAT balance** (excluding on investments)	-38	0
SE390	**Taxes**	242	368
SE405	**Balance subsidies & taxes on investments**	27	979
SE406	Subsidies on investments	254	979
SE407	Payments to dairy outgoers	0	0
SE408	VAT on investments	227	0
	INCOME		
SE131	**Total output**	29 353	89 958
SE275	**Total intermediate consumption**	17 956	80 298
SE600	**Balance current subsidies & taxes**	5 610	49 200
SE410	**Gross Farm Income**	17 006	58 860
SE360	**Depreciation**	4 216	24 375
SE415	**Farm Net Value Added**	12 791	34 485
SE365	**Total external factors**	1 942	13 792
SE405	**Balance subsidies & taxes on investments**	27	979
SE420	**Family Farm Income**	10 876	21 672
	INCOME PER AWU		
SE425	**Farm Net Value Added / AWU**	7 438	26 375
SE430	**Family Farm Income / FWU**	6 977	20 969

Table 8. FADN Standard Results from 2011 concerning the average holding in Poland and Finland (monetary values are expressed in the European currency, EUR).

BALANCE SHEET			
SE436	**Total assets**	149 761	412 064
SE441	**Total fixed assets**	131 366	339 045
SE446	:Land, permanent crops & quotas	73 841	171 660
SE450	:Buildings	32 979	87 502
SE455	:Machinery	21 392	70 770
SE460	:Breeding livestock	3 154	9 114
SE465	**Total current assets**	18 394	73 018
SE470	:Non-breeding livestock	3 685	9 100
SE475	:Stock of agricultural products	6 954	13 540
SE480	:Other circulating capital	7 755	50 378
SE485	**Total liabilities**	9 033	114 246
SE490	:Long and medium-term loans	6 297	106 840
SE495	:Short-term loans	2 736	7 407
SE501	**Net worth**	140 728	297 817
FINANCIAL INDICATORS			
SE506	**Change in net worth**	4 994	19 799
SE510	Average farm capital	75 942	257 120
SE516	Gross Investment on fixed assets	3 537	23 945
SE521	Net Investment on fixed assets	-679	-430
SE526	Cash Flow (1)	13 332	44 502
SE530	Cash Flow (2)	10 142	21 995

II. THE SYSTEM OF COLLECTING AND USING ACCOUNTING DATA FROM AGRICULTURAL HOLDINGS (POLISH FADN)

As part of adjusting the Polish law to the European Union's *acquis communautaire*, on 29 November 2000 the Sejm of the Republic of Poland passed a bill on collecting and using accounting data from agricultural holdings (Official Journal of the Republic of Poland of 2001, No3, Item 20, as amended). It specifies the system of collecting and using accounting data from agricultural holdings, aimed at:

- specifying farms' annual income,
- carrying out economic analyses of farms and evaluating the agricultural and agricultural market situation.

This Act specifies in detail the tasks of the System's central level, comprising the National Committee and the Liaison Agency. The tasks of the Liaison Agency include signing contracts with accounting offices concerning the collection of accounting data from agricultural holdings that are representative for the observation and indicated in enclosed lists.

II.1. Organisational and functional structure of the system of collecting and using accounting data from agricultural holdings in Poland (Polish FADN)

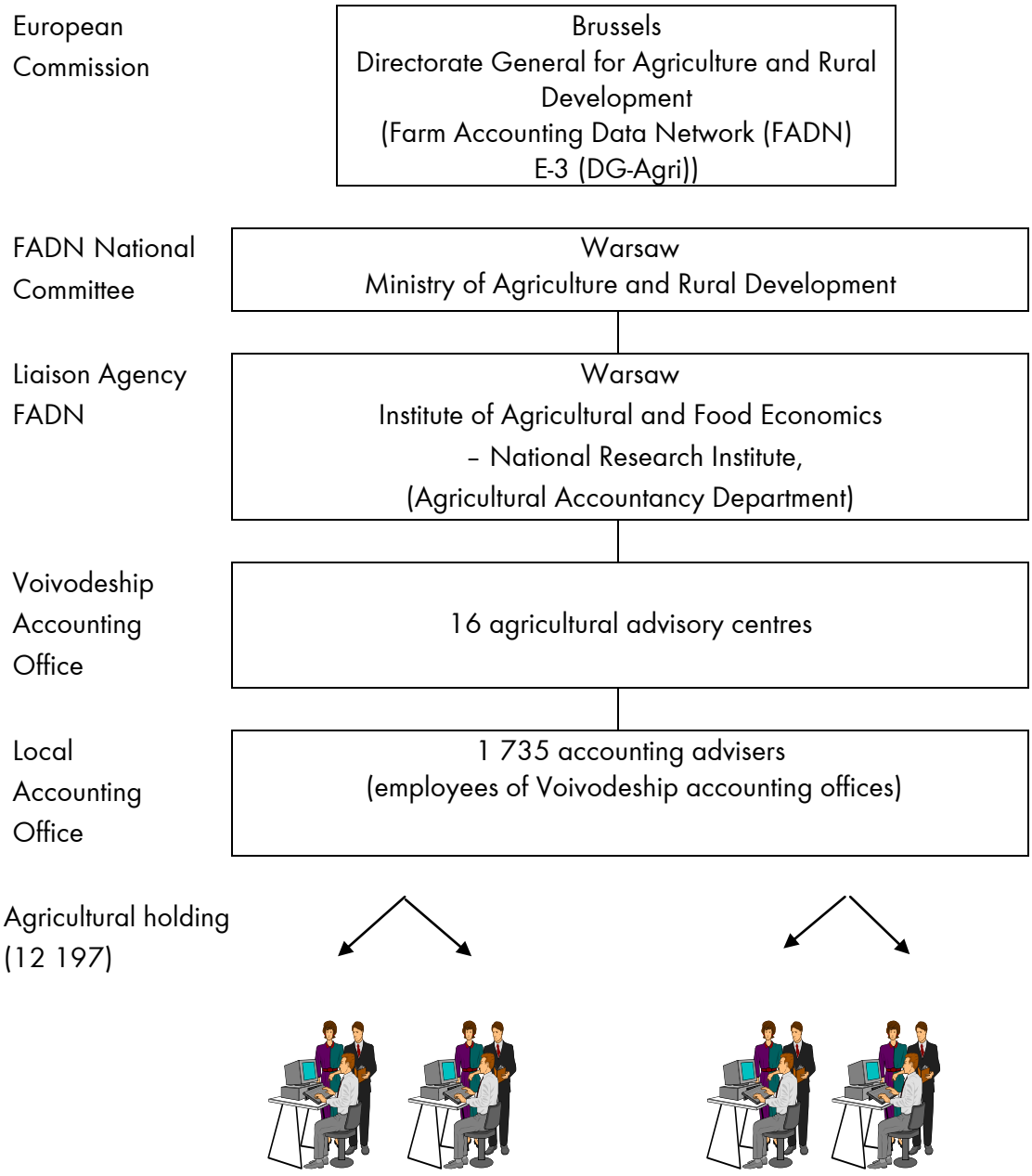
The name "Polish FADN" is a working name, arranged for practical reasons for the System of Collecting and Using Accounting Data from Agricultural Holdings. The cooperation between the system participants, starting from the Liaison Agency, through accounting offices, accounting advisors to farmers, takes place on the basis of annually concluded contracts. It has been primarily assumed that the director of the accounting office at a Voivodeship level will conclude a contract with the Liaison Agency concerning the collection of data from agricultural holdings according to the location of selected holdings. The Act specifies that the accounting office with which the contract concerning the collection of accounting data will be concluded needs to guarantee objective and reliable transfer of accounting data.

Agricultural advisory centres, subordinate to local governments at the Voivodeship level since 1.08.2009 and cooperating with farmers, function as accounting offices.

According to the Act, contracts concluded between system participants specify the scope of accounting data and dates of their submission, conditions for the protection

of accounting data from a farm and conditions for the protection of farm holders' personal data under provisions indicated in relevant personal data protection regulations.

Diagram 13. Organisational structure of the system of collecting and using accounting data from agricultural holdings (Polish FADN) in 2014



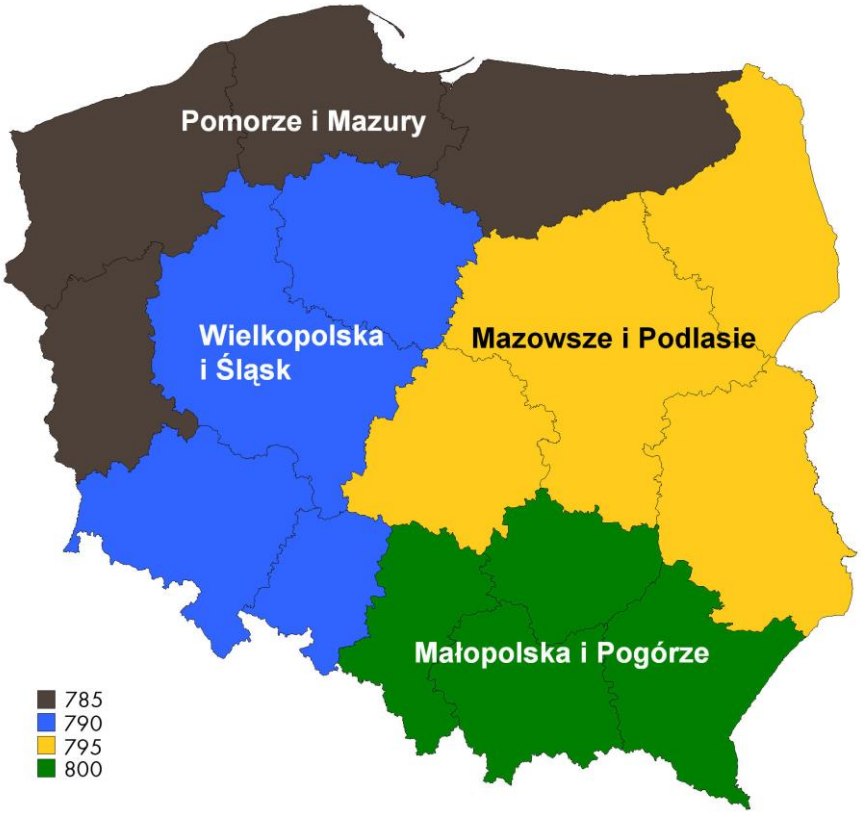
II.2. General population of agricultural holdings in Poland, field of observation and representative sample of holdings in the Polish FADN

Agricultural holdings functioning in Poland have been classified according to the Community typology for agricultural holdings (Commission Regulation No 1242/2008/EC of 8 December 2008 establishing a Community typology for agricultural holdings, *as amended*).

The basis for proceeding a new classification of agricultural holdings functioning on the territory of Poland were:

1. Four FADN regions set out in Poland,
2. Four sets of SO „2007" coefficients (for each FADN region),
3. Farm Structure Serveys 2010.

Diagram 14. Classification of FADN regions in Poland



Source: Commission Regulation (EU) No 1291/2009 of 18 December 2009 concerning the selection of returning holdings for the purpose of determining incomes of agricultural holdings.

Proceeding in accordance with guidelines provided by the Commission Regulation on the European typology for agricultural holdings, 1 506 620 agricultural holdings in the CSO statistical register have been classified. This population has generated ca. PLN 74 billion of the SO value.

On the basis of SO value generation structure including all classified agricultural holdings, a minimum SO threshold for the group of holdings meeting the condition of generating ca. 90% of SO value has been established. For Poland, this threshold stands for EUR 4 000 of SO value.

Table 9. Equivalent of minimum economic size thresholds for agricultural holdings in Poland by FADN regions, expressed in agricultural activity physical units (according to SO "2007")

Activity	FADN region	Measurement unit	SO value in PLN	SO value in EUR	EUR 4 000 SO equivalent
Common wheat	Pomorze i Mazury	ha	2 483	635	6,3
	Wielkopolska i Śląsk	ha	2 707	692	5,8
	Mazowsze i Podlasie	ha	2 098	537	7,5
	Małopolska i Pogórze	ha	2 167	554	7,2
Apple orchards	Pomorze i Mazury	ha	6 609	1 691	2,4
	Wielkopolska i Śląsk	ha	7 947	2 033	2,0
	Mazowsze i Podlasie	ha	8 745	2 237	1,8
	Małopolska i Pogórze	ha	7 472	1 911	2,1
Dairy cows	Pomorze i Mazury	heads	4 826	1 234	3,2
	Wielkopolska i Śląsk	heads	5 011	1 282	3,1
	Mazowsze i Podlasie	heads	4 385	1 122	3,6
	Małopolska i Pogórze	heads	3 669	939	4,3
Pigs	Pomorze i Mazury	heads	856	219	18,3
	Wielkopolska i Śląsk	heads	866	222	18,0
	Mazowsze i Podlasie	heads	947	242	16,5
	Małopolska i Pogórze	heads	901	230	17,4

By means of physical units of relevant agricultural products, data included in Table 9 illustrate the minimal economic size of an agricultural holding to qualify to a Polish FADN field of observation.

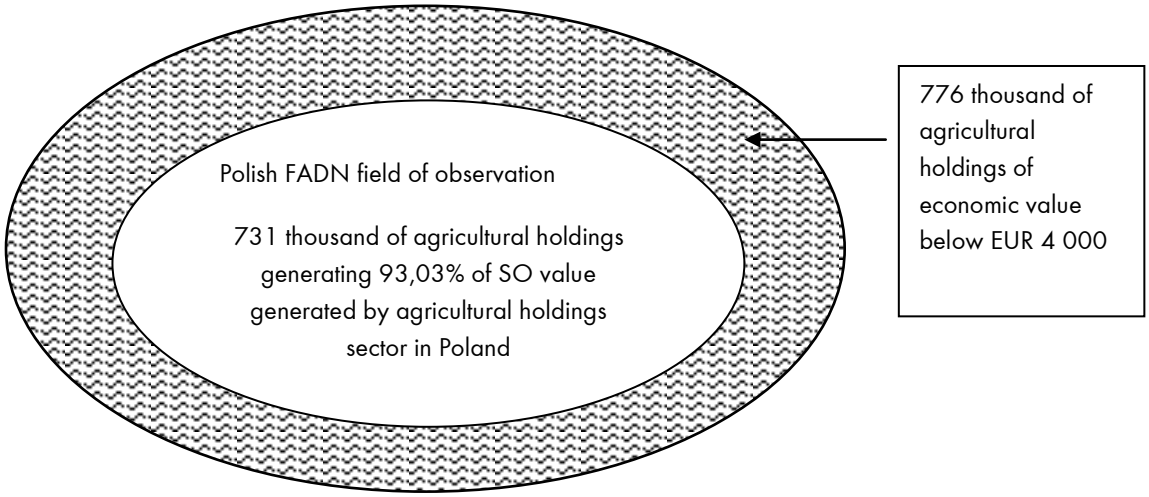
730 879 agricultural holdings, generating 93,03% of SO value generated by all agricultural holdings classified in Poland, fall within the Polish FADN field of observation specified according to minimum SO value amounting to EUR 4 000 [8].

Using appropriate statistical tools, a representative sample of agricultural holdings was determined for the Polish FADN field of observation. Previously, the field of observation was divided into strata according to three criteria:

- region,
- economic size,
- type of farming.

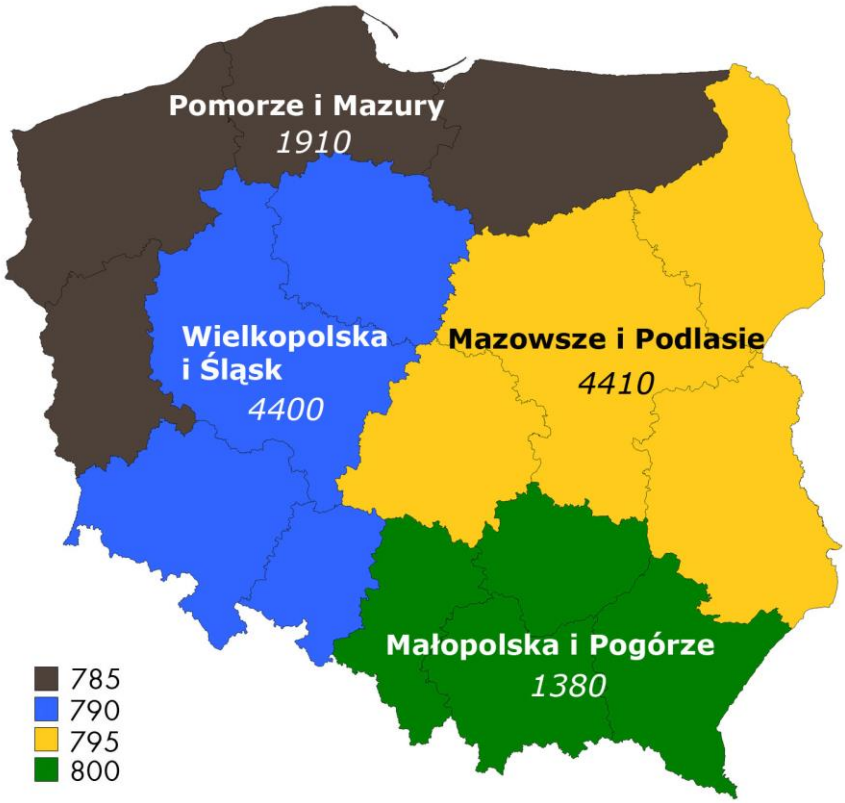
A determined sample of the Polish FADN, accepted by the FADN National Committee and European Commission, amounts to 12 100 holdings [22]. This means that one agricultural holding from the Polish FADN sample represents, on average, 61 holdings within the Polish FADN field of observation.

Diagram 15. Polish FADN field of observation



The agricultural holdings selection plan describes in detail the sample of holdings that are statistically representative for the Polish FADN field of observation, specified separately for each of four FADN regions. The density of holdings in particular regions varies greatly. This is due to a different number of holdings and a different agrarian structure.

Diagram 16. Distribution of a sample of agricultural holdings carrying out their accounting tasks under the Polish FADN by four regions (in force from 2013)



Source: Plan wyboru próby gospodarstw rolnych Polskiego FADN dla roku obrachunkowego 2014 (wersja z dn. 05-09-2012 r.), Warszawa 2013.

II.3. Polish FADN's objectives

II.3.1. Main objective

The objective of the Polish FADN is to provide accounting data from a representative sample of agricultural holdings to FADN. These data are transferred in the form of Farm Returns and are of a unique, legally determined structure.

In accordance with the Council Regulation in force, each EU Member States is obliged to submit accounting data from a relevant number of agricultural holdings to FADN.

II.3.2. Indirect objectives

The system's indirect objectives are:

- Providing data to decision-making bodies of the Republic of Poland.

Member States' representatives need accounting data from agricultural holdings to negotiate national agriculture support programmes on the European Commission's forum. National support programmes require an acceptance from the representatives of other Member States.

- Supplying farmer representative organisations with data.

Farmer representatives need accounting data from agricultural holdings to negotiate the conditions of agricultural holdings' functioning with the Polish authorities, as well as to formulate motions concerning the national support programmes for particular groups of holdings that need to be accepted by Member States' representatives to Polish representatives at the European Commission.

- Supplying the research community with data.

Accounting data from agricultural holdings form an empirical basis for analysing and verifying hypotheses.

- Supplying farmer advisors with data,
- Supplying farmers taking part in the Polish FADN with data.

II.4. Source documents of the Polish FADN

Methodological assumptions regarding accounting performed under the Polish FADN require the acquisition of a precisely specified set of accounting data from an agricultural holding. Depending on a legal status and relation to the Act on accounting, various forms are used to gather accounting data for the needs of FADN.

II.4.1. Individual agricultural holdings

In order to facilitate the collection of accounting data from an individual agricultural holding and to control their completeness, the following data collecting documents have been prepared:

- The Manual of Keeping Records in Books of Accounts,
- Coding Manual and List of Codes,
- List of Assets and Liabilities (LAL),
- List of Selected Assets and Liabilities (LSAL),
- Book of Receipts and Expenditures (BRE),
- Book of Events in Agricultural Holding (BEAH).

The Manual of Keeping Records in Books of Accounts is a document aimed at explaining rules and providing direct help in performing the accounting in an agricultural holding. It contains a detailed description of adopted accounting rules, concepts used and the source data registration guidebook for the following three documents: List of Assets and Liabilities, Book

of Receipts and Expenditures and the Book of Events in individual agricultural holding. The last part of the manual contains measurement units effective for the Polish FADN.

Coding Manual and List of Codes is a document explaining a relevant labelling of account book records to get the possibility to use information technology at providing accounting services.

List of Assets and Liabilities and the List of Selected Assets and Liabilities are documents used to keep records of the agricultural holding's own resources and their external financing sources. In this accounting system, such data are possible to receive only on the basis of a physical inventory. In the first year of accounting in an agricultural holding, this inventory (stocktaking) must be carried out at the beginning of the year and recorded in a document called **List of Assets and Liabilities (LAL)**. Another inventory to be carried out in the first year is an inventory of certain assets and liabilities at the end of an accounting year. This inventory needs to be registered in a document entitled **List of Selected Assets and Liabilities (LSAL)**.

In the next accounting years only inventories of certain assets and liabilities are taken at the end of each accounting year, since the status as of end of the previous accounting year automatically becomes the status as of the beginning of the following period.

To facilitate the inventory, tables prepared exclusively for this purpose in List of Assets and Liabilities and List of Selected Assets and Liabilities documents have been structured topically so that they referred to assets and liabilities possibly occurring in an agricultural holding.

During the stocktaking and while entering data into relevant tables included in an account book, one absolutely needs to remember about taking account of the basic rules and concepts effective for the Polish FADN.

During the stocktaking, the following aspects need to be taken into account:

- Does a specific asset belong to the holding or is it only used by it (e.g. land rented from another farmer)?
- Do all assets found in the holding belong to that holding or do they belong to other person (e.g. a neighbour's trailer)?
- Have all agricultural holding's assets been covered by a stocktaking? One needs to check, whether some assets are temporarily used by somebody else.

During the stocktaking (it is particularly important at carrying it out for the first time), it needs to be decided whether a given asset should be included in an agricultural holding's estate or is it a private one (e.g. a car).

To properly carry out the inventory it is necessary to have a relevant knowledge and practical skills.

They concern:

- familiarity with assets valuation rules. They have been described in detail in the Manuals.
- ability to identify the product weight. Usually, products and productive assets are stored in warehouses, where no weight labels are attached. Therefore, in order to establish the weight of products it is necessary to be able to calculate capacity and on that basis to establish the weight (by means of appropriate conversion coefficients).
- familiarity with current prices. It is common that a farmer has no knowledge about product prices as of the inventory performance date.

With regard to specific assets and liabilities, the Polish FADN uses three valuation methods:

- **Implementation price (cost) method,**

It consists in valuating assets according to their current net sales price (farm-gate prices, that is, minus costs of shipment to the nearest market, market charges, etc.). It is applicable to the valuation of own products (e.g. wheat grain, animals).

- **Replacement price (cost) method,**

It assumes the asset valuation to be conducted at current acquisition (production) prices (costs). This method allows to specify how high the costs of replacement a given asset or an asset with identical functional parameters as the valuated one would be. This method is applicable to the valuation of material assets (among others: buildings, vehicles and technical equipment).

- **Historical price (cost) method.**

It assumes that specific assets and liabilities are valued at production prices (costs) at the time of acquisition (production) or creation. This method is applicable to the valuation of purchased productive assets, ongoing investments and all other dues and liabilities on the holding's part. In the case of estimating the stocks of the purchased productive assets, the last purchase price shall be used (farm-gate prices, that is, plus shipment and sale costs).

Data recorded in List of Assets and Liabilities and List of Selected Assets and Liabilities are also used to carry out a complete calculation of operational activity results of an agricultural holding (taking account of a generic and value structure of stock, depreciation of agricultural holding's assets). Moreover, to achieve a required level of detail as regards the structure of revenues and costs, it is necessary to acquire data on the type and value of own products and production materials in stock on the first and the last day of an accounting year.

Diagram 17 highlights information from two exemplary diagrams: output and cost calculation, provided by the List of Assets and Liabilities (LAL) and the List of Selected Assets and Liabilities(LSAL).

Diagram 17. Data provided by the List of Assets and Liabilities (LAL) and the List of Selected Assets and Liabilities (LSAL).

Output calculation for winter wheat

Type of information
Net receipts for winter wheat in an accounting year
+
compensation for winter wheat under individual insurance
+
transfer of winter wheat free of charge from the holding in an accounting year
+
farm use of winter wheat in an agricultural holding in an accounting year
+
stocks of winter wheat – as of 31.12.
-
stocks of winter wheat – as of 01.01.
+
loss of stocks of winter wheat of 01.01.
=
winter wheat output in an accounting year

Calculation of cost for nitric fertilizer

Type of information
Net expenditure for nitric fertilizer in an accounting year
+
stocks of nitric fertilizer, as of 01.01.
+
nitric fertilizer used for production not yet harvested in the short cycle – as of 01.01.
+
transfer of nitric fertilizer free of charge to a holding in an accounting year
-
stocks of nitric fertilizer, as of 31.12.
-
nitric fertilizer used for production not yet harvested in the short cycle – as of 31.12.
-
transfer of nitric fertilizer free of charge from a holding in an accounting year
-
nitric fertilizer used for investments in an accounting year
-
nitric fertilizer used for the soil reclamation in an accounting year
-
loss of nitric fertilizer
=
cost of nitric fertilizer in operational activity in an accounting year

Book of Receipts and Expenditures (BRE)

It is used to systematically record all market transactions in an accounting year. Substantive assumptions of the Polish FADN require that the type, value and settlement of a transaction to be provided in appropriate items.

Data recorded in Book of Receipts and Expenditures are to reflect the generic structure of **receipts and expenditures** and the method of their settlement by the type of **deposits and withdrawals** in an accounting period. Book of Receipts and Expenditures is a key element of accrual-based accounting, serving the purpose of reflecting the value of market transactions conducted.

To properly qualify source data and carry out calculations under the Polish FADN, four types of activity have been singled out exclusively for the needs of the Polish FADN:

- **Operational activity** of agricultural holding includes transactions of agricultural holding resulting from its current functioning, that is, transactions which bring income from sale of crop and livestock production and other production (e.g. contract work for others) as well as those which create costs resulting from the current functioning of agricultural holding or only from its existence.
- **Investment activity** of agricultural holding includes acquisition and sale of tangible assets of agricultural holding.
- **Financial activity** of agricultural holding includes all credits and loans received for purposes related to agricultural holding and repaid (without service costs – charges and interest). In practice, this activity is linked with operations which lead to changes in amount and structure of capitals involved in a farm.
- **Private activity** of a farmer's family includes activities which have no direct relation to a farm. Receipts and expenditures made within this activity may pertain to off-farm income, retirement and pension benefits, conducting separated non-agricultural activity, providing for a family, household or other personal assets, deposits and personal investments, donations and occasional expenses.

Although private activity of a farmer's family is not within FADN's interest area, the Polish FADN collects data on earmarked expenditure on farmers' social insurance. In accordance with FADN methodology, farmers' personal insurance is not an agricultural holding cost. Nevertheless, possession of such data allows to identify the extent of burdening farmers' income with social insurance costs.

Deposits mean the inflow of all legal tenders to a holding's check out or onto its banking account, increased by the value of barter transactions. Therefore, the term "deposits" should be understood as all assets flowing into the holding in the form of:

- cash,
- deposits onto a banking account of an agricultural holding.

Deposits also include the value of transactions settled in the form of natural exchange (complete or partial) for a product, thing or service transferred to a commercial partner, resulting from:

- deduction from the product, thing or service value made by a recipient on account of collecting products, things or services by a supplier (farmer) at settlement, deduction from the product, thing or service value made by a recipient on account of particular financial services (e.g. sales commission, product insurance, membership fees),
- product, thing or service exchanged for products, things or services of an equivalent value.

Withdrawals are outflows of all tenders from the holding's check out or from its banking account, increased by the value of barter transactions. Therefore, the term "withdrawals" should be understood as all assets flowing out of the holding in the form of:

- cash,

- withdrawals from the agricultural holding's banking account.

Withdrawals also include the value of transactions settled in the form of natural exchange (complete or partial) for a product, thing or service, resulting from:

- value of products, things and services received by a farmer and settled in the form of products, things and services provided by him,
- value of financial services provided to a farmer (e.g. sales commission, product insurance, membership fee) settled by means of products, things and services provided by him,
- product, thing or service exchanged for collected products, things or services of an equivalent value.

Due to the lack of parallel warehouse registers, transactions of quantitatively measurable products need to be characterised in physical units as well.

Data on **deposits and withdrawals** recorded in Book of Receipts and Expenditures are there to reflect the generic structure of cash flows in particular months of a given quarter and accrual by subsequent accounting year's quarters, according to three types of activity.

Diagram 18 highlights information from two exemplary diagrams: output and cost calculation provided by the Book of Receipts and Expenditures.

Diagram 18. Data provided by the Book of Receipts and Expenditures

Output calculation for winter wheat

Type of information
Net receipts for winter wheat in an accounting year
+
compensation for winter wheat under individual insurance
+
transfer of winter wheat free of charge from the holding in an accounting year
+
farm use of winter wheat production in an agricultural holding in an accounting year
+
stocks of winter wheat – as of 31.12.
-
stocks of winter wheat – as of 01.01.
+
loss of stocks of winter wheat of 01.01.
=
winter wheat output in an accounting year

Cost calculation for nitric fertilizer

Type of information
Net expenditure for nitric fertilizer in an accounting year
+
stocks of nitric fertilizer, as of 01.01.
+
nitric fertilizer used for production not yet harvested in the short cycle – as of 01.01.
+
transfer of nitric fertilizer free of charge to a holding in an accounting year
-
stock of nitric fertilizer, as of 31.12.
-
nitric fertilizer used for production not yet harvested in the short cycle – as of 31.12.
-
transfer of nitric fertilizer free of charge from a holding in an accounting year
-
nitric fertilizer used for investments in an accounting year
-
nitric fertilizer used for the soil reclamation in an accounting year
-
loss of nitric fertilizer
=
cost of nitric fertilizer in operational activity in an accounting year

Book of Events in Agricultural Holding (BEAH)

This document is used to record commercial events taking place in an agricultural holding that do not have a character of a market transaction. As part of the holding's operation, market-unrelated events also take place, such as transfers of products from an agricultural holding to a household of a farmer. Therefore, there is no such information in Book of Receipts and Expenditures. However, such data are necessary to properly carry out an agricultural holding profit and loss account according to the methodology effective in the Polish FADN.

Diagram 19 highlights information from two exemplary diagrams: output and cost calculation which is provided by the Book of Events in Agricultural Holding.

Diagram 19. Data provided by the Book of Events in Agricultural Holding

Output calculation for winter wheat

Type of information
Net receipts for winter wheat in an accounting year
+
compensation for winter wheat under individual insurance
+
transfer of winter wheat free of charge from the holding in an accounting year
+
farm use of winter wheat in an agricultural holding in an accounting year
+
stocks of winter wheat – as of 31.12.
-
stocks of winter wheat – as of 01.01.
+
loss of stocks of winter wheat of 01.01.
=
winter wheat output in an accounting year

Cost calculation for nitric fertilizer

Type of information
Net expenditure for nitric fertilizer in an accounting year
+
stocks of nitric fertilizer, as of 01.01.
+
nitric fertilizer used for production not yet harvested in the short cycle – as of 01.01.
+
transfer of nitric fertilizer free of charge to a holding in an accounting year
-
stock of nitric fertilizer, as of 31.12.
-
nitric fertilizer used for production in the short cycle – as of 31.12.
-
transfer of nitric fertilizer free of charge from a holding in an accounting year
-
nitric fertilizer used for investments in an accounting year
-
nitric fertilizer used for the soil reclamation in an accounting year
-
loss of nitric fertilizer
=
cost of nitric fertilizer in operational activity in an accounting year

For this purpose, the following accounting data are collected:

- farm use of potencially marketable on - farm produced products,
- free of charge transfers "from" and "to" a holding,
- settlement of plant production value in a long cycle,
- ongoing investments,
- losses of the holding's assets,
- allocation of common costs between a holding, private and non-agricultural activity.

Book of Events in Agricultural Holding is a document used to provide additional data for the sake of preparing a quantitative characteristics of stock and the holding's profit and loss account.

Accounting data recorded in this document allow the establishment of human labour input, sown area, field crops production volume, permanent plantations and crops under shelters, monthly average number of livestock. Such information is used to prepare reports: an individual, comparative and dynamic one.

II.4.2. Agricultural holdings with legal entity

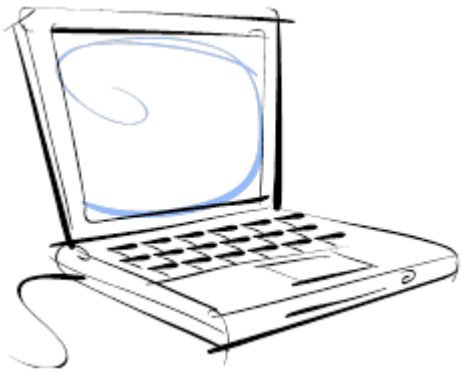
In the case of these holdings, which are obliged to perform financial accounting pursuant to the Act on accounting, to collect accounting data, a special questionnaire is used instead of accounting books.

A questionnaire "Farm Income Research" is filled by an accounting office employee on the basis of financial statements and an interview with a manager of an agricultural holding [6].

II.5. Products created annually under the Polish FADN

II.5.1. Basic products of the Polish FADN

- **Computer database**



From 2011 accounting year the base of Polish FADN annually collects accounting data from ca. 11 thousand of agricultural holdings. Each farm included in the data base is characterised by a dataset as large as even 2 thousand variables.

- **The Farm Return**

Structure and contents fully compliant with the Commission Implementing Regulation (EU) No 1320/2013 of 3 December 2013 on the farm return to be used for determining the incomes of agricultural holdings and analysing the business operation of such holdings, as amended.

II.5.2. Products supporting the data quality control and farm management

• Individual Farm Report

The report is created separately for each agricultural holding submitting the data for the purposes of Polish FADN. The Individual Farm Report pertains to single agricultural holding. The report is based on the data from a specified accounting year. The data have to be considered as error-free during the data quality testing procedure. The Individual Farm Report provides the picture of the agricultural holding's activity. It includes information about the assets at its disposal, expenses incurred during the production process, and the results obtained in terms of quantity and value.
From the year 2012 the Individual Farm Report has a simplified form. The goal of introducing the simplifications in the Individual Farm Report is to increase the transparency and understanding of the information contained in the report. The farmer can choose between the new Simplified Individual Farm Report and the report generated according to the format available in previous years.

Diagram 20. Fragment of the first page of an Individual Farm Report

	Farm Identification Number:		*NIG*	
	Structure of ownership and type of land used			
No.	Specification	Area [ha - 0,00]	Structure [% - 0,0]	
I.	**UAA ownership structure**			
1	Own land used			0,00
2	Land taken on lease for 1 year or more			0,00
3	Land taken on lease for less than 1 year			0,00
4	Land used on the basis of agreement for share in harvest			0,00
5	**Total land used (5=1+ .. + 4)**	0,00		0,00
II.	**Land use structure**			
1	Arable land		0,00	0,00
2	including perennial plantations		0,00	0,00
3	fallow and idle land		0,00	0,00
4	Orchards, fruit tree nurseries, vineyards		0,00	0,00
5	Permanent grasslands		0,00	0,00
6	**Total arable land (6=1+4+5)**	**0,00**	**0,00**	0,00
7	Forest land		0,00	
8	Other farm land		0,00	
9	**Total land used (9=6+..+8)**	**0,00**	0,00	

• Comparative Farm Report

The report is generated upon commission by interested farmers only after the completion of the Polish FADN database for a given accounting year. Calculations are carried out after the transfer of similarity criterion of comparable holdings (to create an appropriate group of holdings) and a quality criterion (to classify comparable holdings into the best, medium and the worst ones) by interested farmers.

Diagram 21. Fragment of the first page of a Comparative Farm Report

			NIG				
		Similarity criterion					
		Quality criterion:					
				your holding	the best 25%	average 50%	the worst 25%
		Number of agricultural holdings in sub-groups:			4	5	6
I		**Rank of your holding in the group of similar agricultural holdings**					
		Number of holdings the group of similar agricultural holdings					
		Percentage of holdings in that ranked worse than your holding		74%	Your score		

- **Dynamic Farm Report**

A Dynamic Farm Report allows farmers to trace and rapidly assess changes to economic situation which took place within five years of participation in the Polish FADN. The report is also there to assist advisors/farmers in data quality control.

The report is created by accounting offices upon commission by interested farmers. It is generated by an application serving the Polish FADN on the basis of "Biuro" database, starting from the accounting closure of the year 2009. The basis for its generation is the data from the last four years (at the most) before the year selected in an application. It is recommended that a Dynamic Farm Report was generated after the closing of an accounting year (that is, after submission the data to the European Commission).

If a holding has kept its accounting under the Polish FADN for less than five years, the report's columns to which no data are available should be marked in grey. Generation of such report after the first year of cooperation with the Polish FADN is not advisable.

Diagram 22. Fragment of the first page of the Dynamic Farm Report

Version 2013.1							
Farm Identification Number							
No.	Specification	Measurement unit	2009	2010	2011	2012	2013
A.	FARM RESOURCES						
I. UAA in owner occupation							
1.	Own land used	ha					
2.	Share of rented land	%					
II. Structure of agricultural land							
1.	Arable area	ha					
2.	Fruit orchards and nurseries	ha					
3.	Permanent pasture	ha					
4.	Total UAA (4=1+...+3)	ha					
III. Labour resources and inputs							
1.	Number of family members in productive age working on a farm*	No of people					
2.	Number of AWU per 100 ha UAA	AWU/100ha					
3.	Number of hours worked per family member	h/person					
* a woman aged 18-59, a man aged 18-64							

II.5.3. Selected products created on the basis of the Polish FADN database

- **Standard Results of the Polish FADN**

Obtained results are fully compliant with economic terms and categories presented in FADN Standard Results of the Directorate General for Agriculture and Rural Development (DG-AGRI). Standard Results contain ca. 145 variables characterising an economic and financial situation of agricultural holdings in a given accounting year. Due to a rule providing for the dissemination of FADN data, it is acceptable to present the results of a group comprising at least 15 farms.

A study contains a tabular part (Part I. Standard Results) and an analytical part (Part II. Analysis of Standard Results).

Part I contains information characterising the Farm Accountancy Data Network (FADN) and methodological information including definitions of particular variables. A statistical part of a study contains statistical data for farm groups, established on the basis of three grouping criteria: economic size, type of farming and Utilised Agricultural Area [14].

Part II is an analysis of selected results obtained from farms participating in the Polish FADN.

Standard Results calculated for agricultural holdings participating in the system (for Poland and four FADN regions) are presented as weighted averages. This means that they refer to the Polish FADN field of observation. Each sample farm, performing accountancy under the Polish FADN, represents a certain number of similar farms from the same stratum (for example, 489 agricultural holdings "specialist dairying" represent 8 230 dairy farms within the field of observation of *Wielkopolska i Śląsk* region in 2012 accounting year [12]).

Standard Results calculated for individual farms, farms with legal entity and organic farms are arithmetic averages referring to a sample they were calculated from. This means that obtained results are a source of information about the productive potential and effects of farm management included in the study and cannot form a basis to draw conclusions that would generalise the economic situation of all farms with such activity profiles in Poland (e.g. Standard Results calculated for farms with legal entity participating in the Polish FADN in 2012 are arithmetic averages out of the sample of 205 farms where the 2012 Farm Income Research has been carried out [13]). It is visible that these results are not representative for this type of farms in Poland or one of the four FADN regions.

- **Time series**

The Standard Results have been prepared in the form of time series taking into account methodological changes, that have taken place in Polish FADN. It is possible to download from the website of Polish FADN (www.fadn.pl) the files with the Standard Results for groups of agricultural holdings selected according to various grouping criteria. In order to download a data file, use a wizard to retrieve the time series. In the following steps of work with the wizard, select the farm grouping criteria for Poland, for FADN region, for NUTS region or for voivodeship. Moreover, it is necessary to indicate, regarding the representativeness of the results, whether the results are to be representative for the sample or for the field of observation, as well as to select the set of SO coefficients (CTAH), the method of subsidies calculations and the method of own land valuation. After the selection procedure is completed, compressed data file in format xls. is produced.

- **Technical and economic parameters by groups of farms participating in the Polish FADN**

Technical and economic parameters of farms include data concerning the structure of harvest, yields, sale prices, as well as indicators and measures of financial situation of analysed farms

and equipment in production factors. Results may be used to analyse particular groups of farms, to plan and evaluate the legitimacy of a profile change or enlarging the farm.

The study includes 142 parameters presenting results obtained by particular farm groups. Each parameter is marked by a 7-digit code. In all cases, the number of farms is also given [11].

Presented parameters are grouped into 14 categories:

A. Land
B. Labour force
C. Farm assets
D. Production quotas
E. Harvest structure
F. Livestock population
G. Yields
H. Net sale prices of basic products
I. Cash flows
J. Farm output
K. Subsidies
L. Costs
M. Selected result categories
N. Measures and indicators

Diagram 23. Fragment of a table of technical and economic parameters by groups of farms participating in the Polish FADN

Table	Specification	Unit	Symbol	Symbol	SO	Dairy cows (heads)		
						<5	5=<10	10=<15
	SYS03		SYS03	SYS03	Σ	15,00	98,00	187,00
	Land in owner-occupation	ha	PTE0010	PTE0010	$\bar{x}$	8,58	13,61	15,82
	Land rented for period of 1 year and more	ha	PTE0020	PTE0020	$\bar{x}$	1,23	3,61	4,35
	Land rented for less than 1 year	ha	PTE0030	PTE0030	$\bar{x}$	0,00	0,12	0,09
	Utilised Agricultural Area (UAA)_	ha	PTE0040	PTE0040	$\bar{x}$	7,90	15,29	18,35
	- arable land (% of UAA)	%	PTE0050	PTE0050	$\bar{x}$	61,30	57,38	60,28
	- orchards (% of UAA)	%	PTE0060	PTE0060	$\bar{x}$	0,08	0,11	0,06
	- permanent pasture (% of UAA)	%	PTE0070	PTE0070	$\bar{x}$	38,61	42,51	39,66
	Area under shelter	m2	PTE0080	PTE0080	$\bar{x}$	0,00	6,12	0,00
	Woodloand area	ha	PTE0090	PTE0090	$\bar{x}$	1,39	1,50	1,32
	Own land valuation indicator	pts.	PTE0100	PTE0100	$\bar{x}$	0,44	0,59	0,58

- **Comparison of economic situation of agricultural holdings in FADN and NTS regions**

The study presents average data of agricultural holdings by four FADN regions and by six NTS-1 regions specified under the Nomenclature of Territorial Units for Statistics (NTS).

The main objective of the study was to present differences in characteristics and results of goods-producing agricultural holdings located in particular FADN and NTS-1 regions.

To depict the diversity between FADN and NTS-1 regions, variables with significantly differing values in particular regions have been used. Many important variables characterised by minor spatial diversity have been omitted [10].

The study contains a graphic analysis with a simple comment on the analysed parameters. A graphic analysis includes maps on which bar charts reflecting selected variables have been placed, as well as pie charts showing the farm structure[5].

Notice:

All Polish FADN products (manuals, forms and a computer software) are transferred free of copyright fees to all farmers and other persons cooperating under the Polish FADN.

Bearing in mind the question of environmental protection and the use of stationery, these products are available at www.fadn.pl

Files useful for training and collecting accounting data, as well as updated information concerning the Polish FADN can be found at: www.fadn.pl

[5] All figures presented in the analysis characterise farms within the FADN field of observation

III. BENEFITS RESULTING FROM PERFORMING THE ACCOUNTANCY UNDER THE POLISH FADN

III.1. General remarks

A systemic transformation of 1989 and ongoing economic transformation have created completely new conditions for the functioning of business entities.

Different economic conditions have also been a great challenge for farmers. Lots of new and previously unpredictable challenges and accompanying risks have appeared in their sight. For example, the following can be enlisted:

- product sales,
- product sale prices.

Other factors, limitations and risks resulting thereof are similar to the ones occurring in business entities of other sectors.

Currently, a person managing a commercial holding should not make decisions based on a pattern shaped by their predecessors. Creative actions is what is indispensable in a significantly different reality.

The need to change the style of decision-making by farmers, aiming at gaining advantage over competitors, has been caused mainly by the occurrence of imbalance (domination of supply over demand) on the food market.

Therefore, we can conclude that the opportunity to gather appropriate information in an appropriate time is a necessary condition to make proper decisions in an agricultural holding.

One of the very significant information areas is the financial situation and economic results of an agricultural holding. Accounting is the most appropriate segment to generate such information. Specificity and special character of necessary data are a prejudging factors.

III.2. What is accounting?

The aim of accounting is to present the following in a cash measure:

- status and movement of an economic entity's resources,
- their financing sources,
- course and results of the economic activity.

Accounting has grown out of the need to support the human memory in controlling resources and the course of the business entity's activity. In the course of long evolution, it has become a system reflecting the business entity's activity, specified by legal norms, science and traditions of a given country and sector.

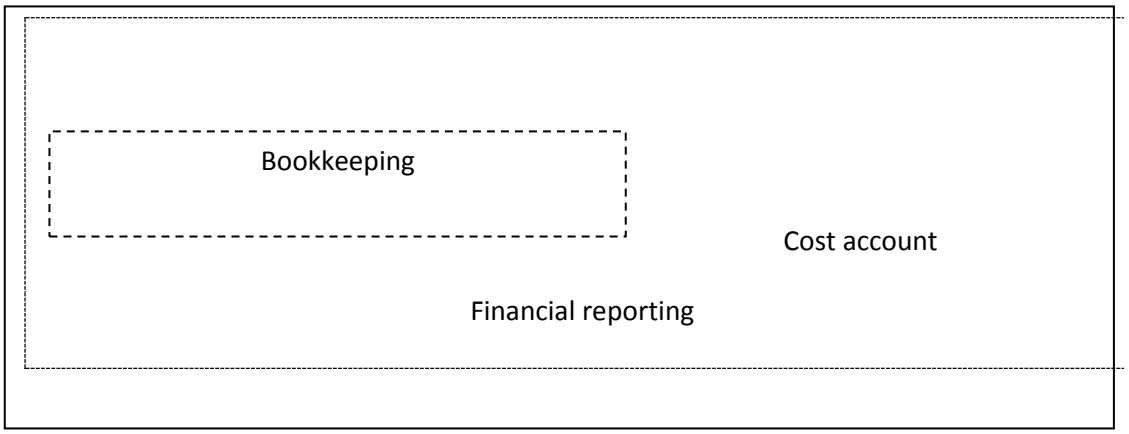
A sectoral specificity of agricultural activity has caused the separation of an agricultural accounting system from the general accounting core. Now, it is the most important information system in an agricultural holding. It provides information on the results of its activity, financial situation and all accomplished and forecasted asset and financial changes.

Accounting is very often identified with keeping records. However, this is a very far-fetched oversimplification.

By accounting, we should mean a comprehensive and cohesive system of constant and systematic data collection and processing, as well as presenting economic and financial information.

The following main parts form the accounting system: **bookkeeping, cost account and financial reporting.**

Diagram 24. Scope of accounting



Bookkeeping is there to create databases for the accounting system. This activity is often called "keeping ledgers". Based on recorded quantitative and value-related data, it is possible to describe the status and turnover of various materials and products in cash terms. This allows the preparation of input information sets facilitating the decision-making process.

A cost account includes actions aimed at reflecting the process of supplying, producing and selling in specified time limits.

Financial reporting covers the set of information generated by the accounting system. Given the scope and aim of accounting, there are two types of accounting: financial and managerial.

Financial accounting informs about the assets and financial condition of a farm and obtained economic results in, among others, a financial result. The information is transferred mostly outside the farm (e.g. to protect the investors' interests).

Such accounting is legally regulated (by the Act on accounting, the fiscal law, etc.) and is subject to external financial audit. Financial reports are of a uniform format and are subject to disclosure.

A type of financial accounting, the point of departure of which are the fiscal law regulations and which aim at determining fiscal obligations, is **fiscal accounting.**

Under the present law, farmers are obliged or are allowed to settle their fiscal obligations, among others, on the account of income tax from operating in special sectors of agricultural production, on the basis of a revenue and expense ledger or to switch to general rules of working out a VAT tax with the obligation to keep purchase and sales records for VAT needs.

Managerial accounting provides information to farmers on the efficiency and effectiveness of predetermined activity plans, which greatly facilitates the farm management. Under such accounting, the selection of measures depends on own needs and preferences. As opposed to financial accounting, different valuation rules can be applied (e.g. according to current replacement costs – which is of particular significance in the inflation period), as well as individual, adjusted to own conditions, asset depreciation rates. This type of accounting not only provides financial, but also non-financial data (quantitative and value-related).

The essence of managerial accounting is reflected in Diagram 25. It shows that this type of accounting is visibly future-oriented, which is the main feature distinguishing it from the financial accounting.

Diagram 25. Financial accounting system in managerial accounting

Time line →	**Past**		**Current state**	**Plan**
	31.12.2013 →	Dynamic reports	31.12.2014 → Static reports	31.12.2015
	Financial balance as of 31.12.2013	Cash flows report concerning 12 months of 2014	Financial balance as of 31.12.2014	Draft financial balance as of 31.12.2015
				Cash flows report concerning 12 months of 2015
		Result account for 12 months of 2014	Net worth report of 31.12.2014	Draft result account for 12 months of 2015

III.3. The need for farmers' accounting

The rules of market economy, the farmers need to stick to, have forced them to increase their capacity and to improve their activity's efficiency. It is both a condition and a method to gain higher income.

In practice, similar farms located in the same region which generate significantly different income can be found. In the face of such situation, one of them is capable of safeguarding a satisfactory living standard for the family, while the other is not.

If farms of comparable size, located in the same region, have generated different economic results, this must mean that different decisions of different quality have been made in these holdings.

We often face diverse attitudes among farmers. Some of them present a reproductive attitude, consisting in using management patterns taken over from their fathers and trusting their intuition. Others present an active one, making a farmer fully open and striving to gain decision-making abilities resulting in the improved management efficiency. The latter follows all information about prices, performs calculations and frequently visits the Regional Agricultural Advisory Office. As a result, these farmers with different attitudes to farm management, functioning in similar environments, have gained significantly different income.

Current economic reality imposes a particular need to revalue the issues the farmers must deal with running their business activity. Among the majority of them, previous efforts directly aimed at production issues should be switched to a more broadly understood agricultural holding management. It consists in making decisions that result in the highest possible economic margin after an appropriate use of the farm's resources. Farm management decisions refer both to the organisation and the functioning of an agricultural holding. However hard to precisely

classify and distinguish, we can assume that organisational decisions usually deal with planning, while operational ones provide a practical implementation of plans.

Another division of farm management decisions is possible, and it concerns the following:

- which products to produce,
- how many products to produce,
- what productive assets and how many of them to use,
- how (according to which technology) to use them,
- when and where to sell and buy,
- in what way will the farm operation be financed.

On the basis of experience gained by agricultural holdings in Western European countries, that is, those which incessantly operate under market conditions, four basic conditions to be met for an efficient farm management:

- understanding of rules and limits of an agricultural holding's functioning
- familiarity with an existing condition of a farm, gained on the basis of accounting data analysis,
- ability to work out long and short-term plans based on familiarity with technical and financial capacities of an agricultural holding,
- performing the accounting that provides relevant supervision over the implementation of plans.

The aforementioned conditions, the meeting of which provides an efficient farm management, indicate the need to have a lot of information on the current operation of holdings at farmers' disposal, as well as a short and long-term action plan. Accounting plays a significant and unique role in providing information to a farmer. Data acquired by accounting inform about asset resources at one's disposal, commitments of a holding, as well as production and economic results achieved during the accounting year.

Changes that holdings cooperating with the Institute of Agricultural and Food Economics – National Research Institute undergo, indicate a beneficial impact of accounting on results achieved by farms.

A positive impact of accounting on the quality of decisions made by farmers underline the decision establishing the accounting obligation among farmers who took out "the setting up of young farmer" loan. It has been concluded that by introducing accounting and the analysis of reporting data, a considerable progress as regards farmers' economic knowledge will take place, along with the progress in technical skills resulting from the equipment of holdings in modern machinery.

Bookkeeping, which lies at the foundation of the accounting system, can be more or less complex. On the other hand, the form, scope and detail of records depend on a farmer's needs and capabilities. The most common need among farmers concern the value of cash deposits and withdrawals, as well as the value of revenues (sale) and expenditures (purchase).

III.4. Benefits for farmers resulting from accounting in an agricultural holding

Agricultural accounting provides both direct and indirect benefits for farmers.

III.4.1. Direct benefits

In the light of previous experiences, accounting provides a number of direct benefits to farmers, which include:

- Improving the knowledge on economics and management.

Experiences of farmers performing the accounting, among others, in cooperation with IAFE-NRI employees, indicate that "pencil-in-hand" accounting significantly enhances the quality of decisions concerning the agricultural holding and, consequently, the achieved results, both technologically and economically.

- Frequent contacts with an adviser, giving the opportunity to acquire detailed pieces of advice, information on the farm operation and other similar.
- Organisation of documents gathered in various places at farmer's home.

After the commencement of accounting, an "office" in a separated place in a holding is established. At first, the role of an office is played by a carton box or a drawer.

- Data recorded in the course of accounting provide information which serve the following:
    - an ongoing evaluation of results,
    - control of settlements with product recipients and material suppliers,
    - comparisons of achieved results with the planned ones.

Information comparing the achieved results with the planned ones displays particular significance in the case of indebted farms.

If a farmer loses an ability to repay a loan – even if it is interest-free - the farm can go bankrupt.

Such situation gives particular significance to a current analysis of inconsistencies between the data included in cash flow reports and a drafted plan. The analysis of inconsistencies between achieved and planned results and undertaking proper remedial actions prevents the "snowball effect" in an agricultural holding.

Examples of accounting data use

❖ Cash flow analysis

A systematic recording of cash deposits and withdrawals in 12 consecutive months of the calendar year in properly devised charts provides data allowing the preparation of a report showing the size and generic structure of cash flows from and to the agricultural holding.

This report gains a better cognitive value if it indicates how much money each of the three separate activities delivered and used, namely:

- **operational activity,**
- **investment activity,**
- **financial activity.**

Such juxtaposition of data allows the calculation of balance (difference between the amount of deposit and withdrawals) from the particular types of activity. The information indicating the implementation of a financial goal of an agricultural holding, that is a cash income (surplus of deposit and withdrawals resulting from the operational activity of a farm), is particularly important in this case.

From the point of view of current farm management, it is extremely important to be familiar with solvency in dynamic terms (in different periods of the year). In many farms, amounts of current cash inflows (deposits) do not correspond with the amounts of withdrawals, which is caused, among others, by seasonality of production and, consequently, of sale. In the event of the lack of cash resources from other sources, it may lead to the impossibility to implement a production programme devised by a farmer.

Maintenance of solvency by a farm is particularly important if the farm is subject to debt service (repayment of credit instalments plus interest).

Cash flows report can have a more or less complex structure:

- a synthetic report only indicates the amounts of deposits, withdrawals and balances of four separate activities.
- an analytical form of the report indicates key items (grounds) of deposits and withdrawals of cash resources in four separate activities. To this end, there is a need to classify deposits and withdrawals in title groups of the farmer's interest, e.g. as part of the operational activity:
    - deposits: cereals, milk, other,
    - withdrawals: fertilizers, fuels, fodders, other.

Usefulness of a cash flows report will be significantly enhanced provided that there is a chance to compare data included therein with a previously drawn up cash flows forecast (see Diagram 25). On that basis it will be possible to state to what extent is the implementation convergent with the forecast. In the event of finding any risks, their previous diagnosis usually facilitates the undertaking of actions relevant to eliminate or mitigate those risks. Previous identification of financial problems, similar as with illnesses, makes it easier to avoid the "snowball effect" of risk escalation.

❖ Agricultural holding's results analysis

On the basis of the accounting data concerning the accounting year it is possible to draw up a report on the outturn of the farm's operational activity, called an economic outturn account. This report provides with information on the value and structure of revenues and costs and the values of economic margins.

A general rule for drawing up an economic outturn account is to maintain its transparency and intelligibility. This means that an account should include a limited number of items.

Revenues indicate the value of benefits from operational activity. The number of revenue categories in a typical economic outturn account should contain up to five individual detailed items and one consolidated item, covering other operational revenues of an agricultural holding. Owing to such approach, we will receive a structure of revenues with highlighted items that were of key share in benefits gained.

Costs taken into account in the economic outturn account reflect the figures incurred for operational activity. A typical farm's economic outturn account should contain up to 15 cost items. For example, if a holding used various types of concentrated feed, its specification will result in the situation that the total cost of this type of feed becomes unintelligible.

To make an analysis easier, it is recommended to focus on **key costs.** These are the costs including 3 - 4 main categories of farm's operational activity costs, the total of which is more than a half (>50%) of all costs incurred for the farm's operational activity. In some agricultural holdings only one element of such costs may appear, since it can be a larger part of the overall structure than all other costs combined together. Usually, key costs decide on the financial efficiency of management. Therefore, it is not the number of key cost items that is most important, but the notion which cost categories have a main influence on the farm's economic outturn.

In order to get acquainted with and understand the tendencies concerning revenues and costs, it is useful to compare them to economic outturn accounts from previous years. Such information helps facilitate agricultural planning.

❖ The analysis of an agricultural holding's economic outturn compared to other, similar holdings

On the basis of data from farms keeping the accounting in a given accounting year, it is possible to draw up a comparative annual report. This type of a report contains basic economic outturn data of a farm, presented in comparison with data obtained by similar farms according to specific features.

Other direct benefits of accounting for farmers are:

- The possibility to legitimise the professional management abilities by the use of economic outturn reports. This will:
  - facilitate the establishment of creditworthiness,
  - authenticate farmers applying for banking credits.

We should expect that under current conditions agricultural holdings will make use of external financing sources to a greater extent than previously, mainly in the form of short and long-term credits. Such method of acquiring capital will be particularly helpful for the development and modernisation of agricultural holdings.

- Make farmers get the habit of regular keeping of records and documentation

This can be very useful, and even necessary:

  - to keep a revenue and expense ledger,
  - to specify taxable income,
  - for settlement of value added tax (VAT).
- Gain empirical basis to perform calculations concerning, among others:
  - substitution of inputs,
  - increasing the inputs level,
  - substitution of output,
  - changes in production technology,
  - stocks management.
- Gaining empirical grounds to undertake group activity:
  - data on prices and amounts paid for productive materials,

- data on wholesale and retail margins and their share in prices of productive materials,
- data on prices and amounts received from the sale of own products.

III.4.2. Indirect benefits

Farmers also gain indirect benefits from accounting. Accounting data collected from agricultural holdings in a uniform way are used to create databases. They form the basis for creating juxtapositions of economic outturns of various farm groups. Data arranged in that way are used to draw up analyses of various farms' condition and to evaluate effects of introducing changes to agricultural policy.

An economic outturn account of a farm group also allows to establish the influence of the agricultural policy and to compare agricultural holdings of a different ownership structure of productive factors. This scheme of economic outturn account is used in FADN Standard Results.

Therefore, better macroeconomic management conditions created by decision-making bodies as part of national programmes or CAP may form indirect benefits for farmers resulting from accountancy.

It is commonly known that the type and quality of decisions made by decision-making bodies do not only depend on its political will, but also on the reliable and updated knowledge on the subject affected by the decisions. At the same time, decision-making bodies, as managers of public assets (mainly budgetary ones) flowing into farms in the form of subventions and designated subsidies, should have an objective basis to evaluate the outturn and performance of undertaken auxiliary activities.

Provision of parameters to evaluate standard income of farms not performing any type of accounting. Such opportunities are very useful for the specification of farm groups authorised to benefit from assistance under various CAP programmes (e.g. farm marketability enhancement programmes).

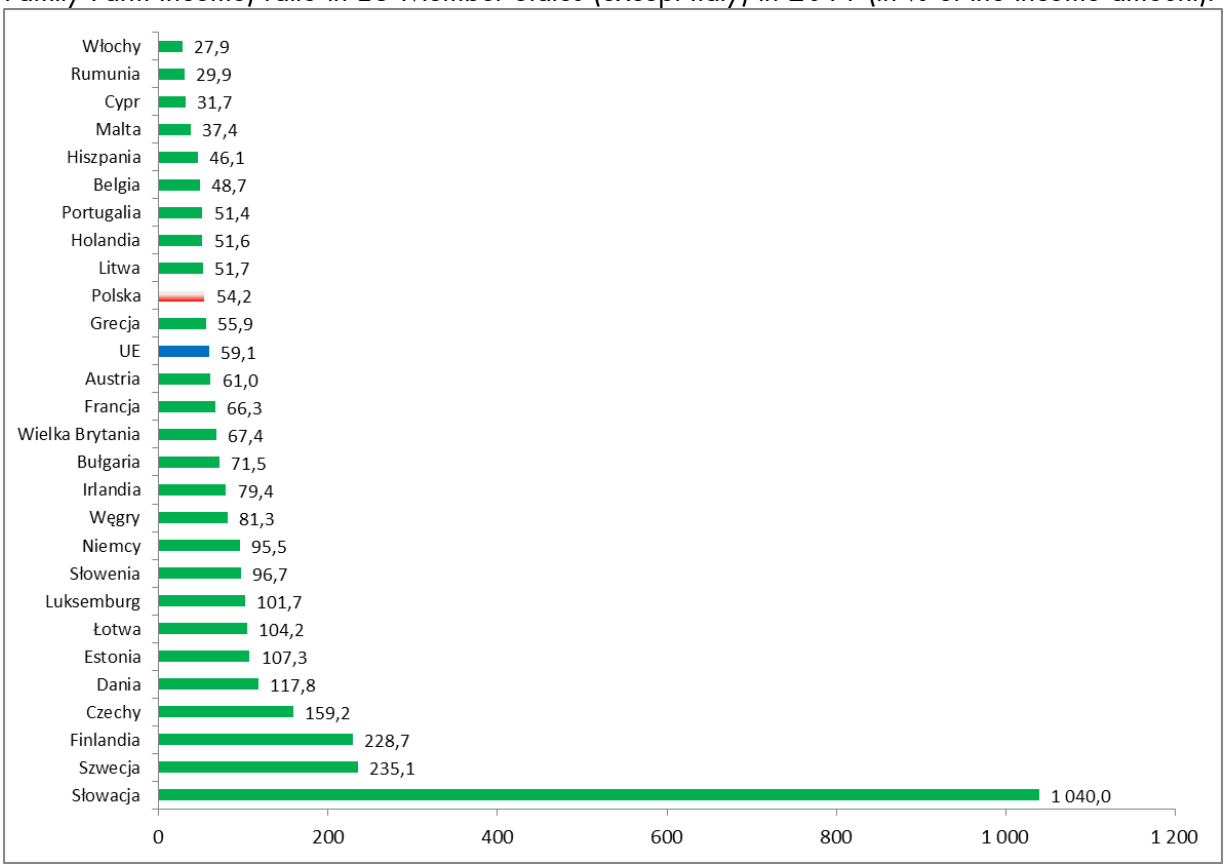
On the basis of the accounting data provided by farms performing the accounting in cooperation with IAFE-NRI, appropriate parameters allowing the specification of a standard farm income on the basis of a given farm's quantitative data concerning the sown area and livestock heads have been determined. Based on them, it is also possible to determine standard farm income per AWU.

Existing subsidy granting rules indicate the immense significance of good and adequate data. They also require an active participation of farmers in providing very precise and reliable data of various kinds. Farmers' participation is necessary to obtain subsidies on particular accounts, since such assistance is granted only on the basis of applications submitted by farmers.

The issue is worth the effort, since after the modification of the CAP rules, the direct payments system has taken over the function of farmer income regulator, previously held basically by the market.

Such activity, having successfully coped with the problem of an appropriate supply of agricultural products, has led to better availability of food products to deprived social groups owing to reducing their market prices. On the other hand, various subsidies under CAP and in some cases, under arranged national programmes, have begun to function as farmer income regulators. Subsidies to agri-fuels are an example of such assistance in Poland.

Diagram 26. Diversification of the subsidies (SE605 – Total subsidies) to farm income (SE420 – Family Farm Income) ratio in EU Member States (except Italy) in 2011 (in % of the income amount).



Source: Own calculation according to FADN data.

Data on the share of subsidies in farmers income from 27 Member States in 2011, and in previous years, constitute an unambiguous evidence of a great role played by direct financial support in shaping the farmers' income situation.

A 100% subsidies to income ratio means that the amounts of income in those Member States correspond to the value of subsidies obtained by farmers. In certain Member States the economic situation of farms is more dramatic. When the subsidies to income ratio exceeds 100%, this means that obtained subsidies were also used to compensate a loss on an account run on the basis of market prices of agricultural products and prices of productive materials and services.

Diagram 26 indicates that in the year 2011 farmers from 8 countries gained income only as a result of their revenues being subsidized. Subsidies obtained were partly used to level out the difference between revenues and costs (loss coverage).

IV. LIST OF BASIC TERMS APPLIED IN POLISH FADN

IV.1. General terms

1. The system of collecting and using accounting data from agricultural holdings (Polish FADN) is a harmonised system of representative research of the economic and financial condition of farms, using agricultural accounting to collect source data. Information provided by the system are useful to the farm managers, their market partners (particularly from the capital market) and decision-making bodies specifying macroeconomic conditions for the functioning of farms. The legal basis for the system is the Act of 29 November 2000 on collecting and using accounting data from agricultural holdings.

2. Financial accounting consists in registering financial transactions in cash units, in accordance with accounting standards and legal regulations.

3. Managerial accounting is a system providing information to managers, used in planning and controlling the enterprise activity and in making decisions allowing its more effective functioning.

4. Accounting period is a period defined by a business entity's accounting.

5. Receipt - a document indicating cash amounts withdrawn or obtained.

6. Invoice – a document calling for payment for supplied products or services.

7. Turnover – value of product and service sale by a business entity.

8. Agricultural holding – an economic unit aiming at producing an economic margin in the process of producing agricultural products.

9. Types of activity in agricultural holding

- **Operational activity** of agricultural holding includes transactions of agricultural holding resulting from its current functioning, that is, transactions which bring income from sale of crop and livestock production and other activity (e.g. services provided by farm equipment) as well as those which create costs resulting from the current functioning of agricultural holding or only from its existence.
- **Investment activity of agricultural holding** includes purchasing and selling tangible assets of agricultural holding.
- **Financial activity of agricultural holding** includes all credits and loans received for purposes related to agricultural holding and repaid (without service costs – commissions and interest). In practice, this activity is linked with operations which lead to changes in amount and structure of capitals involved in a farm.
- **Private activity of a farmer's family** includes activities which have no direct relation to a farm. Deposits and withdrawals made within this activity may pertain to earnings obtained outside a farm, retirement and pension benefits, conducting separated non-agricultural activity, providing for a family, household or other personal assets, deposits and personal investments, donations and occasional expenses.

10. Share – equity, a document issued to an owner certifying his share in owner's equity of a joint-stock company; it authorises a person, among others, to be granted a dividend and to participate in a shareholders' general assembly.

11. Community typology for agricultural holdings is implemented according to economic parameters and is founded on the Standard Output concept, which is an average five-year output value of particular crop or livestock production. Until the end 2009 the Community typology for agricultural holdings applied a Standard Gross Margin coefficients.

12. Gross Margin is a margin of output value in a given agricultural activity over the value of specific costs in average production conditions in a given region.

13. Standard Gross Margin (abbreviated SGM) concerning a given crop or livestock is: a standard (average from 3 years in a given region) value of production per one hectare or one head of animal minus standard (average from 3 years in a given region) specific costs necessary for this production. In the case of activities with a production cycle shorter or longer than 12 months, a Standard Gross Margin of this activity shall be calculated into one year, taking into account the number of production cycles per year.

14. Standard Output (abbreviated SO) – a five-year average output of a given crop or livestock activity per one hectare or one head of animal, in average production conditions for a given region.

15. Other Gainful Activities (abbreviated OGA) include non-agricultural activities carried out by an agricultural holding which are directly related to and having an economic impact on that holding. **Activities directly related to the holding** are activities either using the holding's resources (area, buildings, machinery, etc.) or agricultural products.

16. Economic size of an agricultural holding determined according to SGM is a sum of Standard Gross Margins of all holding's agricultural activities, expressed in the European Size Units. Currently, the value of 1 ESU equals EUR 1 200. To calculate the economic size of an agricultural holding on the basis the Standard Gross Margin "2004" expressed in PLN, one should use only the average exchange rate of 2003-2005, amounting to PLN 4,3177.

17. Economic size of an agricultural holding determined according to SO is a sum of Standard Outputs of all holding's agricultural activities, expressed in the European Currency. To calculate the economic size of an agricultural holding on the basis of the Standard Output "2007" expressed in PLN, one should use only the average exchange rate of 2005-2009, amounting to PLN 3,90916.

18. Excise – an indirect tax imposed on the consumption goods turnover; producers and importers of excise goods are subject to taxation of this sort.

19. Barter – contract consisting in an exchange of one commodity for another, each party to a barter transaction is both a buyer and a seller, and commodity is the equivalent. Barter transaction is complex, expensive and time consuming, because it requires a contact of two contractors, who have commodities that they mutually need and in appropriate amounts.

20. Treasury bill – a type of a short-term (usually 3-12 months) security issued by the government, which is a confirmation of the state's obligation on account of the taken credit; usually they are deposited in central banks and used in open market operations.

21. Cession - transfer of liabilities; it takes place as a result of an agreement between a creditor (assigner) and the third party (cessionary); by rule, it can be conducted without the debtor's consent; along with the liabilities, all related rights are passed on to the transferee, particularly overdue interest claim; cession should be in a written form, however, this requirement shall not apply to the cession of liabilities regarding bearer documents. Each liability can be an object of a cession, provided that it does not stand in contradiction to the obligation's attribute or legislative regulations.

22. Dividend – a part of a company's net profit falling on payments per one share, determined by a resolution of the shareholders' general assembly.

23. FIFO (First In First Out) – a method of stock recording.

24. Leasing – innominate contract (unregulated by provisions of the Civil Code), its contents depend on economic practice; in a leasing contract one of the parties (lessor) pledges itself, within the scope of its activity, to give another party (lessee) an item for use, while a lessee pledges itself to pay the agreed for it.

Operational leasing consists in temporary handing over of investment good for use. Duration of a contract is shorter than the depreciation period for a leased item. Due to incomplete payment of the initial value of an item, after the lease contract is terminated, the user

buys it from a lessor. Purchase takes place for the so called final value determined at the moment of concluding a contract. Separating a lease item from user's assets causes that the contract for operational leasing is not reflected in company's balance. It means that the financial liquidity rate is improved as well as other economic rates.

Capital (financial) leasing consists in taking out an item by a user for usufruct in exchange for temporary payments paid to a lessor. Duration of a contract is similar to normal period of using up a leased item. By including a leased item in user's assets, he makes depreciation charges. In user's balance, the object of financial lease is in the assets and commitments resulting from the lease contract – in liabilities. A company using this type of financing, increases the value of its assets, does not incur additional costs resulting from the termination of the contract, and depreciation brings tax exemptions.

Leasing back consists in selling the asset by a user to the leasing company. After making the transaction the user still uses the asset previously sold to a lessor, paying instalments included in his operational costs. The main advantage of this type of financing is the improvement of financial liquidity of a company through recovering the capital frozen in previously purchased assets.

25. Bond – security, most often payable to the holder, issued in series, where the issuer states that he is the debtor of the security owner (bondholder) and pledges himself to accomplishment of pecuniary or non-pecuniary contribution; issuer is responsible with all his property for commitments resulting from a bond.

26. Natural person – a legal term for a human being specified in the Civil Law. It has legal capacity, i.e. the opportunity to appear as the subject of rights and obligations and the capacity for legal acts, i.e. the opportunity to incur a liability and to administer the rights at his disposal.

27. Legal person – Civil Law entity other than a natural person. The feature of a legal person is a personal, material, organisational separation and the fulfilment of specific goals by an organisational unit, which has been granted a legal personality by law. Legal personality offers the opportunity for legal capacity and capacity for legal acts.

28. Commercial register – official, public list of enterprises having the legal status. It is maintained by a court and includes basic data on the enterprise, its management board and its economic activity. It serves for making entries foreseen by the law.

29. Public corporation – a company whose shares of at least one issue are admitted to public trading.

30. VAT - (Value Added Tax); a good and services tax; variety of multiphase income tax, based on exclusion from the base of the assessment of turnover taxable in previous phases of production and exchange.

31. Bill of exchange – security, formalised document which should be prepared according to rules defined in the law on bills of exchange, admitted to public trading in two forms: as promissory notes and bills of exchange; the main indebted person of a promissory note is its issuer; issuer of a bill of exchange orders a payment of bill's amount to another person called a drawee, who becomes a debtor after signing the bill as so called acceptor; bill transfer is made through endorsement.

IV.2. General terms of accountancy

Terms presented below are applied in accounting registrations. They may be preceded with words "operational", "investment", "financial", "personal" depending on the type of activity they are related to.

1. Deposits - money obtained during accounting year from sales of products, services and from subsidies and subventions.

2. Receipts - (sales) value of items and services handed over for cash or on loan, without the due VAT amount.

3. Withdrawals - amount of money spent during the accounting year.

4. Expenditure (purchase) is a value of measures and services obtained for cash or on loan. If possible, this amount should be reduced by the VAT amount.

IV.3. Production terms

They pertain to the output from particular activity, division or the whole farm. They include products used up on a farm, sold, and in specific situations also other income, e.g. general economic subsidies or grants.

1. Revenue is a sum of receipts in the accounting period corrected by stock from the beginning (-) and the end (+) of this period. Revenue of a farm is a value of marketable and non-marketable production produced in a defined period of time (accounting period), along with other pecuniary income related to its operational activity during this period.

2. Crop's output and output from livestock products - value of revenue increased by the farm use of particular products, as well as transferes free of charge outside a farm.

3. Output from livestock activity – revenue increased by the market value of animals transferred to other activity, transferred free of charge outside a farm and reduced by: expenditure on purchasing animals and the market value of animals received free of charge from outside a farm as well as from another activity. The value of output may be calculated including or excluding revaluation of animals' value due to inflationary change of prices (given in total value of revaluation of initial stock of animals).

4. Output from non-marketable crops and livestock products is equal to revenues, corrected by potential receipts and the value of free of charge transfers outside the farm.

5. Output of a farm is a sum of output of all farm activities, corrected by the change in ongoing crop production in long cycle and increased by other financial revenue.

6. Output of a farm (if it is calculated) includes total revenue increased by the value of products transferred to farmhouse and payments in kind, and reduced by costs of purchasing livestock, livestock products and other products purchased for resale. Total output includes livestock and crop output and other output.

IV.4. Cost related terms

1. Costs - value of used up means of production along with financial benefits related to operational activity of a farm during a defined period of time (financial period).

Costs are expenditure related to operational activity of a farm, corrected by the value of:

- the difference in stock of means of production between the end and the beginning of a year,
- own potential marketable products, used up on a farm,
- means of production transferred free of charge to a farm,
- means of production for farm investments transferred free of charge,
- means of production transferred free of charge outside a farm.

To calculate the Gross Margin, costs are divided into specific and indirect costs.

2. Financial costs (Withdrawals) are financial assets disbursed during the financial period for operational activity of a farm.

3. Specific costs are costs which can be included without a doubt to a given production activity and the amount of which is proportional to the scale of production.

The general rule for including particular costs among specific costs is the simultaneous fulfilment of three criteria, namely:

- possibility to qualify them into a given activity,

- their amount is proportional to the scale of production,
- they have direct influence on the output.

The following belong to specific costs of activity in agricultural holding: seeds, fertilizers, crop protection products, veterinary services and medicines, fodders and insurance on particular activities.
(The abovementioned definition of specific costs is adequate to substantial rules for calculating Standard Gross Margin coefficients used in Community typology for agricultural holdings until the end 2009).

4. Intermediate consumption includes farm use of on farm produced products, as well as the value of purchased materials (along with fuels), energy, external services (external processing, agro-technical services, veterinary services, commissions paid for bank services), costs of business trips and other costs (e.g. insurance).

5. Depreciation - decrease in value of tangible assets due to physical and "moral" consumption. Depreciation indicates the cost of using tangible assets in a given period.

6. Costs of external factors - costs of involvement of external production factors in operational activity of an agricultural holding:

- interest on credits,
- payments in kind,
- rents for leased tangible assets (e.g. for land).

IV.5. Margins

The purpose of economic activity is to obtain the expected amount of economic surplus. Different categories of surpluses, calculated by subtracting particular costs from production (revenue) have been described below. Some of them are used on the level of activity while others on the level of agricultural holding.

1. Cash income is a surplus of cash received for operational activity in accounting year. It is calculated by subtracting the amount of cash withdrawn from cash register or bank account of agricultural holding from the amount of cash deposited to cash register or bank account of agricultural holding.

2. Gross Margin from an activity is output of particular activity decreased by its specific costs.

3. Farm Gross Margin is a sum of Gross Margins of crop and livestock products produced in agricultural holding increased by other income. Alternatively, it corresponds to the revenue of agricultural holding decreased by the sum of specific costs.

4. Value Added reflects the increase in value of goods produced in a given holding. There are two categories of value added, Gross Farm Income and Net Value Added.

5. Gross Farm Income of agricultural holding in market prices is an economic margin that remained after subtracting the value of intermediate consumption from the value of agricultural holding output. It reflects the newly created value in agricultural holding in a financial period through all three productive factors (land, capital and work) irrespective of who is their owner.

6. Gross Farm Income of agricultural holding according to the costs of production factors is a Gross Family Income in market prices corrected by the balance of subsidies and taxes. It reflects the influence of state policy on economic position of agricultural holding formed by the system of subsidies and taxes.

7. Net Value Added of agricultural holding according to the costs of production factors is a Gross Farm Income according to the costs of production factors decreased by the valueof using up tangible assets subject to depreciation. It reflects the accomplished payment of all production factors (land, capital and full cost of work and

management). Therefore, it is a useful measure of income obtained by all owners of production factors (land, work and capital) involved in agricultural holding's activity. This category is one of few measures suitable for the analysis of economic outturn resulting from the agricultural holdings' activity with a different ownership structure of production factors.

8. Family Farm Income (FADN category) is a Net Value Added reduced by the cost of external factors (wages, interests and rents) and increased by investment grants and subsidies.
The income calculation does not include costs of: payment for farmer's and farmer's family labour, costs of own capital contributed to the holding in the form of land and other assets. However, it is known that family members employed externally could obtain remuneration and the money spent for the purchase of holding's assets and its current activity could bring tangible income e.g. in a form of interest from bank deposits or bonds.
Therefore, the income from agricultural holding is a remaining economic margin to pay for farmer's costs of labour and for involvement of own capital in the operational activity of agricultural holding (The calculation of Family Farm Income (FFI) is given in annex 1. The rest of economic FADN categories calculation schemes are given in publication "2012 Standard Results of Polish FADN agricultural holdings").

IV.6. Balance sheet

1. Farm's balance sheet is a photograph of an agricultural holding's assets and claims regarding its assets at a defined moment (e.g. on 1 January 2014).

This picture can quickly change, e.g. on the next day after the statement preparation data, if wheat grain is transferred to a recipient and there is an amount due for it. Then, the stock will change and the receivebles will increase.

2. Assets – entirety of resources and property, owned by an economic entity at a given time, of defined monetary value.

3. Fixed assets are assets which are relatively long-term investments, used in more than one production cycle. They determine production potential of agricultural holding.

Fixed assets, used for production and sale of products of economic entity do not change their form, e.g. land, buildings, machinery, and are not intended for sale or exchange for cash in current activity.

Among fixed assets are: tangible, financial, long-term receivables and intangible.

4. Circulating assets are usually divided into two subgroups:

- **circulating capital** including current tangible assets intended for sale (exchange for cash) in a short period of time (one year or shorter in general) and "almost monetary assets" which are e.g. receivables and prepayments granted to other economic entities.
- **tangible circulating capital** – materials purchased for one's own needs, produced or processed by unit: prepared goods (products, services and work), fit for sale, in the course of production or semi-finished products and goods purchased for resale in unprocessed state,
- **monetary assets** – money (banknotes and coins) and domestic and foreign currencies, both in cash and in bank account or in the form of a deposit, checks and external bills of exchange if payable during 3 months from the date of issue, as well as precious metals, if not classified as tangible circulating assets.

5. Crop production not yet harvested of a short cycle includes the value of all specific costs incurred in autumn for one-year winter crops and for spring plants sown in spring of the next year. This type of asset is a specific type of stocks of materials stored in a field and therefore impossible to recover in the original form.

6. Crop production not yet harvested of a long cycle is a sum of incurred costs – from the moment of starting the production to the moment of obtaining a product. The examples of

such production are nurseries (fruits, ornamental) as well as plantations of Christmas trees. This type of asset is a specific type of stocks of own product of agricultural holding.

7. Receivables are elements of assets in the statement indicating market partners' obligations on account of default in payment for goods or services purchased from a holding.

8. Short-term receivables – receivables whose repayment period on the balance day is not longer than one year.

9. Total liabilities – sum of all liabilities of agricultural holding towards owners and creditors. Liabilities are the value of all funds which financed the assets of agricultural holding. There are two main categories: temporary liabilities and permanent liabilities. Temporality of liabilities results from the fact that they must be returned to source on agreed date.

10. Debts can be classified as temporary liabilities, since they are assets borrowed for a specific period of time. Depending on the arranged repayment date, we can distinguish:

- **long-term debts** that are loans, credits and other obligations, not claiming the repayment before a one-year period from the holding under normal circumstances.

Examples are: mortgages, banking credits and loans from private persons (regardless of them bearing interest or being interest-free).

- **short-term debts** are claims towards a holding with a repayment period not longer than one year on the balance day. Examples are: outstanding payments for collected productive assets and services, money withdrawn in excess of a banking operational account (overdraft), short-term credits, advance money collected from other economic entities (e.g. towards the future supply of piglets). Specific type of short-term obligations are instalments of long-term credit to be paid in a current year.

11. Net worth are permanent liabilities which indicate owner's participation in financing assets present in agricultural holding.

In the balance practice this is a margin of the value of assets presented in the balance sheet of agricultural holding, which remains after deducting the value of short-term and long-term debts. Its calculating method results from the applicable balance equation:

Assets = Debts + Net worth

IV.7. Financial ratios and indexes

Relations between elements of "operational activity's economic outturn account" and elements of "balance", as well as main categories of "assets and liabilities" can be expressed both in the form of a relation and percentage indicators.

A valuation method used at preparing the balance and in the operational activity's economic outturn account has a significant influence on indicators (relations) and there might be a need for a correction before the calculation of certain management-useful relations.

IV.7.1. Criteria for financial assessment

- **Liquidity** is the farm's capability to fulfil financial obligations within an arranged time limit, without causing disruptions in its normal functioning.
- **Solvency** – specifies the amount of borrowed external capital, introduced to agricultural holding's resources in relation to net worth.
- **Profitability** specifies a margin in resources from which a holding obtains an economic margin – profit (of own productive factors – labour, land and capital).
- **Debt repayment capacity** specifies the possibility to repay the debt by use of a holding's income and all other external sources.
- **Financial effectiveness indicates:**
  - the level of physical labour, management, land and capital efficiency,

- relations between input and output.

IV.7.2. Ratios and indexes

1. Leverage Ratio means long and short-term credits borrowed according to a fixed interest rate to net worth ratio. Net worth generates a higher surplus when credit price (paid interest) is lower than asset profitability index.

2. Indexes describing financial effectiveness of an agricultural holding's operational activity (set of four indexes). The sum of these indexes' values must amount to 100%.

- **Operational costs index**

[[Total operational costs of an agricultural holding - interest - depreciation) / farm output]x 100%

- **Depreciation cost index**

[Depreciation / farm output] x 100%

- **Interest cost index**

[Interest / farm output] x 100%

The sum of three first indexes reflects the share of farm's costs per production value unit.

- **Farm Family Income index**

[Farm Family Income / farm output] x 100%

This index reflects the margin rate of income realised from one unit of farm output.

3. Total debts / liabilities

This index indicates a participation of external capital in financing the farm's assets. Too high level of this index, especially linked to the high level of debt service index, indicates the risk of financial difficulties.

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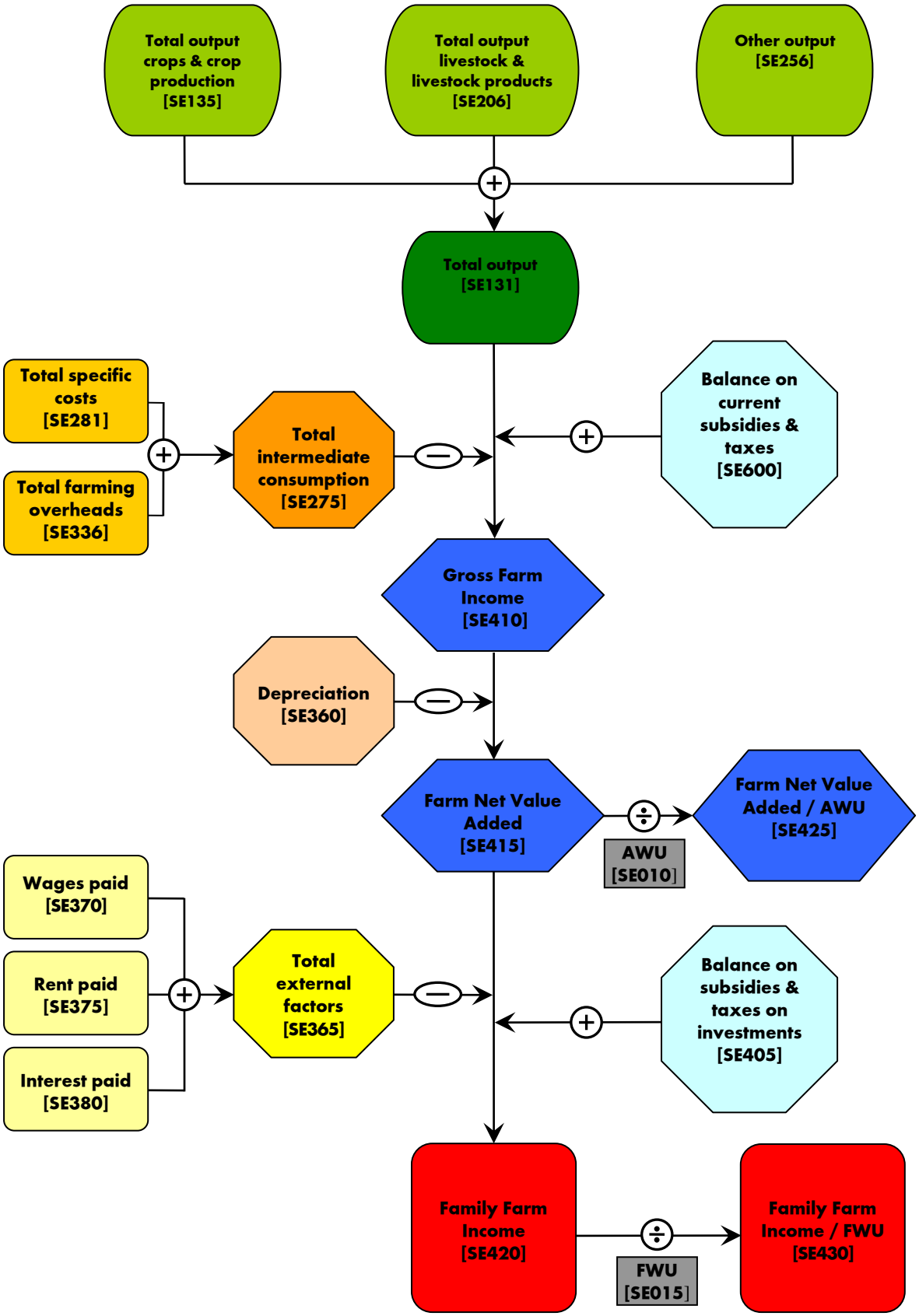
VI. ANNEXES

Annex 1. The calculation of Family Farm Income (FFI)



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