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Grażyna Borys

Małgorzata Solarz



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Elżbieta Hajduga

Wrocław University of Economics

THE SYSTEM OF COST ACCOUNT IN AGRICULTURAL ACCOUNTING

Abstract: Running agricultural accounts, and basic knowledge about costs, their recording and presentation allow for performing correct activities in the decision-making process at both operational and strategic levels. In the perspective of the need to keep the books in Poland by agricultural holdings both defining and implementing the adequate system of cost account in these units seem a current problem. The objective of the paper was therefore to present cost classification and to define cost account in agricultural accounting. Variants of cost accounting have also been presented with reference to the specific nature of agricultural activities. The basic research methods used by the author were the following ones: the method of literature references analysis and critical approach and formal methods (graphical and tabular description method).

Keywords: agricultural accounting, cost, cost structure, direct surplus, cost account.

1. Introduction

Agricultural accounting represents the typical sector-oriented accounting considering specific characteristics of agricultural activities.¹ In general terms agricultural accounting can be defined as a particular system for collecting, recording and processing information and referring to an agricultural holding property status and financial position, as well as the result of the performed farming activities. Literature reference sources distinguish three basic objectives of the accounting run by agricultural holdings: fiscal, research focused and for the purposes of management. These objectives are determined by the types of agricultural holdings ownership and the financial and tax regulations in force. The accounting for management needs should offer, among others, cost information indispensable for the manager of an

¹ It should be mentioned that the concept of agricultural activity in Polish legislation is present in several legal acts (e.g. the Act on the Taxation of Farm Income, the Act on Goods and Services Tax, the Act on Personal Income Tax, the Act on Corporate Income Tax, or the Act on Freedom of Economic Activity), however, the respective definition is missing in the Accounting Act.

agricultural holding to undertake economic decisions. The components of agricultural accounting take the form of: records, agricultural calculations, reporting and non-accounting cost calculation.

2. The concept and classification of costs

Every economic activity involves tangible assets, human labour or third party services. This, obviously, generates costs which determine revenues earned by an entity. These revenues, on the other hand, facilitate the continuation of business activities and the subsequent profit generation. There are many definitions of cost offered by academic reference source. All of them are quite consistent. In general, it can be stated that a cost, following its common understanding, means:

- intentional consumption of an economic entity assets,
- certain expenditure not reflecting the consumption (within the scope of an economic entity activities, e.g. fiscal charges),
- outflow of the assets sold.

The Accounting Act defines costs as the probable decreases of economic benefits of a reliably estimated value, which may arise during a reporting period in the form of decrease in the value of assets or increase in the value of liabilities and provisions that will result in a decrease of equity or an increase of the equity deficit in a manner other than through a withdrawal of funds by shareholders or owners.²

Therefore in order to measure cost the following conditions have to be met:

- valuation,
- production factors consumption,
- assigning to a period,
- intentional consumption (an effect occurrence).

Costs, depending on the needs (analysis, statistics, reporting, control or management), can be classified following different criteria (Table 1).

Running an agricultural activity, owing to its specific nature, requires incurring and grouping costs by their type. In accordance with the guidelines of Polish FADN³ agricultural accounting applies the system of costs classification including direct and indirect costs. Following the definition of accounting costs, FADN defines indirect costs as the expenses:

- which can be, beyond any doubt, included in a particular production activity,
- whose size is proportional to production scale,
- which have direct impact on production volume (values).

² Art. 3, par. 1, pt. 31 of the Act on the amendment to the Accounting Act [Ustawa z dnia 9 listopada 2000...].

³ FADN, i.e. Farm Accountancy Data Network. The legal basis of Polish FADN is the Act on collecting and use of accountancy data from agricultural farms [DzU z 2001 r. nr 3, poz. 20]. The Act came into force on the day of Poland's accession to the EU, i.e. on May 1st, 2004.

Table 1. Cost classification criteria

Division criterion	Positions of costs
1. In profit and loss account	Costs of operating activities Other operating costs Financial costs
2. Costs by type	Materials and energy consumption Depreciation Salaries Social security and other benefits Third party services Taxes and surcharges Other costs by type
3. Costs by internal structure	Simple costs Complex costs
4. Costs by operating activities	Costs of basic activities Costs of ancillary activities Costs of management Costs of sales
5. Costs by the place of origin (activity phases)	Costs of purchasing phase Costs of production phase Costs of sales phase
6. Costs by the level of dependence on production volume	Fixed costs Variable costs
7. Costs by the method of relating them to manufactured products	Direct costs Indirect costs
8. Costs by their relations to obtained revenues	Cost of revenues Cost and expenses which are non-deductible
9. Costs by the choice of future policy option	Essential cost Negligible costs
10. Costs by the possibility of influencing their taking or avoiding	Mature costs (sealed) Accrued costs (future)
11. Costs by opportunities of their control	Controlled costs Uncontrollable costs
12. Temporary nature of costs	Historical costs Running costs Future costs

Source: author's compilation based on [Kiziukiewicz (Ed.) 2002, pp. 44, 45; Sojak 2003, pp. 36–46, 56–58; Gabrusewicz et al. 1998, pp. 52, 61,73; Drury 1998, p. 38].

Among indirect costs the following can be listed:

- general economic costs (costs of energy, heating, fuel, lubricants, current renovations, maintenance, servicing, property and communication insurance),
- taxes,
- depreciation,
- costs of external factors (rent, leases, interests, hired labour).

The division of costs into direct and indirect is necessary in order to define direct surplus. It is the surplus of production value, resulting from a given agricultural activity, over the value of indirect costs.⁴ These costs structure differs depending on an agricultural holding size class (Fig. 1) and also on its agricultural type (Fig. 2).

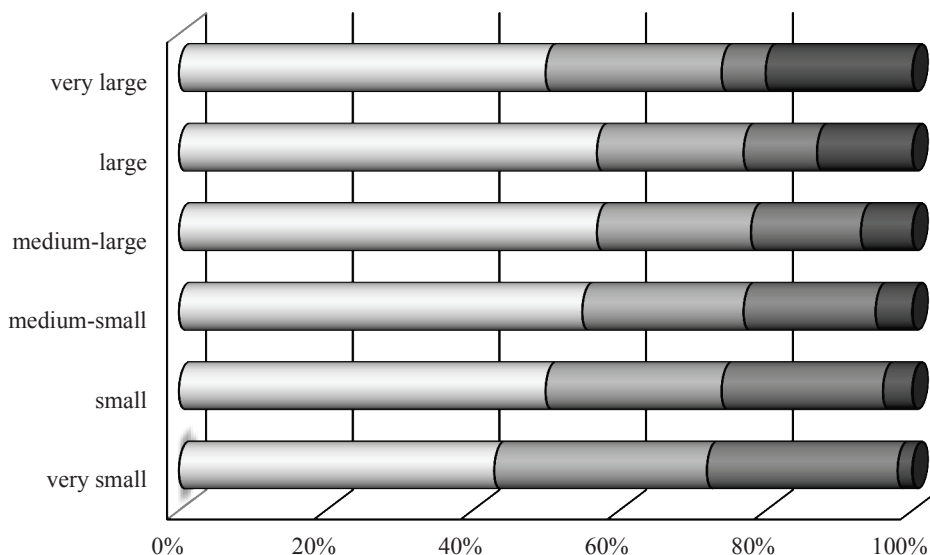


Figure 1. Total cost structure by economic size classes of agricultural holdings in 2011

Source: author's compilation based on [Goraj et al. 2012, p. 43].

Direct costs constitute the largest share of the cost structure in every economic class. They present the level ranging from 43% in very small agricultural holdings up to 57% in medium-large and large ones. Very large agricultural holdings feature the highest share of external factors. It amounts to 20% of total costs and represents the effect of hired labour used in large agricultural holdings.

The highest share of direct costs, in the total cost structure, refers to granivorous livestock farming (70%) and also features the smallest share of costs related to external factors. In case of permanent crops the share of depreciation in total costs is significant and presents the level of almost 40%.

⁴ Direct surplus refers to the measure used for the assessment of an agricultural holding economic size in line with the European size unit (ESU). This measure is used in all European Union member states. Direct surpluses are calculated based on empirical data originating from the reporting system of agricultural holdings. Direct surpluses used for comparing production activities between different farms have to be calculated in line with the uniform rules in terms of production value and direct costs. It offers the possibility to perform due analyses of economical situation in agricultural holdings characterized by a similar potential and production line [Goraj et al. 2004, p. 26].

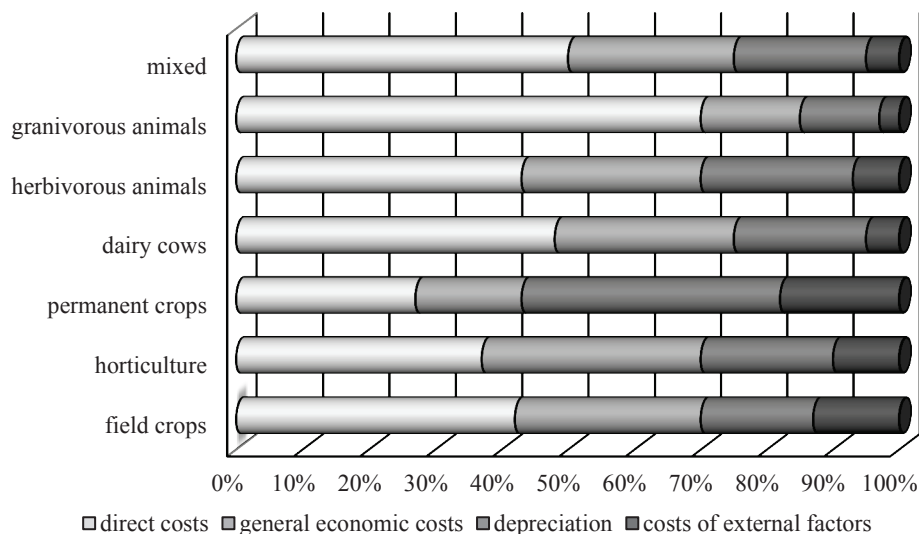


Figure 2. Total cost structure by types of agricultural holdings in 2011

Source: author's compilation based on [Goraj et al. 2012, p. 21].

Therefore, proper costs aggregation, grouping and presentation not only deliver a lot of valuable information for the needs of external accounting, but mainly provide information for the control and management purposes. This observation confirms that the importance of cost account for every entity running a business is undisputable.

3. The concept of cost accounting

Cost account, apart from recording and reporting, represents one of the accounting components. It refers to costs registration in various recording systems, their settlement, calculation, analysis and planning, in order to control expenditure and make decisions about their future level. Academic reference sources offer different definitions of cost account. J. Matuszewicz defines cost account in terms of all activities aimed at identifying the level of living and objectified workload incurred in an enterprise in a given time and for a particular purpose [Matuszewicz 1994, p. 5]. A similar definition is offered by C. Drury. According to him cost account delivers information indispensable for preparing financial accounting reports referring to costs allocated in every product and service [Drury 1998, p. 34]. Cost account was presented from a broader perspective by E. Nowak who claims that the basic objective of contemporary cost account is to provide economic information for its users in order to assess the conducted business activities and undertake rational economic decisions [Nowak 2010, p. 13]. In general, it can be stated that the discussed cost account is a part of accounting information system. It represents the

collection of information about operating activities carried out by an entity and prepared in line with an approved model adjusted to the information needs of both internal and external information addresses. Its purpose is to deliver information referring to managerial decision-making processes and controlling these decisions implementation, as well as the information related to stock valuation and financial result measurement in accordance with accounting law provisions. Therefore cost account should ensure the following information for every entity [Kiziukiewicz (Ed.) 2002, pp. 95, 96]:

- costs measurement and valuation,
- the presentation (based on adequate documents) of procurement, production, sales processes flow,
- costs grouping in different cross-sections,
- information presentation about costs in the form of statements facilitating both interpretation and evaluation of costs formation.

Cost account should also carry out different functions, e.g. calculating, decision-making, controlling, analytical, fiscal or statistical.

4. Cost account in agricultural activities

Costs, at their planning and recording stage, constitute the basis for undertaking decisions in the course of an economic entity management process. Therefore, cost account represents an integral part of this process and its crucial objective is the rationalization of decision-making processes within the framework of an overall entity management processes. It is also in agriculture that cost account plays such a role. Cost account has already appeared in the 19th century, also in agricultural accounting, and has been widely used since. Two approaches have emerged in agricultural accounting with reference to cost account for the purposes of agricultural holdings: synthetic and analytical approach. The first of them refers to a farm, as a unit, within which numerous relations occur between particular departments, branches and types of activities, and owing to such interdependencies it is difficult to split costs correctly, mainly the indirect one, between the diversified activity types. On the other hand, analytical approach refers to an agricultural holding as the set of independent, from each other, manufacturing operations which generate both revenues and costs and in consequence the income obtained from every particular type of activity, as well as the total one, can be specified.⁵ Analytical accounting is also referred to as double-entry accounting or spreadsheet accounting. The division of costs into fixed and variable ones has become the breakthrough in cost account application. In the 50s of the 20th century this type of costs division was popularized in farming and especially in their calculation. Figure 3 illustrates the system of agricultural accounting.

⁵ More about synthetic and analytical accounting systems in: [Goraj et al. 2004, pp. 118–121].

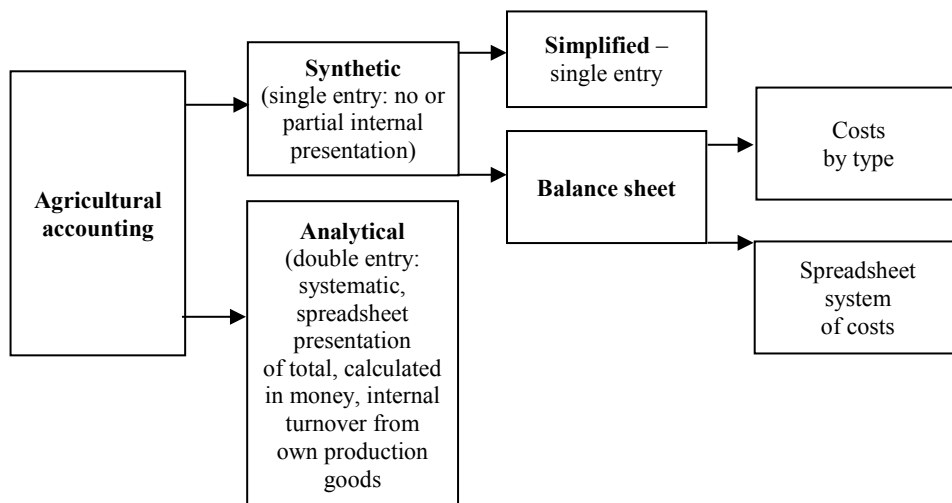


Figure 3. Agricultural accounting system by R. Manteuffel

Source: author's compilation based on [Kondraszuk 2010, p. 91].

Attention should be paid to the fact that in the spreadsheet system the variable cost account, allowing for direct surplus calculation, is included in the synthetic system. Only after the valuation of total internal turnover, generated from the goods of own production and the division of full costs into particular activities, qualifies accounting, according to R. Manteuffel, to be included in an analytical system [Kondraszuk 2010, p. 90].

The Accounting Act provides entities, also agricultural ones, with freedom regarding the choice of cost accounting type and the method of financial result calculation. It is quite common for agricultural entities to apply an extended and comprehensive cost accounting variant. Costs are first presented in the accounts of group 4 (costs by type) with their settlement on particular accounts of group 5 to follow (costs by activity type).⁶ Therefore the record of agricultural goods production costs, in an extended cost accounting variant, is performed in line with the following stages [Kiziukiewicz (Ed.) 2009, pp. 156–158]:

1) prime costs presentation on cost accounts by type based on source documentation;

2) settlement of costs by type referring to production on the accounts (synthetic and analytical):

- “basic activity costs – plant production” or
- “basic activity costs – livestock production”;

⁶ Cost accounting only on group 5 accounts is also possible, however, in accordance with analytical approach an additional cost division by type should be applied.

- 3) settlement of overheads by type (in a given period) on the accounts:
- “management costs”,
 - “sales costs”;
- 4) common production costs records (departmental costs) on the accounts:
- “departmental costs – plant production”,
 - “departmental costs – livestock production”
- by distinguishing positions referring to common costs of particular product types/varieties;
- 5) periodic common costs settlement by cost drivers;
- 6) referring to the “accruals and deferred income” account, these costs which have been incurred in the current period, but related to future periods;
- 7) separating auxiliary activity costs in the records and their periodical settlement;
- 8) production costs transfer into the following accounts:
- “finished products” – the acceptance of finished goods from production to storage at actual production cost,
 - “settlement of activity costs” – the acceptance of finished goods from production to storage at planned production cost,
 - “the cost of products sold” – disbursement of products not subject to storage at actual production cost,
 - “settlement of activity costs” – disbursement of products not subject to storage at planned production cost,
 - “production costs – X” – disbursement of products not subject to storage and constituting raw materials for production,
 - “other operating costs” – disbursement of products not subject to storage transferred free of charge immediately after their acquisition/pickup,
 - “management costs” – disbursement of products not subject to storage transferred for an enterprise general objectives and own needs immediately after their acquisition/pickup,
 - “extraordinary losses” – the occurrence of finished goods shortages or losses resulting from random events,
- 9) periodic determination and settlement of recorded price deviations for the products sold and these in stock transferred free of charge for the business own needs or lost as the result of random events.

At the end of reporting period, and having followed the adequate cost recording procedure, the income earned as the result of business activities has to be calculated. For this reason the mentioned above direct surplus is used and the income itself is calculated based on the following formula [Ziętek 2008 after Ziętara 2009, p. 307]:

$$\begin{aligned}
 & \text{production value} \\
 & \quad - \text{direct costs} \\
 & = \text{direct surplus without subsidies} \\
 & \quad - \text{direct effective costs} \\
 & = \text{gross value added from business operations}
 \end{aligned}$$

$$\begin{aligned} & - \text{indirect cost estimate} - \text{depreciation} \\ & = \text{net value added from business operations} \\ & \quad - \text{cost of external factors} \\ & = \text{income from business operations without subsidies} \\ & \quad + \text{subsidies} \\ & = \text{income from business} \end{aligned}$$

It is vital to keep in mind that indirect surplus is of the greatest importance in this case. The income earned, based on the performed business operations, is calculated for every type of agricultural activities (plants and livestock) and not for the entire agricultural holding.

5. Final remarks

In case of agricultural accounting for the needs of management cost accounting should cover the division of production costs into direct and indirect ones. It is also important to perform the ongoing recording and monitoring of cash revenues and expenditure.

Cost account in agricultural activities and its application is more complicated than in case of other economic entities (i.e. non-agricultural activities) owing to the specific nature of farming. It results from limited production capacity, combining manufacturing processes with running a farm (i.e. obviously an individual farm), as well as not taking into account, quite frequently, the depreciation costs in the course of calculation processes for managerial purposes. The awareness of costs and their structure represents the fundamental factor in the broadly approached decision-making process regarding current and future issues at both micro and macroeconomic scale.

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SYSTEM RACHUNKU KOSZTÓW W RACHUNKOWOŚCI ROLNEJ

Streszczenie: Prowadzenie rachunkowości rolniczej i podstawowa wiedza na temat kosztów, ich ewidencji oraz prezentacji pozwalają na prawidłowe działania w zakresie podejmowania decyzji na poziomie zarówno operacyjnym, jak i strategicznym. W perspektywie konieczności prowadzenia w Polsce księgowości przez gospodarstwa rolne zdefiniowanie i wdrożenie odpowiedniego systemu rachunku kosztów w tychże jednostkach wydaje się aktualnym problemem. Celem artykułu było zatem zaprezentowanie klasyfikacji kosztów oraz zdefiniowanie rachunku kosztów w rachunkowości rolnej. Przedstawiono również warianty ewidencji kosztów, mając na uwadze specyfikę działalności rolniczej. Podstawowymi metodami badawczymi wykorzystanymi przez autorkę były: metoda analizy i krytyki literatury przedmiotu oraz metody formalne (metoda opisu graficznego i tabelarycznego).

Słowa kluczowe: rachunkowość rolnicza, koszt, struktura kosztów, nadwyżka bezpośrednia, rachunek kosztów.