

# PRACE NAUKOWE

Uniwersytetu Ekonomicznego we Wrocławiu

# RESEARCH PAPERS

of Wrocław University of Economics

Nr 345

## Performance Measurement and Management

edited by  
Bartłomiej Nita



Publishing House of Wrocław University of Economics  
Wrocław 2014

Copy-editing: Agnieszka Flasińska

Layout: Barbara Łopusiewicz

Proof-reading: Barbara Cibis

Typesetting: Małgorzata Czupryńska

Cover design: Beata Dębska

This publication is available at [www.ibuk.pl](http://www.ibuk.pl), [www.ebscohost.com](http://www.ebscohost.com),  
Lower Silesian Digital Library [www.dbc.wroc.pl](http://www.dbc.wroc.pl),  
and in The Central and Eastern European Online Library [www.ceeol.com](http://www.ceeol.com)  
as well as in the annotated bibliography of economic issues of BazEkon  
[http://kangur.uek.krakow.pl/bazy\\_ae/bazekon/nowy/index.php](http://kangur.uek.krakow.pl/bazy_ae/bazekon/nowy/index.php)

Information on submitting and reviewing papers is available on  
the Publishing House's website  
[www.wydawnictwo.ue.wroc.pl](http://www.wydawnictwo.ue.wroc.pl)

All rights reserved. No part of this book may be reproduced in any form  
or in any means without the prior written permission of the Publisher

© Copyright by Wrocław University of Economics  
Wrocław 2014

**ISSN 1899-3192**

**ISBN 978-83-7695-473-8**

The original version: printed

Printing: EXPOL, P. Rybiński, J. Dąbek, sp.j.  
ul. Brzeska 4, 87-800 Włocławek

## Contents

Preface.....	7
<b>Anna Balicka, Mariola Kotłowska:</b> Internal benchmarking of technological process in a heating company .....	9
<b>Justyna Dyduch:</b> Discount rate in the assessment of investment project effectiveness.....	23
<b>Tomasz Kondraszuk:</b> Conceptual framework of strategic and operational cost accounting in agriculture .....	39
<b>Dawid Lahutta, Paweł Wroński:</b> The influence of the Cost-to-Serve methodology on customer profitability .....	47
<b>Marek Masztalerz:</b> Global Management Accounting Principles – emperor’s new clothes? .....	57
<b>Marta Mazurowska:</b> The role of behavioural research in management accounting .....	66
<b>Bartłomiej Nita:</b> Integrated cost management in supply chain.....	74
<b>Marta Nowak:</b> Male and female controllers. Between controlling and gender studies..	85
<b>Patrick Siegfried:</b> Analysis of the service research studies in the German research field .....	94
<b>Wiesław Wasilewski:</b> Risk analysis in cultural institutions .....	105

## Streszczenia

<b>Anna Balicka, Mariola Kotłowska:</b> Benchmarking wewnętrzny procesu technologicznego w przedsiębiorstwie ciepłowniczym .....	22
<b>Justyna Dyduch:</b> Stopa dyskontowa w ocenie efektywności projektów inwestycyjnych.....	38
<b>Tomasz Kondraszuk:</b> Ramy koncepcyjne strategicznego i operacyjnego rachunku kosztów w rolnictwie .....	46
<b>Dawid Lahutta, Paweł Wroński:</b> Wpływ metody Cost-to-Serve na zyskowność klienta.....	56
<b>Marek Masztalerz:</b> Globalne zasady rachunkowości zarządczej – nowe szaty cesarza?.....	65
<b>Marta Mazurowska:</b> Rola nurtu behawioralnego w rachunkowości zarządczej.....	73
<b>Bartłomiej Nita:</b> Zintegrowane zarządzanie kosztami w łańcuchu dostaw .....	84
<b>Marta Nowak:</b> Mężczyźni i kobiety jako controllerzy. Pomiędzy controllingiem a <i>gender studies</i> .....	93
<b>Patrick Siegfried:</b> Analiza usług świadczeń w niemieckich badaniach gospodarczych .....	104
<b>Wiesław Wasilewski:</b> Analiza ryzyka w instytucjach kultury .....	115

**Tomasz Kondraszuk**

Warsaw University of Life Sciences

e-mail: tomasz\_kondraszuk@sggw.pl

---

## CONCEPTUAL FRAMEWORK OF STRATEGIC AND OPERATIONAL COST ACCOUNTING IN AGRICULTURE<sup>1</sup>

---

**Summary:** The paper presents the specific characteristics of agricultural activity and its implications for the strategic and operational management of costs. This perspective served as a foundation for developing the framework of strategic and operating cost accounting. Due to the mass character of agricultural production it is particularly important for farmers to implement the cost leadership strategy. Another crucial issue relates to the individual and collective goals of rural families accomplished in agricultural households. The distinguishing criterion of cost categorization is their variable or fixed nature determined from the point of view of the whole farm (enterprise). The conclusion lists the most important specific features of the strategic and operational cost accounting in agriculture, which determine its conceptual framework.

**Keywords:** cost accounting, agriculture, strategic and operational management.

DOI: 10.15611/pn.2014.345.03

### 1. Introduction

Agriculture is a unique area where social, environmental and economic human aims converge. The fate of rural families is strongly related to agricultural holdings and in turn the agricultural activity is determined by the situation of the farmers and their families. This activity largely depends on the environmental conditions which the farmers try to influence and shape to their needs. Agricultural holdings (enterprises), like many other companies in Poland after 1989, began to operate under the conditions of market economy adopting its principles. In order to survive and compete effectively in the market farms must employ appropriate strategies. According to M.E. Porter the basic competitive strategies are: a cost leadership strategy, a differentiation strategy, and a focus concept [Nowak 2006]. Due to

---

<sup>1</sup> The study conducted under the research grant No. 3688/B/H03/2011/40 entitled “Cost Accounting in Agriculture under Conditions of Sustainable Development”.

the mass nature of agricultural production, farmers need to implement low-cost management and minimize incurred costs. As rightly observed by Jaruga et al. [2010, p. 75], “Concepts of costs developed over time following the increasing number and complexity of functions developed by enterprises to address growing public relations requirements and demand for information”. Cost accounting has become a hallmark of management accounting and indispensable tool in management processes. Planned and implemented objectives of economic entities are traditionally ordered according to the time horizon. According to Griffin [2006] “Operations management refers to the goals which can be achieved in short periods (1–3 years). In contrast, strategic management refers to the goals in line for longer periods (5–10 years). It should be noted that the effective accomplishment of all goals requires the integration of operational and strategic decisions.”

Strategic cost management assumes that decisions taken today generate costs in the future. Therefore, in order to achieve long-term profitability, they should be carefully planned and subject to periodic audits. The necessary additional condition is the possibility of their continuous verification. The most popular methods of strategic cost management include: a product life cycle costing, target costing and *kaizen* costing.

Agriculture relies on quantitative measures (expenditure) which, when expressed in monetary value, will be called costs [Manteuffel 1964, p. 13]<sup>2</sup>. Farmers carefully analyze the quantitative measures like: yield from one hectare, daily gain of animals, etc. These measures allow them to determine the expense/product relationship and, after taking into account the prices they try to control, the ultimate costs and revenues. On the other hand, farmers are obliged to respect the principles of good agricultural practice and sustainable development. The change of the farming paradigm and shift from agriculture oriented on maximizing the production towards sustainable development model forces farmers to include external costs of farming in their economic calculations. In this case, the personal costs approximate social costs.

An important element of the strategic cost accounting in agriculture is the natural environment. The biological nature of agricultural production entails care of natural resources, protection of ecosystems, animal welfare, biodiversity, etc. Taking into account the perspective of “sustainable development” implies the search for the compromise between the financial (economic) and ecological approach to agricultural operations. Similarly, the household perspective implies the recognition of the individual and collective goals of the rural family members. The rural family has a direct impact on the functioning of an agricultural holding, which distinguishes it from other business entities (enterprises). Decisions concerning the family (household) bind the members to the farm for many years.

---

<sup>2</sup> And further Manteuffel [1964] notes: “Unless the term ‘expenditure’ is a concept largely organizational and answers the question ‘how’, whereas the term ‘cost’ is no longer a purely economic term and responds only to the question ‘how much’.

The paper attempts to present and evaluate the existing achievements in economic sciences in the construction of the theory of cost accounting and its use to reach the strategic and operational goals of agricultural holding.

In the phase of literary research the study primarily employs the methods of analysis and synthesis, while in the phase of concluding it uses the method of deduction.

## **2. Scope and tasks of cost accounting**

According to the traditional definition, cost accounting is “a set of activities designed to reflect the processes of supply, production and sales occurring in an enterprise, through recognizing, grouping and interpretation (in certain sections) of the costs of producing and selling products, measured by volume and value for a period of time, in order to obtain comprehensive information needed to determine the results and run a business or business units” [Fedak 1962, pp. 8, 9]. According to Jarugowa and Skowroński [1982, p. 77], “The value of information about costs results from the application of these costs as parameters of decisions optimizing operating modes. The measure of the incurred costs is the achieved result.” A similar view is expressed by Sojak [2003, p. 37], who notes that “The costs are deliberate use of factors of production expressed in monetary value [...] incurred in order to generate revenues from economic operations and consequently make a profit.” Bearing in mind the purposefulness of incurring costs and their direct relationship with the results, Jaruga et al. [2002, p. 84] state that “cost is the monetary expression of consumption (spending) of resources (goods and services) to gain current or future benefits.” The Polish Accounting Act defines costs as “probable decreases in economic benefits of a reliably estimated value, which may arise during a reporting period in the form of decreases in the value of assets or increases in the value of liabilities and provisions, that will result in a decrease of the equity or an increase of the equity deficit in a manner other than through the withdrawal of funds by shareholders or owners”. For management purposes, one can apply various concepts of capital preservation, i.e. a nominal capital, a real capital – based on the purchasing power of money, and the capital enabling property restoration or the restoration of the ability to generate income. In turn, Gmytrasiewicz and Karmańska [2002, p. 503] identify costs with all expenditures “which the entity bears voluntarily and in connection with the performed business operations, expressed through concluded contracts, approved plans and taken declarations or other obligations which are determined by the entity and by changes in market conditions.”

Currently, the issue of costs is much more widely understood. Sobańska [2009, p. 118] calls cost accounting a system, because “it uses a set of concepts and employs such methods of deduction as: methods of measuring costs, cost classification, and methods of product cost valuation; the structures of objects defined as causes of cost and revenue streams are hierarchically ordered and information related; additionally,

cost functions and revenue functions are defined and it has a set calculation goal – actual and projected costs and revenues of the entity.”

With regard to the purpose they are meant to serve, costs can be categorized in three broad groups:

- costs of the valuation of inventory and measuring the financial result,
- costs of decision making and planning,
- costs of inspection.

Calculating the value of inventory and measurement of results (profit and loss account) are among the most important tasks of any system of accounting and cost accounting. The Accounting Act requires entities to determine the cost of manufacturing a product in order to price the product and compare the costs of manufacturing products to their net selling prices. The entity should have a system of cost accounting adapted to the specifics of its operations, allowing for reliable and systematic accounting of production costs at the moment of their creation or, at the latest, for the balance sheet date. In order to value the inventory and measure the profit, the costs should be categorized and recorded in a manner allowing the calculation of the tax deductible costs of the period and capitalized costs on the balance sheet in the form of inventory. The valuation of inventory can only include the production costs. The period costs, which are non-manufacturing (economy-wide) costs, are disregarded.

In the full cost accounting products are assigned full plant-wide costs (manufacturing overheads). In the variable cost accounting fixed plant-wide costs are included in the period costs, while the products are assigned only the variable plant-wide costs (manufacturing costs).

However, agricultural activity is not subject to these rules. In accordance with International Accounting Standard No. 41 “Agriculture”<sup>3</sup>, agricultural products acquired/harvested from biological assets used by an enterprise are valued at fair value less estimated point-of-sale costs, incurred up to the point of harvest/acquisition of products. The determined fair value becomes the cost of their production needed for the valuation of inventory. Under the active market conditions, the determining fair value of biological assets and agricultural products is relatively easy and exempts the farmer from registering and calculating the production cost per unit.

In planning and decision making variable and fixed costs seem to be crucial<sup>4</sup>. At the *ex ante* stage the focus is on the possibility of achieving the future goals. Primarily, the focus is on the purpose oriented (basic) activity and the accompanying costs and random (extraordinary) revenues are ignored. When deciding on future events, the decision-maker requires detailed information on the expected costs and

---

<sup>3</sup> The works on the accounting standard in agriculture lasted very long. Finally, IAS 41 concerning agriculture was approved by the Board of IASC in December 2000 and used in the preparation of financial statements from 1 January 2003 and later.

<sup>4</sup> Detailed classification and assessment is provided by i.a.: [Ziętara, Kondraszuk 1987; Kondraszuk, Ziętara 1987; Kondraszuk 2010].

revenues. Unfortunately, this type of information is not provided by the traditional type of accounting system. It is necessary to introduce additional cost classification allowing for separation of costs relevant to the decision making process. The relevant costs are only those costs that are affected by a particular decision.

The third stage, the control, as well as planning must include the incurred costs and the accompanying cash flows and changes in net assets. The real problems in farm operations arise when there is the lack of cash balance at critical periods of time. Manufacturing and trading companies prepare financial statements every month or even every week. In agriculture we accept a quarter as the proper period for analysis and control of the achieved results. Of course, the results should be used as soon as possible to update the plan for the next period or year. When the financial statement is prepared it is time to evaluate the achieved results in relation to the planned ones. This evaluation provides valuable information for verification and preparing a new plan for further periods.

### **3. Conceptual framework for operational and strategic cost accounting in agriculture**

Implementing the strategy of cost leadership implies that agricultural producers must control the volume of incurred expenditure and costs. Their planning and shaping is a necessity, which allows for the accomplishment of the goals. In agriculture, information on expenditures and costs plays an important role in both the micro-scale, as the basis for calculating<sup>5</sup> the profitability of business operations, as well as in the macro-scale, to assess the costs of agricultural production in individual countries and the creation of agricultural policy [Kondraszuk 2010]. The cost accounting must maximize the differences between achieved results and costs in both the short and longer periods of time. The incurred costs pave the way to the realization of goals and therefore they must be disclosed and calculated at each level of decision-making. Their size is determined by the adopted farm mission, strategic goals, operational goals, organization of resources, changes in the environment and the ongoing operation of a farm. The “different costs for different purposes” principle and the plurality of criteria for evaluation of their rationality mean that there is no universal method of cost accounting. Definitions and scope of cost accounts differ depending on the pursued objectives and the use of cost information.

In the decision making process the key criterion for cost categorization is their fixed or variable nature. The cost item allocation to the fixed or variable category depends on the particular decision to be made and accepted planning horizon. In current planning the goods, in which the medium-term or long-term capital is

---

<sup>5</sup> The concept of “calculation” in agriculture is defined very broadly. It applies to cost accounting, as well as the ways and methods of economic calculation (e.g. differential calculation, calculation of profitability, etc.).



involved, are fixed costs. In operational planning the share of fixed costs is reduced, because the medium-term involved capital is the subject of operational planning. In strategic planning, which also takes into account the long-term goals of the farm, there are no fixed costs of the holding (“In the long run, all costs are variable”).

Please note that at the planning stage the comprehensive examination of the problems we are going to face is very important. In this case, the fate of the agricultural holding is closely related to the fate of the household<sup>6</sup>. Statement summarizing the achievements of a period is a statement of owner’s equity, in which the results of the farm merge with the results of the household.

A crucial part of the evaluation of business operations is the control of expenditure and incurred costs. The purpose of this inspection is to assess the effectiveness of implementation of the plan through a detailed analysis of the size of the deviations from the plan. Traditionally, the control process produces feedback as the current assessment of deviations implies taking necessary corrective actions. Therefore, cost accounting is increasingly often used within the system of controlling.

In the simplest case, the analysis of cost deviations may include deviations of variable (direct) costs of a single animal or plant production. In the case of significant deviations a further, more detailed cost analysis with regard to category is recommended. In many cases it will be possible to separate the analysis of deviations in investment outlay (volume) and price. Within the framework of horizontal analysis it is valuable to make comparisons between similar holdings.

There is still a need to analyze deviations concerning activity groups (branches), divisions and the whole holding with regard to variable costs and step costs. This brings us to the sum of direct farm surpluses where we can determine the cause of the difference between what we expected with what we actually managed to achieve.

The next step is to analyze the deviations of fixed costs (production overheads and economy-wide costs) which will have a considerable impact on the final result. It is important to separate the relevant and irrelevant costs of production potential, which constitute a large share of the fixed costs.

## 4. Conclusion

In the system of agricultural holding management, both at the *ex ante* and *ex post* stage, costs play an important role in the evaluation of business operations. Due to the implementation of the cost leadership strategy, farmers must make every effort in the pursuit of continuous cost minimization. Therefore, the costs should be carefully managed both at the stage of building the production capacity of a farm (strategic management), as well as at the stage of generating profit (operations management).

---

<sup>6</sup> Kondraszuk [2006, p. 80] proposed the term *rural holding* to cover both “agricultural holding” and “rural household.”

The following features distinguish agricultural activity and form the foundation of the conceptual framework in terms of strategic cost accounting:

- the need to take into account social and environmental objectives of agricultural activity, (adoption of the paradigm of “sustainable development”);
- the close relationship of the production activity (agricultural holding) and private activities (household);
- high impact of implemented agricultural policy and relevant institutions on the situation of holdings;
- the need to improve the productive potential and the importance of technical and biological progress;
- implementation of the cost leadership strategy;
- the organic nature of the farm (close links between divisions, branches and operations).

In terms of operating cost accounting the following aspects should be noted:

- the importance of quantitative relationships between e.g. expenditure and product;
- indirect effects on living organisms, plants and animals (management of the biological transformation);
- dependence of the production on natural conditions and the weather;
- adoption of the paradigm of the fair value for the calculation of income and financial result;
- the time gap between the incurred expenditure and the achieved effects;
- continuous optimization of the use of owned production potential;
- analyzing revenues and expenses, not with regard to the production volume (production cost per unit), but the available resources of production factors (land, capital, labour);
- large variability in the organization of production (production methods, work methods) and process costs (possibility of using services).

The abovementioned specific features of agricultural activity and the differences will be reflected in the demand for information that should be provided through properly designed cost accounting.

## References

- Fedak Z., 1962, *Rachunek kosztów produkcji przemysłowej. Zagadnienia wybrane*, PWE, Warszawa.
- Griffin R.W., 2006, *Podstawy zarządzania organizacjami*, Wydawnictwo Naukowe PWN, Warszawa.
- Gmytrasiewicz M., Karmańska A., 2002, *Rachunkowość finansowa*, Difin, Warszawa.
- Jaruga A., Kabalski P., Szycha A., 2010, *Rachunkowość zarządcza*, Wolters Kluwer Polska, Warszawa.
- Jaruga A., Nowak W.A., Szycha A., 2002, *Rachunkowość zarządcza. Koncepcje i zastosowania*, Społeczna Wyższa Szkoła Przedsiębiorczości i Zarządzania, Absolwent, Łódź.
- Jarugowa A., Skowroński J., 1982, *Rachunek kosztów w systemie informacyjnym przedsiębiorstwa*, PWE, Warszawa.

- Kondraszuk T., 2006, *Gospodarstwo wiejskie jako podstawa rachunku ekonomicznego – ujęcie metodyczne*, Roczniki Naukowe SERIA, t. 8, z. 1, Warszawa–Poznań.
- Kondraszuk T., 2010, *Metodyczne aspekty rachunku kosztów w rolnictwie*, Zeszyty Naukowe Szkoły Głównej Gospodarstwa Wiejskiego w Warszawie, Ekonomika i Organizacja Gospodarki Żywnościowej nr 85, Wydawnictwo SGGW, Warszawa.
- Kondraszuk T., Ziętara W., 1987, *Próba oceny przydatności optymalizacji jedno- i wielokryterialnej dla potrzeb podejmowania decyzji w przedsiębiorstwie rolniczym*, [in:] E. Kulikowski (ed.), *Komputerowe systemy i metody wspomagające podejmowanie decyzji*, IBS PAN, Warszawa.
- Manteuffel R., 1964, *Rachunkowość rolnicza*, t. 2, PWRiL, Warszawa.
- Nowak E., 2006, *Strategiczne zarządzanie kosztami*, Oficyna Ekonomiczna, Kraków.
- Sobańska I., 2009, *Rachunek kosztów podejście operacyjne i strategiczne*, C.H. Beck, Warszawa.
- Sojak S., 2003, *Rachunkowość zarządcza*, TNOiK, Toruń.
- Ziętara W., Kondraszuk T., 1987, *Przydatność różnych kryteriów podziału kosztów dla potrzeb planowania w przedsiębiorstwie rolniczym*, Roczniki Nauk Rolniczych, seria G, t. 84, z. 3, Warszawa.

## **RAMY KONCEPCYJNE STRATEGICZNEGO I OPERACYJNEGO RACHUNKU KOSZTÓW W ROLNICTWIE**

**Streszczenie:** W pracy przedstawiono specyficzne cechy działalności rolniczej oraz implikacje, jakie wywierają na strategiczne i operacyjne zarządzanie kosztami. Na tej podstawie wyznaczono główne ramy strategicznego i operacyjnego rachunku kosztów. Szczególną uwagę zwrócono na realizację przez rolników strategii przywództwa kosztowego. Z uwagi na masowy charakter produkcji wymaga ona uruchomienia procesu ciągłej racjonalizacji kosztów. Niezwykle istotne są cele indywidualne i zbiorowe rodzin rolniczych realizowane w gospodarstwach wiejskich. Wyróżnikami podziału kosztów są ich zmienność i stałość z punktu widzenia całego gospodarstwa (przedsiębiorstwa). W podsumowaniu wymieniono najważniejsze paradygmaty oraz specyficzne cechy strategicznego i operacyjnego rachunku kosztów w rolnictwie, które wyznaczają jednocześnie jego ramy koncepcyjne.

**Słowa kluczowe:** rachunek kosztów, rolnictwo, zarządzanie strategiczne i operacyjne.