THE INCOME AND EXPENDITURE BUDGET IN AGRICULTURE. THEORETICAL AND PRACTICAL ASPECTS

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Abstract: *Agricultural production appears because of complex processes of transformation of some substances and forms of energy (solar, chemical, biochemical, fossil) by means of living organisms of plants and animals, under the impact of natural factors, material and financial resources, of work, in specific material goods. The agricultural production system is seen as a set of productive activities related to plant culture and animal husbandry, supported by natural resources (within which the land has a dominant role), material, human and financial resources, with the aim of obtaining agricultural products for different industrializations, at a determined level of economic efficiency. In the framework of the work, the technical-economic analysis of the activities carried out in a conventional agricultural holding, from the plain area in the west of the country, is carried out, based on the technological sheets and the elaboration of the income and expenditure budgets for four crops. Wheat, corn, sunflower, rapeseed crops are taken into analysis.*

Key words*:* income, expenses, technological sheets, agricultural exploitation, crops, budget for crops

INTRODUCTION

The preparation of the general budget of revenues and expenses in an agricultural company (farm) but also of the budgets specific to each culture, helps to plan and manage the technical and financial activities of agricultural companies. budgets are not the only way, or necessarily the best way, to produce a crop – they are knowledge. the production practices and inputs included in a budget reflect what is usually done in that area. There are many combinations (inputs – outputs) that make up the production function of the enterprise [1,2,4].

MATERIALS AND METHODS

In general, the following research methods are used to perform the economic-financial analysis in agriculture: direct and indirect observation of the economic reality; analysis and synthesis [5]. Budgeting in agriculture involves the estimation and allocation of financial resources for various aspects of agricultural operations. In developing the work methodology, we took into account numerous elements. The following aspects must be considered when drawing up income and expenditure budgets for various agricultural crops [3,6,7,8,9,10,14]:

- ✓ the agricultural sector often faces seasonality, with specific activities throughout the year. This seasonality affects both labor requirements and expenses. The budget must consider fluctuating demands for labor, machinery and inputs during different seasons, such as planting, harvesting and livestock management,
- ✓ salaries for agricultural workers can vary depending on factors such as job roles, skills, experience. The wage budget usually includes wages for agricultural workers, technicians, managers, and other personnel involved in agricultural activities and must take into account minimum wage requirements, social security contributions and other employment costs set by the authorities. In addition, seasonal fluctuations in this labor market can affect the overall budgeting process, especially during campaign periods,

✓ agricultural expenses include a wide range of costs associated with agricultural operations. These may include expenses for seeds, fertilizers, pesticides, machinery maintenance, irrigation systems, animal feed, veterinary services, energy, transportation, marketing, and administrative expenses. Farmers and agricultural businesses must carefully manage their expenses to ensure profitability. This involves monitoring and optimizing costs through efficient procurement, resource allocation and adoption of cost-effective practices. The evaluation and regular adjustment of the budget are necessary to maintain the financial sustainability of the agricultural holding; Fluctuations in input costs (especially fuel and fertilizer prices) can affect the size of revenue and expenditure budgets,

✓ the size and complexity of agricultural operations can vary significantly, ranging from small family farms to large commercial enterprises, depending on the scale and diversity of activities involved. Larger farms can have (and usually do) more complex needs, considering more crops, animals and specialized machinery,

✓ the budget of revenues and expenditures in agriculture is influenced by market dynamics, including the prices of goods on the Agricultural and agri-food market, supply-demand conditions, and international and national trade policies,

✓ the application of technological advances and innovative practices can help to optimize costs and increase productivity in agriculture. Investing in modern farm equipment, precision farming technologies and adopting sustainable practices can have long-term benefits for both wages and overheads, including in the construction of income and expenditure budgets in agriculture, various regulations related to work, taxation, environmental protection, and quality standards must be respected.

✓ machines, machinery, and agricultural equipment require regular maintenance and occasional repairs. The budget should include estimated costs for service, spare parts, and unexpected breakdowns; timely maintenance can help prevent major breakdowns and minimize long-term expenses.

✓ agricultural businesses often allocate part of their budget to marketing and distribution activities. These may include expenses related to packaging, branding, advertising, transportation, and establishing sales channels. The budget should consider marketing strategies to promote products and reach target markets efficiently.

✓ agriculture is subject to various risks, including adverse weather conditions, pests and diseases, market volatility and policy changes. Allocating a portion of the budget to risk management practices, such as crop insurance or diversification strategies, can help mitigate potential losses and ensure the farm's financial stability.

✓ maintaining accurate records of income, expenses and productivity is crucial for effective budgeting. Regular financial analysis and monitoring of key performance indicators can help identify areas for improvement, optimize costs and make informed budget decisions.

RESEARCH RESULTS

1. The structure of the income and expenditure budget

The income and expenditure budget drawn up for each culture includes the following elements[10,11,12,15,16]:

• the production value - it is calculated by multiplying the average production per hectare with the estimated capitalization price on the domestic market;

• subsidies - represent financial support from the state and the EU. for the respective harvest year granted to agricultural producers in the vegetable sector;

• gross product - results by adding subsidies to the value of production;

• total expenses - the value of inputs and services that are used for the production of vegetable agricultural products; total expenses include two groups of expenses, namely variable expenses and fixed expenses;

• taxable income - results by deducting total expenses from the value of production;

• net income - it is obtained by subtracting the related tax from taxable income;

• net income + subsidies is obtained by adding the subsidies granted to the net income;

• the rate of taxable income and that of net income + subsidies (%) is calculated by reporting taxable income and net income + subsidies, respectively, to total expenses;

• production cost – results from dividing total expenses by the average production of the crop;

• predictable domestic market price – refers to the estimated price at which the production obtained in the respective harvest year is to be capitalized.

2. The structure of the technological sheets

The revenue and expenditure budgets for crops are based on the technological budgets related to each crop. The general structure of a technological estimate usually takes the following form[13]:

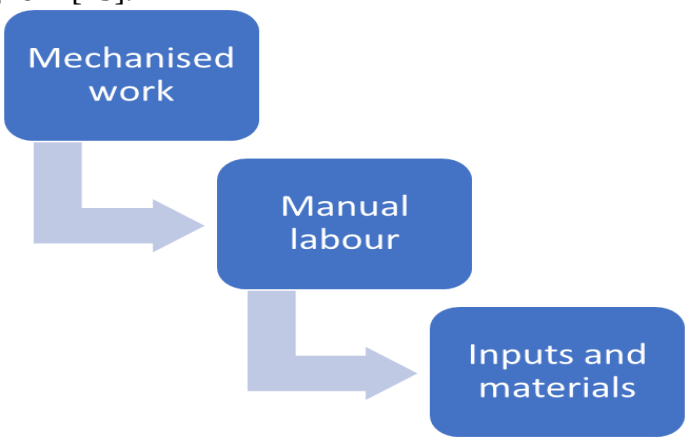

Figure 1. General structure of a technology - component elements
Source: ***[2.12.13]***

Based on the technological budgets related to the maize culture in the conventional system, the revenue and expenditure budget for this culture was determined. The crop year is the one found in the 2021-2022 technological budgets, in lowland conditions with medium potential; in this context, the average yield per hectare was set at 5,000 kg/ha for the non-irrigated system. For wheat, it is considered that the average yield per hectare is around 4,000 kg/ha for the non-irrigated system.

Table 1

Maize/wheat crop frame technology - non-irrigated system

Conventional maize culture framework technology - non-irrigated system	Conventional wheat framework technology - non-irrigated system
1. Stubble-turning	1. Returning stubble
2. Land preparation for seeding	2. Preparing the land for sowing
3. Loaded, unloaded and transported fertilizers	3. Fertilizers loaded, unloaded and transported
4. Fertilized with chemical fertilizers	4. Fertilized with chemical fertilizers
5. Fertilizer equipment serviced	5. Fertilizer equipment maintained
6. Plowing	6. Plowing
7. Total unfinished production	7. Total unfinished production
8. Harrowing	8. Germinal bed prepared
9. Germinal bed prepared	9. Sown
10. Sowing	10. Planters serviced
11. Serviced seeders	11. Total unfinished production

12. Loaded, unloaded and transported fertilizers 13. Fertilized with solid fertilizers 14. Fertilizer equipment serviced 15. Water transport and prepared solution 16. Sprayers 17. Sowed by hand 18. Mechanical threshing -I 19. Mechanical threshing -II 20. Harvest 21. Transportation 22. Harvesting and storage equipment serviced 23. Total plant residues 24. Total (general)	12. Loaded, unloaded and transport of fertilizers 13. Fertilized with solid fertilizers 14. Water transport and solution preparation 15. Fertilized with foliar fertilizers 16. Service of fertilizing equipment 17. Transport with water and prepared solution 18. Herbicide 19. Treatment with insecticides 20. Treatment with fungicides 21. Service of culture treatment equipment 22. Harvesting 23. Servicing of harvesting and storage equipment 24. Transport (to .... km) 25. Chopped vegetable scraps 26. Total (overall)

Source: ***[3,17]***

Based on the data contained in the technological sheets for this two cultures, resulted the following structure of the revenue and expenditure budget for corn and wheat:

Table 2.

The maize/wheat culture budget

A**. Production value**
A1- from which main production
B(+) Subsidies
C(+) Gross Product
D(-) Total expenses
D1- of which for the main production
I-Variable expenses
1. Expenses with raw materials and materials
- Seed and planting material
- fertilizers
- pesticides
- other materials
2. Expenditures with mechanized works
3. Irrigation expenses (if applicable)
4. Supply expenses
5. Insurance
II- Fixed expenses
1. Permanent labor costs
2. General and management expenses
3. Interest on loans
4. Depreciation (buildings and utilities)
E(=) Taxable Income
(-) Taxes and fees
F (=) Net income
F1 (=) Net income + subsidies
G. Taxable income rate
H. Net income rate
H1. Net income rate + subsidies
Production Cost
Predictable domestic market price

Source: ***[15, 17]***

3. Summary economic indicators

In this way, we can calculate a series of economic summary indicators.A number of summary economic indicators are taken as such in the income and expenditure budget. They refer to the average main production (t/ha); the value of the main production (lei/ha); expenses for the main production (lei/ha); variable expenses (lei/ha); expenses with raw

materials and material (lei/ha); permanent labor costs (lei/ha); fixed expenses (lei/ha); the recovery price (lei/tons).

Table 3

The method of calculating the economic indicators of synthesis

Unit cost (lei/t)	=(main production expenses (lei/ha))/ (average main production (t/ha))
Work time consumption (man-	= mechanic hours/ha + (Z.0 × 8)
Remuneration of permanent workforce	=(permanent labor costs (lei/ha))/(manual labor consumption (Z0/ha))
Labor productivity in physical	=(Labor time consumption (man-hours/ha))/(average main production
Labor productivity in value expression	=(Labor time consumption (man-hours/ha))/(average main production
Expenses per 1000 lei prod. main	= (expenses for main production (lei/ha)×1000)/(value of main products
Profit or loss per product unit (lei/ha)	= product value main - expenses for prod. main (lei/ha)
Profit or loss per product unit (lei/ha)	=(profit or loss per surface unit (lei/ha))/(average main product (t/ha)
Rate of return (%)	= (profit or loss per production unit (lei/ha))/(main production expenses
Breakeven point in physical ounces (t)	=(main production expenses (lei/ha))/(utilization price (lei/t))
Exploitation risk rate (%)	=(return threshold in value units (lei))/(value of main products
Security index	= (value of main products (lei/ha)-value rent threshold (lei))/(value of

Source: ***[7,11]***

Table 4

Synthesis economic indicators for maize and wheat

	Synthesis economic indicators	**UM**
1.	Average production per ha	tons/ha
2.	The value of the main production per ha	value units /ha
3.	Expenses for the main production	value units /ha
4.	Variable expenses	value units
5.	Raw materials and materials	value units
6.	Permanent labor costs	value units
7.	Fixed expenses	value units
8.	Unit production cost	value units /kg
9.	The capitalization price	value units /tons
10.	Work time consumption	man-hours/ha
11.	Work time consumption	man-days/ha
12.	Remuneration per ha for the permanent	value units /man-days
13.	Labor productivity in physical expression	man-hours/tons
14.	Labor productivity in value expression	value units /man-hours
15.	Labor costs per 1000 lei of production value	value units
16.	Materials expenses per 1000 of production value	value units
17.	Expenses per 1000 lei main production	value units
18.	Profit or loss per unit of production	value units / ha
19.	Profit or loss per product unit	value units /tons
20.	Rate of return	%
21.	Margin on Variable Costs (MVC)	value units
22.	Margin on Variable Costs %	%
23.	The profitability threshold in value units	tons
24.	The profitability threshold in physical units	%
25.	Operating risk rate	%
26.	Security index	
27.	Absolute position vis-a-vis profitability	value units
28.	Relative position to profitability threshold	

Source: ***[7,11]***

Based on the calculation of the indicators presented above, agricultural holdings can establish directions for the efficiency of the activity.

CONCLUSIONS

In conclusion we can state the following: the development of income and expenditure budgets in agricultural holdings lead to: diagnosis and regulation of the enterprise's activity; the discovery and mobilization of internal reserves; strengthening economic-financial autonomy and increasing economic efficiency. It is recommended to use the financial resources effectively, to the maximum, on the basis of which it is possible to increase the profitability of the agricultural exploitation.

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