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Research Article

MANAGEMENT AND INVESTMENT IN THE BUSINESS OF PROCESSING AGRICULTURAL RAW MATERIALS: TECHNOLOGY, FINANCING AND CAPITAL INVESTMENTS

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Abstract:

The development of investment management measures is one of the main problems of the agrarian economy. In agriculture, there is a growing interest in the formation of universal approaches to the management procedure, which allows us to purposefully increase the efficiency of the economic entity and the economic benefits. Reliable information support and management decision making is achieved through effective management.

Research and substantiation of managerial aspects is of great theoretical and practical importance. There is a struggle for a place in the agricultural business at the present stage of development of economic relations.

Key words: *management, investment, business, financial flows, processing.*

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INTRODUCTION:

In today's market realities of the country, the search for suitable and effective functional measures for managing business entities is needed [13,15,25].

In the agricultural business, managing financial flows has tremendous value in achieving financial stabilization and sustainable development. The problem of managing financial flows is relevant for all enterprises regardless of the business environment [4,22,26].

Different sources of funding are recommended for heterogeneous business processes of an agricultural enterprise. The main ones are short-term and long-term loans, earmarked funding (from the budget) and the company's net profit [1,3,24].

In fact, financial flows of an agricultural enterprise are temporarily free cash balances, which are types of non-productive assets that lose their value over time due to inflation and other reasons [5-8,23].

To ensure that the cash depreciation does not occur, the company must take measures to ensure their effective use through financial investments [14,17,19,20].

METHODOLOGY:

The main ways of investing funds of an agricultural enterprise:

1. *Bank deposit.* There are three types of deposits: term, savings and demand.

The following advantages are characteristic of all three types of deposits:

- reliability and minimum risk (guarantee of return of the deposit with interest);
- ease of opening an account;
- pre-known income;
- preferential taxation (tax is levied only on the profit that exceeds the current refinancing rate by 5 percentage points);
- security (deposits insured against various economic changes in the country and the world).

Disadvantages:

- low interest on the deposit;
- depreciation of money as a result of inflationary processes in the economy.

Bank deposits are the most reliable (least risky) investment method, but at the same time the least profitable.

2. *Financial investments.* Financial investments include two main areas:

- 1) Investing in securities (stocks, bonds). These are long-term financial investments in order to receive dividends on shares, coupon income on bonds.

In the agricultural business, any agricultural enterprise can become a participant (investor) in the authorized capital of another organization, or in the form of direct investment (purchase of shares, equity participation) [9-12].

The share gives its owner a fixed right to receive dividends, a part of the company's property in the event of its liquidation, as well as the possibility of freely selling their shares and participating in the shareholders' meeting. The stock is a perpetual security. Its circulation in the stock market is terminated with the termination of the company (for example, in bankruptcy)

A bond entitles you to receive payments of nominal value at the end of a specified period and regular payment of a certain percentage of the nominal value, as a fixed income. Payments on bonds take place as a matter of priority, as compared with dividends, but the holder of bonds, unlike stocks, has no right to participate in the management of the company [16,21].

Bonds are a more reliable way of investing than stocks, but less profitable.

Usually, agricultural enterprises are passive in the stock market and have a small share of financial investments. This is due to the frequent lack of free working capital to invest in the activities of other enterprises, as well as the need to attract a financial consultant or broker, which will lead to additional costs for the enterprise. In addition, trading in the stock market is associated with a high risk of losing the invested funds, but these risks are justified by a large percentage of return on invested funds with a short payback period [18].

The advantages of this method of investing are that it is a convenient way to insure your savings against currency and inflation risks.

The disadvantages are the difficulties in their purchase and sale, the features of this market, which have their own subtleties. There is a great opportunity to lose part of the investment without experience or economic education.

- 2) Investments in the creation of an agricultural credit consumer cooperative.

The main objective of agricultural consumer credit cooperatives is not to make a profit, but to meet the needs of cooperative members for financial services [2].

Having studied the possible directions of investment for agricultural producers, it is impossible to say which one is worse or better. Each direction has its advantages and disadvantages.

For the purpose of investing temporarily free funds, we propose that an agricultural enterprise engage in a new type of activity - milk processing, since The company is specialized in the production of milk and beef. Milk production is a priority for agricultural activities. At the moment, the entire volume of milk received by the enterprise is sold to the milk processing enterprise.

It is necessary to follow all the rules that apply to such industries, when choosing a site for launching a new milk processing plant. The best option in our case would be to install a mini modular milk

processing plant "KOLAKS". It should be noted that such a plant is equipped with all necessary equipment for the production of dairy products, with a full production cycle and taking into account sanitary requirements.

It is planned to sell products to private stores and chain stores. Also trading in the markets is planned.

The enterprise will deliver the products independently. For this, GAZ Next (isothermal van) is purchased; its cost is 1,634,000 rubles.

The production technology of dairy products is quite simple, and includes the main stages presented in Figure 1.

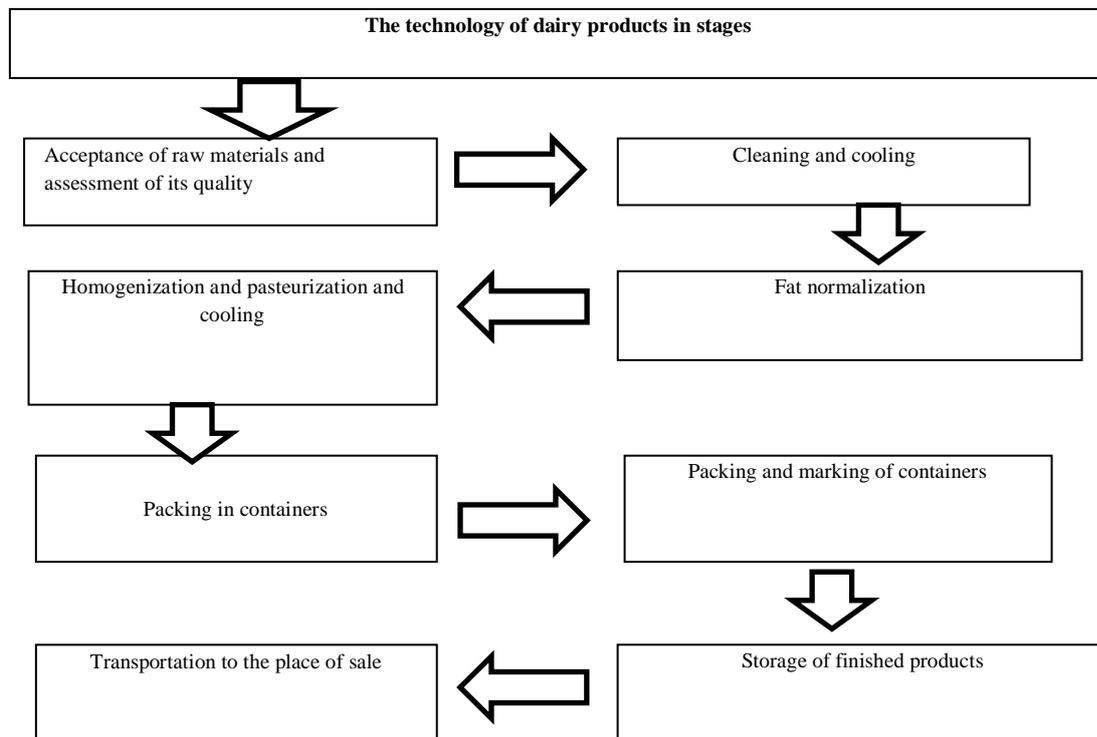
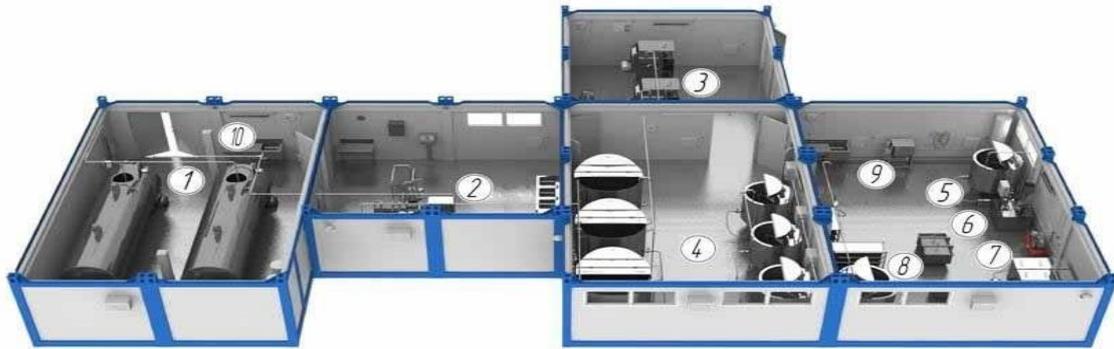


Figure 1 - Stages of dairy production technology.

The plant includes a complete set of equipment for processing and storing milk [27].

Equipment modular plant consists of several blocks:

- storage tanks for raw materials, as well as various components (starter cultures, bacterial cultures, dry milk mixture, etc.);
- Apparatus for receiving raw materials;
- module for dissolving dry milk mixture;
- equipment for cleaning and homogenization;
- centrifugal and degreasing separator;
- cooler;
- apparatus for pasteurization;
- filling machine.



1. Milk receiving unit
2. Unit of normalization, pasteurization and cooling of milk
3. Unit of packing of milk and fermented milk products
4. Production center of fermented milk products
5. Sour cream production unit
6. Unit of packing of sour cream
7. Curd production unit
8. Unit of production of Adygei soft cheese
9. Butter production unit
10. Laboratory

Figure 1 - External and internal view of the mini-milk processing plant

8 people who will work on a permanent basis (table 2) is necessary for the operation of a mini plant.

Table 2 - The staff of workers in the production of dairy products and their salary.

No	Name	Number of people	Salary per month, rub.	Annual payroll, rub
1	Technologist	1	20000	240000
2	Laboratory assistant	1	17000	204000
3	Workshop workers	4	18000	864000
4	Driver	1	20000	240000
5	Total	7	X	1548000

Technical characteristics of the modular plant are presented in table 3.

Table 3 - Technical characteristics of the modular plant "KOLAKS 1003" for the production of dairy products packed in plastic bags for 8 hours.

No	Parameter	Characteristic
1	The maximum amount of reception and processing of raw materials	1000kg (1000l)
2	Performance	pasteurized milk (2.5% fat) - 430 kg; kefir (2.5% fat) - 200 kg; cottage cheese (9% fat) - 30 sour cream (20% fat) - 70 kg; soft cheese - 10 kg; serum - 260 kg;
3	Dimensions	height - 2790 mm; length - 7500 mm; width - 9000 mm;
4	Weight	10,500 kg
5	Power	85 kW;
6	Water flow	6 m ³
7	Sewerage: - drainage rate	3.5 m ³ / hour
8	Climatic conditions: - ambient temperature - snow load	from -45 to + 50 ° C 400 kg / m ²
9	Cost including installation	6,700,000 rubles.

Installation and implementation of commissioning works will be carried out by the manufacturer KOLAKS for free.

RESULTS:

We calculate the planned cost of 1 liter of milk (cost of production of raw materials) - 4 rubles per 1 kg.

Other expenses (shop expenses, sales costs, etc.) are planned at the level of 15% of the total cost of production in order to take into account possible risks.

The cost of marketing activities. To introduce an agricultural enterprise to the milk market, advertising costs are required to inform potential consumers and popularize a new product. We plan the corresponding costs at 7% of the total cost of production.

Expenses related to wages and deductions from wages is 6.22 rubles.

Expenses on depreciation of technological equipment are on average 2.11-3.0 rubles.

Thus, the planned cost of 1 liter of milk, taking into account the data of the agricultural enterprise and the calculated indicators, is presented in table 4.

Table 4 - Planned cost of 1 l milk, 2.5% fat.

No	Cost items	Amount, rub.
1	Raw materials	4,0
2	Wages and social contributions	6,22
3	Depreciation	2,11
4	other expenses	3,7
5	Expenses for marketing activities	1,12
6	Total full cost of 1 liter of milk	17,15

Based on the norms of milk consumption, 5.5 liters of milk, 3.7% fat, will need to produce sour cream, 20% fat. Then, the planned cost of 1 kg of sour cream will be 38.98 rubles. (Table 5)

Table 5 - Planned cost of 1 kg of sour cream, 20% fat.

No	Expenditures	Amount, rub.
1	Raw materials	22
2	Wages and social contributions	6,22
3	Depreciation	2,11
4	other expenses	6,07
5	Expenses for marketing activities	2,55
6	The total cost of 1kg of sour cream	38,98

The project provides for a phased increase in sales of dairy products, due to an increase in demand for products by 10% in 20120 and 2021, table 6. In addition, we plan to switch from 12 hours to 24 hours of dairy production in 2021. To begin with, it is planned to produce only two types of product: sour cream with a mass fraction of fat 20% and milk, 2.5% fat. The share of sour cream is 3% of the total share of dairy products.

Table 6 - The volume of dairy products of an agricultural enterprise in the 2019-2020 project .

No	Product	2020	2021
1	Milk, 2.5% fat, kg	698400	1047600
2	Sour cream, 20% fat, kg	21600	32400
3	Total	720000	1080000

It is planned to sell the products at the following prices:

- milk - 32 rubles per 1 l;
- sour cream - 115 rubles. for 1 kg.

Taking into account the selling price (selling price), the formed sales volume, we will present the calculation of the net profit from the proposed event for an enterprise (Table 7).

Table 7 - Calculation of net profit of dairy products.

No	Indicator	2020	2001 .	Deviation 2021 to 2020 (+/-)
1	Revenue thousand rubles.	22348,8	33523,2	11174,4
2	Cost, thousand rubles	12819,5	19229,2	6409,7
3	Profit before sales thousand rubles.	9529,3	14294	4764,7
4	Profit tax (0%),%	-	-	
5	Net profit, thousand rubles	9529,3	14294	4764,7
6	Return on sales, %	42,62	42,64	+0,02

An analysis of the indicators in Table 7 revealed that dairy production is efficient. Revenue, profit from sales grows, and net profit and profitability of sales increases.

DISCUSSION:

The source of project financing is the company's own capital, at the expense of the company's profits.

We evaluate the effectiveness of the project with the attraction of investments using indicators of net discounted income, profitability index and payback period.

The discount factor is an indicator that is determined on the basis of the value of the discount rate, formula (1):

$$\alpha = 1 / (1 + E)^t (1),$$

where E – discount rate, which is the minimum expected rate of return on capital by the investor;

t – calculation step number.

The discount rate is 17.25%. It consists of the following elements: the refinancing rate is 9.25% (according to the results of 2018) and the risk premium is 8%. The assessment is based on generally accepted standards, taking into account the criterion of “growth in sales of existing products” based on the risk premium method used when placing centralized investment resources of the Russian Federation development budget on a competitive basis.

The total capital costs for the purchase of new equipment are calculated in Table 8.

Table 8 – Capital investments of an agricultural enterprise.

No	Name	Quantity, pcs.	Price, thousand rubles	Service life, years
1	Modular mini-plant "KOLAKS" 10003	1	6700	15
2	GAZ-C41R33 (isometric van)	1	1634	8
3	Total	2	8334	x

The performance indicators of the investment project are presented in table 9.

Table 9 - Indicators of the effectiveness of the investment project.

No	Indicator	2019	2020	2021
1	Net profit on sales of own-produced dairy products, thousand rubles	-	9529,3	14294
2	Depreciation of a modular plant, thousand rubles	-	448,9	448,9
3	Depreciation of the van, thousand rubles.		204,25	204,25
4	Investments (own funds), thousand rubles	8334	-	-
5	Money income, thousand rubles	-8334	8876,15	13640,9
6	Discount coefficient	1	0,73	0,62
7	Discounted cash flow, thousand rubles	-8334	6479,59	8457,33
8	Accumulated discounted cash flow, thousand rubles	-8334	-1854,41	6602,92
9	Net discounted cash income of the project, thousand rubles			6602,92
10	Yield index			0,79
11	Payback period, years			1,3 years

CONCLUSION:

Thus, the calculation showed that the project profitability index is close to unity, therefore, the project is efficient. The net discounted cash flow of the project will amount to 6,602.92 thousand rubles with a discount rate of 17.25%. The project will pay off within 1.3 years.

In accordance with this goal, a methodology was developed for developing recommendations and improving management in terms of investment. The research results can be used in the activities of both agricultural enterprises and any other business entities.

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