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## **Influence of the state support on the efficiency of dairy farms in Byelorussia**

**Abstract.** The president of Byelorussia undertook in 2008 certain measures of state support for the agricultural enterprises, in particular for organizing dairy farms. These measures concerned conditions of crediting the enterprises and they influenced the final efficiency of investment projects. A case study with calculation of an economic efficiency of organizing a dairy farm in Grodno region is analysed.

**Key words:** efficiency, reconstruction, business-plan

### **Introduction**

A huge attention is given to the state support for agricultural producers in all countries of the European Union. It is connected with the specificity of this branch. It is proved by scientists that agriculture can be effective only in the case of a state regulation of this sphere. Byelorussia is not an exception. Considerable successes have been achieved in the last years in the development of agricultural production and processing of agricultural products. These achievements have occurred as a result of state financing of modernization and technological progress in agriculture.

There were considerable changes in financing of business plans for investment projects in agricultural enterprises in 2008. It is connected with a number of decrees passed by the president of Byelorussia which changed the order and the size of repayment of credits and the rate of interest on them. So, with an aim of increasing the performance of farms, the decree no. 139 of the president of Byelorussia from February 28th 2008 'About financing in 2008 of the republican program of investments in agricultural production modern techniques for 2005-2010' outlined a governmental program of rural revival and development of production targets for 2005-2010. According to this document agricultural credits are given without interest with repayment in monthly equal instalments over 7.5 years, since January 1st 2009. Other document is the decree no. 313 of the president of Byelorussia from July 9th 2007 'About some questions of building, reconstruction, technical re-equipment and repair of industrial objects in agriculture'. According to this decree the interest on credits is paid at a rate equal to half rate of refinancing in the the

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National Bank (NB), increased by no more than 3 percentage points (organizations have received such credits denominated in the Belarussian rubles). Besides, it is necessary to mention two more legal documents: the decree no. 332 of the president of Byelorussia from June 13th 2008 'About building dairy-commodity farms' and the decree no. 343 of the president of Byelorussia from June 17th 2008 'About granting of credit resources for building, reconstruction, technical re-equipment and repair of industrial objects in agriculture'.

All this has entailed changes of calculation of the sums of reepayment of credits and sums of interest payed on them. It has also entailed greater efficiency of measures of the state support and efficiency of business plans.

## **Research results**

The state support for agricultural producers is widely accepted in the European Union member states. Basically it consists of imposing of quotas on various types of production and of awarding of grants. Various measures of the state support for agricultural producers are also applied in our country. Extra additions to procurement prices are established, which compensate a rise in prices of industrial inputs. An analysis of data has shown that subsidies to modernization of existing equipment are not applied as a measure of stimulation of production in the European countries. Union's help has been concentrated on introduction of the new countries into the structure of the European Union, on the purpose of production reduction and adaptation to the modern quality standards. The problem of modernization of production is solved at the expense of own means of the enterprises and the state budget in Byelorussia. Investments in the local agriculture are not attractive to foreign investors though there are successful enough examples of joint participation of the parties in investment projects.

Necessity of the state support for infrastructure of dairy farms is caused first of all by existing wear of production assets which are worn out even more than by 100 %. The enterprises have not means for new acquisitions. But agriculture production is strategically important as thanks to it food safety of the country is provided. Besides, production modernization leads to a growth of its efficiency. It means that milk production in modernized farms will be profitable.

The authors have got the following results in calculation of efficiency of establishing a dairy farm called 'Protasovchina'. An initial variant of the business plan assumed a reception of a soft loan of 3000 million rouble (1.25 million US dollar) provided by 'Belarusbank' at a rate of interest of 13% annually. 5% out of it was to be financed by the state. The rest was to be paid from the account of industrial activity of the enterprise. The situation has changed as a result of acceptance of the statutory acts specified in the previous section. First, a decision was accepted to increase the capacity and to construct a farm of 1000 cows. It will allow to increase the production of milk to 6000 ton. Secondly, conditions of the credit have changed.

What influence these actions have had on the efficiency of establishing a dairy farm?

The total sum of credits makes 15 202 700 thousand rouble (6335 thousand US dollar). Another 11 083 485 thousand rouble (4619 thousand dollar) of credits will be added. The state undertakes to extinguish the sum of 9 771 773 thousand rouble (4072 thousand

dollars). The enterprise undertakes to repay the rest out of the revenue from its economic activities. The previous variant supposed a state participation of 480994 thousand rouble (201 thousand dollar). Apparently, the state expenses have increased. The enterprise will not have to cope with expenses of interest payment alone. Therefore the state support is quite proved and aimed at long term prospect. Working conditions will improve as a result of project realization, the pithiness and appeal of work will increase. That is important for attraction of qualified personnel in this sphere. The production efficiency should increase, first of all thanks to a labour productivity growth.

Table 1. Conditions of granting the credit

Conditions of crediting the project	Credit value, legal basis	Parameter value
1. Term of granting of the credit (years, months)	3284700 thousand rouble under the Decree of the President of Byelorussia of July 9th 2007, no. 313	5 years (60 months)
	3318000 thousand rouble under the Decree of the President of Byelorussia of June 17th, 2008, no. 343	8 years (96 months)
	8600000 thousand rouble under the Decree of the President of Byelorussia of June 13th 2008, no. 332	12 years (144 months)
2. The annual interest rate, %	under the Decree of the President of Byelorussia of July 9th 2007, no. 313	0.5 NB rate of refinancing + 3%
	under the Decree of the President of Byelorussia of June 17th 2008, no. 343	3 %
	under the Decree of the President of Byelorussia of June 13th 2008, no. 332	0 %
3. The interest rate compensated from the budget as a part of interest on the credit	under the Decree of the President of Byelorussia of July 9th 2007, no. 313	0.5 of NB refinancing rate
	under the Decree of the President of Byelorussia of June 17th 2008, no. 343	NB refinancing rate
	under the Decree of the President of Byelorussia of June 13th 2008, no. 332	NB refinancing rate + 3 %
4. Starting date for repayment of the principal	under the Decree of the President of Byelorussia of July 9th 2007, no. 313	July 2009
	under the Decree of the President of Byelorussia of June 17th 2008, no. 343	May 2010
	under the Decree of the President of Byelorussia of June 13th 2008, no. 332	May 2010
5. Periodicity of repayment:		
	- principal - interest	monthly monthly
6. Closing date for repayment	under the Decree of the President of Byelorussia of July 9th 2007, no. 313	December 2012
	under the Decree of the President of Byelorussia of June 17th 2008, no. 343	October 2016
	under the Decree of the President of Byelorussia of June 13th 2008, no. 332	October 2020

Source: own calculations.

It is clear that investment expenses have considerably grown, but the share of own means in financing the project realization has decreased by 24.7% when comparing the summary indicators in the two variants of calculations. The building cost has increased by 10 157 855 thousand rouble (4233 thousand dollar), the total sum of investments has

increased by 3011646 thousand rouble (1255 thousand dollar). The values of efficiency indicators for the initial and the changed variants are presented in Table 2. It is necessary to say that this comparison is not absolutely correct, because the changes have concerned not only the order of repaying the credit (but also the volume of produced milk and expenses).

Table 2. Summary indicators of the project

Indicator	Initial variant	Taking into account additional measures of state support
Cost of the investment project, million rouble	17057	27 215
Total cost of investments, million rouble	14006	21 701
Sources of financing the project, million rouble		
- own means, million rouble	9000	12 012
- extra and borrowed means, million rouble	3000	15 203
- state participation, million rouble	482	9 772
Share of own capital in financing investments, %	68,8	44,1
Starting year	2009	2009
Volume of produced milk, ton	4800	6000
Revenue from production realization, million rouble	20982	67739
Revenue from realization of production without VAT, million rouble	19933	61348
Revenue from realization of production without VAT per employee, thousand rouble	738	2258
Indicators of efficiency of the project		
Dynamic time of recovery of investment outlays, years	6,01	12,70
Dynamic time of recovery of state support outlays, years	1,00	8,57
Net discounted income, million rouble	1 245,1	1 015,1
Internal rate of return, %	13,28	14,23
Revenue/cost ratio	1,20	1,05
Level of break-even, %	15,80	31,26
Factor of repayment of debts	3,4	2,42
Factor of current liquidity	0,70	5,13
Security factor for own circulating assets	-0,21	-0,75
Profitability of sales, %	60,01	46,07
Profitability of production, %	111,31	99,21

Source: own calculations.

The enterprise will receive about 2.0 billion rouble of profit according to the feasibility study calculations already in 2009. It will make 34501 million rouble as an accruing result in 2021. Calculations have shown that the change of conditions causes a decrease in many indicators of project efficiency: the time of recovery of outlays increases, the net discounted income decreases. But the production volume and the labour productivity will increase.

The present investment project should be considered as effective. Because of the economy of scale in production a profitability increase is reached. The internal rate of return is equal to 14.23%.

The net discounted income characterizes an integrated effect from realization of the project. According to the project calculations the net discounted income will become 1 015 million rouble. The initial variant provided 1 245 million rouble of net discounted income

The profitability index includes the discounted general investment expenses and the repayment of credits connected with realization of capital investments under the project.

The profitability index is equal to 1.05 for the project life period. It was equal to 1.2 in the first variant.

The simple time of recovery of outlays on the project has been estimated in the feasibility calculations at 7.55 years. The dynamic time of recovery of outlays (when discounting both the expenses and the proceeds) extends to 12.7 years. The volume of receipts will exceed the sum of investment outlays by 41.5% over the life span of the project. Certainly, these indicators look worse than in the initial variant. Why? Is it necessary to increase the capacity and by that to increase the investment expenses? Financing of the project was provided at the expense of own means. This does not cause a necessity of paying the interest for using credits. A considerable sum of money resources should be involved. This investment will pay off only in a long term. It has appeared in the analysis of calculations of the first variant that the enterprise should spend big sums for payment of interest and repayment of principal in the first years of project's operation. And it is rather problematic because the production is not quite mastered as yet. A shortage of money resources is felt especially sharply during this period. If the problem is considered from the perspective of receipts, it has appeared that the size of monetary receipts in the first variant was considerably bigger than in the first case.

The general size of receipts in the budget during the project life span will equal 11.523 billion rouble and the discounted receipts in the budget 7.162 billion rouble. Discounted expenses of the budget will be equal to 6.031 billion rouble for the same period. Thus, the state support of the project will appear effective. A growth of capital expenses by 1% can cause a decrease of net discounted income by almost 10%. A decrease of volume of production and a growth of production costs influence this value in a similar way.

## Conclusions

Thus, our calculations allow drawing the following conclusions:

- the system of crediting the agricultural organizations in Byelorussia allows to realize investment projects as effective enough;
- the project is paid back and effective despite a decrease of some efficiency indicators for organizing a dairy farm as a result of a change in conditions of crediting and production conditions,
- the state should support the investment projects in dairy cattle breeding because of high expenses and a long time of recovery of investment outlays in this sphere.