

## Cluster approach as the basis of the region's linen complex development

*The article describes the direction of future development of flax complex in the Vologda region on the basis of inter-sectoral and interterritorial cooperation and the formation of regional industrial cluster. Implementation phases of a special pilot project and the expected economic results of its implementation are presented.*

*The Vologda region, linen complex, rationalization of production location, investment-innovative events, economic and social efficiency.*



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Cultivating and processing of long-fibred flax have an ancient background in the Vologda region. Unfortunately, in spite of the great economic and social importance of flax-cultivation the state of things is difficult in recent years. Many traditions and experience were lost. Meanwhile the key sections of the linen complex have remained.

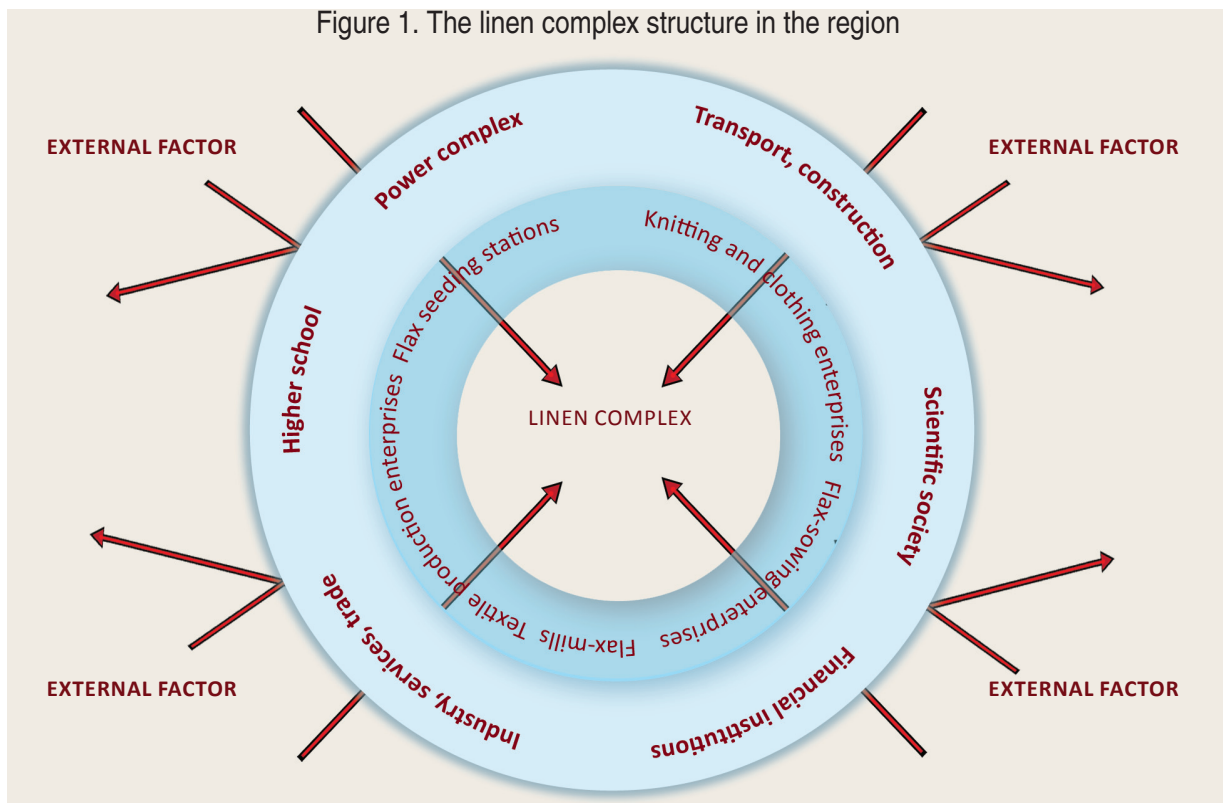
The complex includes agriculture and processing enterprises and various service organizations (*fig. 1*). It is characterized by considerable number of entities that often have different forms of ownership and different interests as well. It is naturally enough that each of them is interested in maximizing of profit.

But the work of the linen complex enterprises is not well coordinated yet, the links of production string is out of connection. It leads to rise in the cost of final linen output and has a negative effect on its competitive capacity and,

of course, on the branch revenue performance in general.

In this connection the main task of the complex's reform is to combine the owners' interests in order to obtain high quality production, thereby creating the conditions for its promotion in the European and world markets.

It is the task that is being solved by the pilot project "Development of the Vologda linen complex by means of intersectoral and inter-territorial cooperation" worked out by the Vologda region government along with LLC "Joint Management Company "Dominion". The project is taken one of the leading positions realizing the first stage of Strategy of light industry development in the RF till 2020. Meanwhile the prospects of project activity are noticed by such federal bodies of government as the Department of Agriculture and the Department of Industry and Trade of the RF.



The principal targets of the project are:

- to create the conditions for economic growth of the Vologda region linen complex on the basis of development of its own raw materials base and production of competitive final output;
- to ensure the social and economic stability of the territories specializing in cultivating and processing of flax.

The project provides for financing of the following directions: investments of the enterprises and investors, the regional budget and the federal financial institutions we want to obtain as a support.

At present the project has been worked out. It is being corrected in view of existing economic situation. The government of the region and LLC "Joint Management Company "Dominion" take some certain steps to realize the project.

Here it's important to optimize the number of enterprises cultivating flax. Because of geographic, technological and other conditions

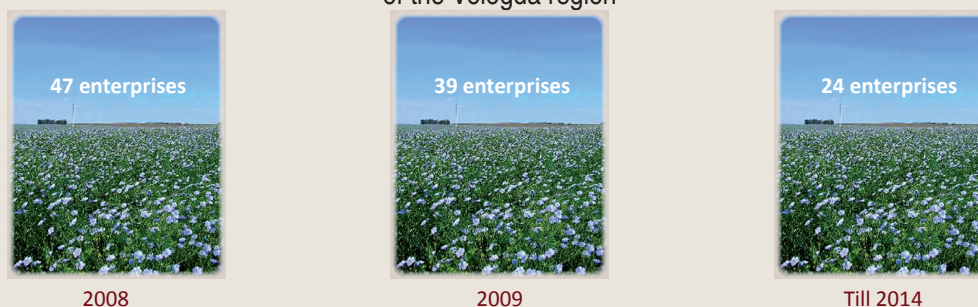
it's necessary to reduce the number of flax-sowing enterprises to 24 in 2014 (*fig. 2*) and flax-processing mills – to 10.

According to this 4 production and raw-materials areas were formed in the districts (Sheksna area, Verkhovazh'e area, Ustyuzhna area and Veliky Ustyug area), the areas are concentrated near 4 base flax mills which must ensure professional agricultural engineering when cultivating and gathering in flax, adjusted system of seed growing and replacing, necessary production capacities of primary processing and qualified personnel (*fig. 3*).

Because of deeper specialization of enterprises cultivating flax the sown areas under flax made up more than 10 thousand ha in 2009. 146 machinery and equipment units for flax cultivation were bought and the regional budget backed this purchase by giving 167.3 mln. roub.

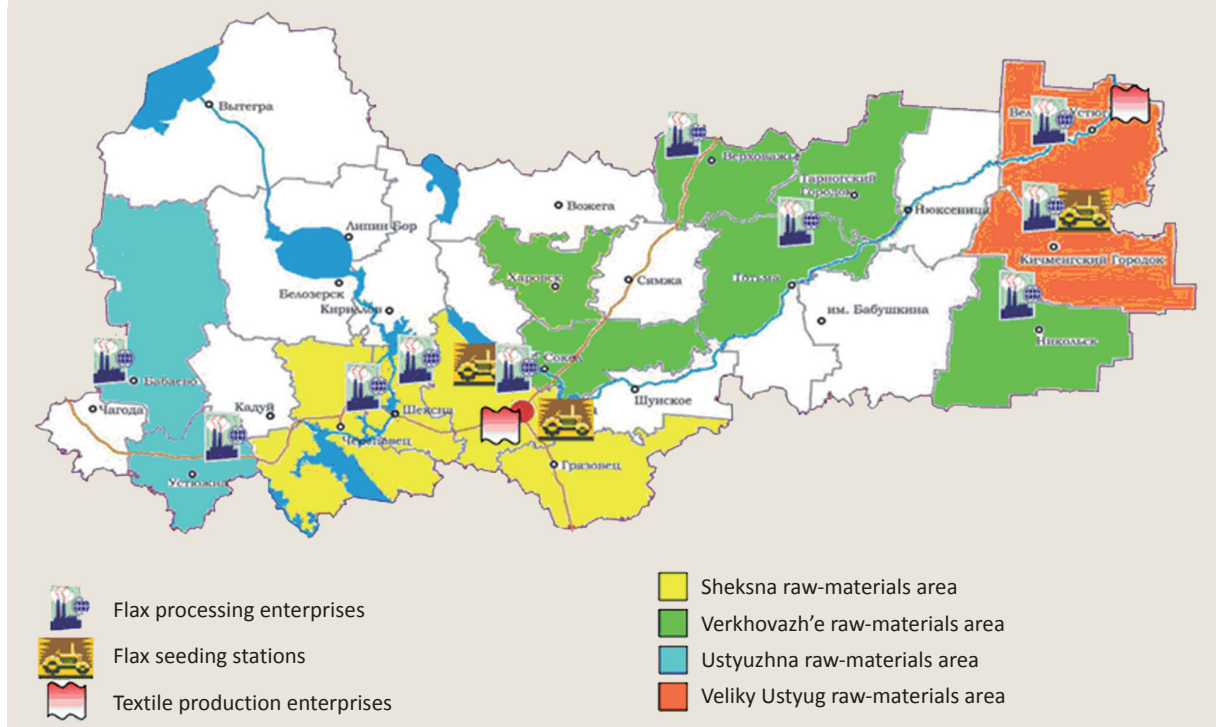
Since December, 2009 a new flax mill equipped with import efficient equipment has been working in the Sheksna district. Nodal breaking-in of the Belgium line for primary

Figure 2. Quantitative optimization of flax-sowing enterprises in raw-materials areas of the Vologda region



The represented project includes 24 flax-sowing sectors instead of 47 sectors that grew flax in 2008. In 2004 – 2014 the cultivation area under flax will make up 10 ha annually owing to deeper specialization of enterprises cultivating flax.

Figure 3. The scheme of zoning and disposition of the linen complex enterprises in the territory of the Vologda region



flax processing “Vanhauvert” is going on in the Verkhovazh’e district. Update machinery for flax-sowing enterprises was bought to the sum of **300 million roubles**.

In two entities (in the Verkhovazh’e and Sheksna districts) flax growing experiments were run under the direction of Holland company “Van der Bilt”. The flax yield indices obtained there are much higher than the average indices over the Vologda region.

The purchase of new efficient technical equipment will make it possible to decrease the period of flax gathering and in this way to increase its quality and when processing to obtain long fibre much more, the latter is the most valuable for the textile industry and in the end to make flax a real profitable agriculture.

The textile sector is being updated actively. In 2008 – 2009 about 800 million rouble. were invested into its update (fig. 4). One of the major

Figure 4. The problem tasks of linen complex modernization in the Vologda region and the course of their solution

Project participators	Problems	Provisions in the project	Funds drawing over 2008 – 2009, measures	
Flax-seeding stations	Depreciation of equipment – 92% Personnel	20,5 million rubles	• Bringing the foundation stock to sowing condition	0,6 million rubles.
Flax-sowing enterprises	Depreciation of equipment – 92% Personnel Pedigree seeds deficit	2143,12 million rubles	• 146 units of new machinery to cultivate flax	269 million rubles
Flax mills	Depreciation of equipment – 80% Personnel	189 million rubles	• Two new flax mills were built	120 million rubles
Textile flax-processing enterprises	Low quality of flax fibre Depreciation of equipment – 85% Minimal introduction of innovations because of limited possibilities of production capacities	7 231,4 million rubles	• 5 spinning machines were bought • The Italian line “Iro” for fabric softening was purchased and put into operation • An Italian tenter machine and equalizer were bought and put into operation	800 million rubles
Clothing and knitting enterprises	Personnel Obsolete technologies	244,5 million rubles	• The Swedish equipment for fabric bleaching was bought and prepared for installation • Sewing equipment was bought and put into operation	

project participators, PLC “Vologda textile”, installed finishing equipment – the line of fabric softening “Iro” (Italy), bleaching machines of the company “Benninger” (Switzerland), tenter machines and equalizer.

The results of the measures assumed are the following: increase in the production quality characteristics equal to consumer demand of population and great expansion of the range of produced fabric and home textile goods.

The channels of product distribution are of special importance for textile sector (*fig. 5*). The task is being solved successfully. The production of PLC “Vologda textile” is famous far from Russia. It is promoted under the brand name “Group “Linum”. For product promotion and increase in its sales the representative companies are starting up, 7 dealer centers have been opened (in Yekaterinburg, Ivanovo, Irkutsk, Nizhniy Novgorod, Rostov-Na-Donu, Samara, Tver’), besides that more than 100 independent agents

are working, the company’s retail chain has been created in Saint Petersburg, it is planned to expand it in other regions of the RF. It should be noted that PLC “Vologda textile” takes an active part in all-Russian and international exhibitions and promotes the sales online (pay attention that the website of the company represents its product in different languages).

Unfortunately, it’s impossible to solve all problems at the regional level. So, for example, there is a long-felt need for transferring flax-seeding stations from the federal possession to the oblast possession. It will permit all participators of the technological process to interact more efficiently. Besides that the receipt of the financial resources planned to realize the project would renew the technological equipment more actively and would catch up with the leading textile producers faster.

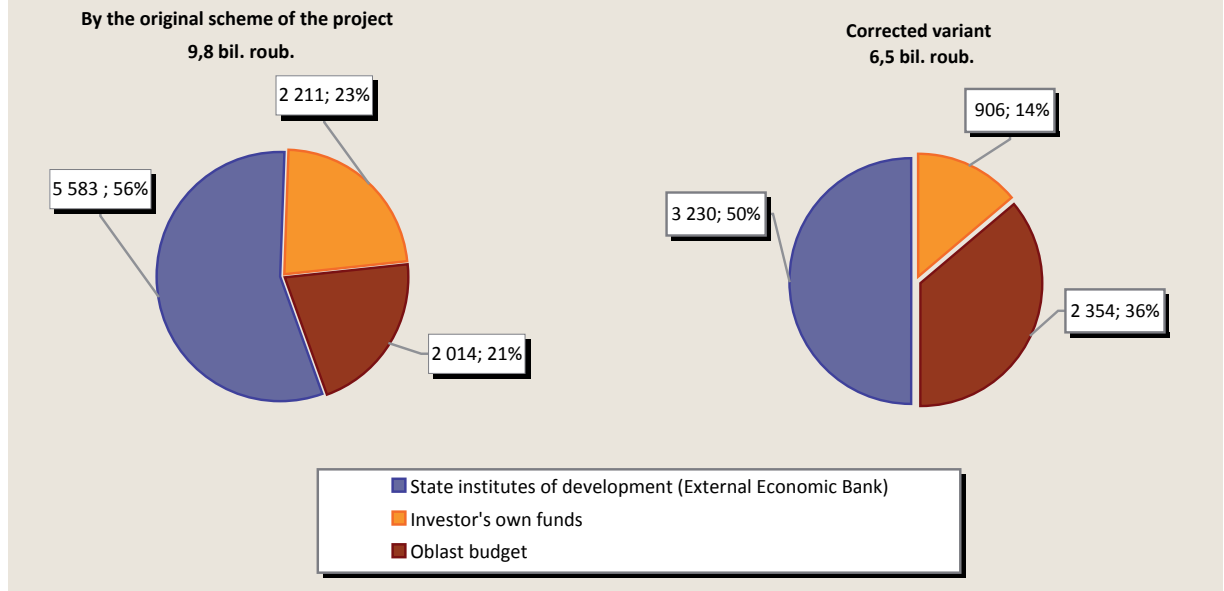
It is necessary to notice that the government of the Vologda region is aware of difficult eco-



Figure 5. The channels of distribution of the Vologda linen production



Figure 6. The volumes and structure of consolidated investment budget of the Vologda linen complex for the period till 2008 – 2013, million roubles; %



conomic circumstances. So there are 2 variants of pilot project financing prepared: 9.8 and 6.5 billion roubles (fig. 6). In 2008 the pilot project was worked out. Its total estimated cost is 9.8 billion roubles including 5.58 billion roubles from the federal financial institute. This pilot project pro-

vides for full replacement of textile equipment with new foreign equipment in all process steps and organization of its own power complex in the textile sector in order to reduce power costs.

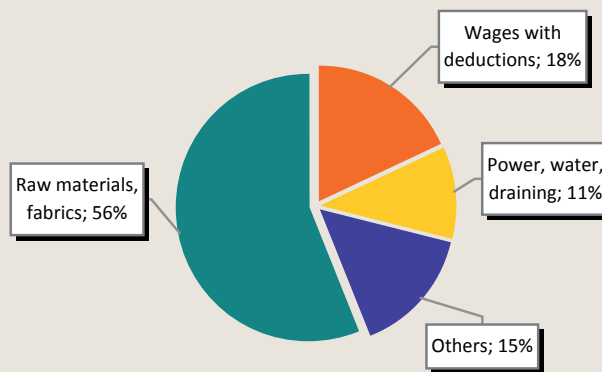
However in crisis the current condition of the sector and the tendencies at the product markets

Figure 7. The expected project efficiency by variants

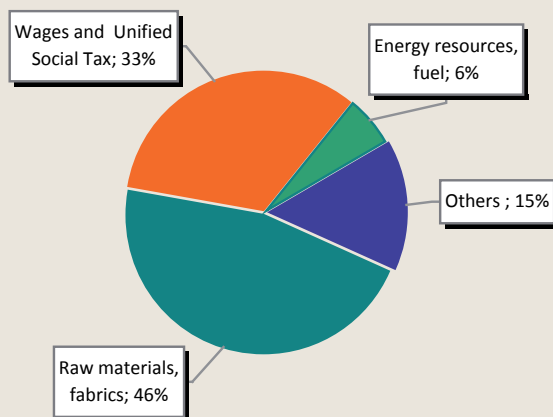
Agricultural sector	Investments 6.5 million roubles	Investments 9.8 billion roubles
Extending the sown areas	Up to 11.5 thousand ha	Up to 20 thousand ha
Raising the level of: – flax fibre yield	Up to 14 centner/ha	Up to 17 centner/ha
– flax seed yield	Up to 6.5 centner/ha	Up to 7 centner/ha
Increasing the quality of ready-made product	By 1.5 – 2 points	By 1.5 – 2 points
Decreasing the costs per an end production	By 35 – 40%	By 25 – 30%
Textile sector		
Increasing the total volume of marketable textile production per year	Up to 3.8 million roubles	Up to 8.3 billion roubles
Increasing the ready-made fabric output per year	Up to 17.5 million sq. m	Up to 43.5 thousand sq. m
Garments output	Up to 1.5 million units	Up to 3.3 million units
Clothes production	Up to 0.4 million units	Up to 1 million units
Manufacture of products of house textiles	Up to 1.07 million units	Up to 2.3 million units

Figure 8. Change in the structure of production costs

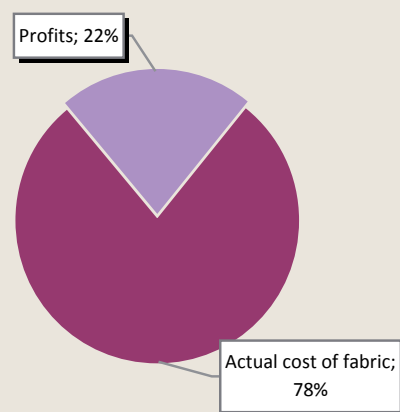
1. The existing structure of linen production cost price



2. Structure of cost price after the project implementation



3. Structure of price after the project implementation



demand to reduce the total estimated cost of the project up to 6.5 billion roubles in order to increase the possibilities of its financial marketability and to decrease the risk. The

ready project is a short version of financing of full version of the pilot project at the expense of the investment program reduction, i.e. the basis for changes is complex, weighted and balanced

Figure 9. The prospective parameters of the linen complex development in the Vologda region under the project

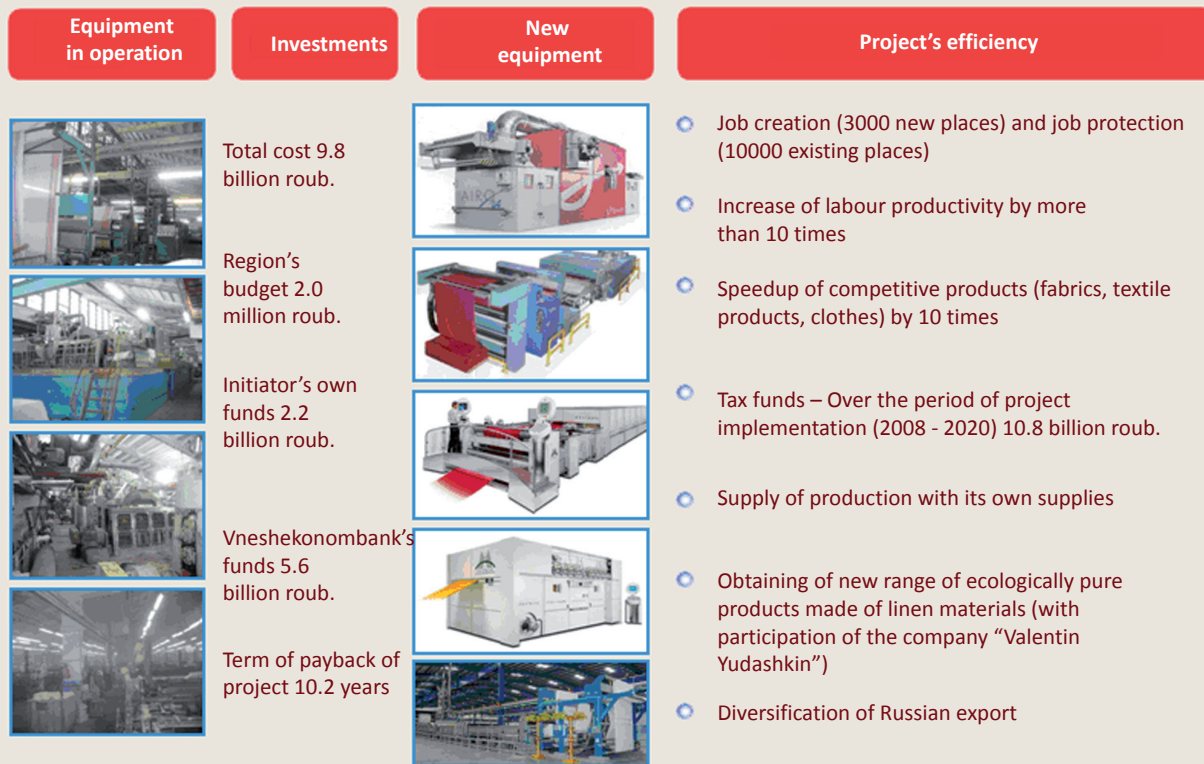
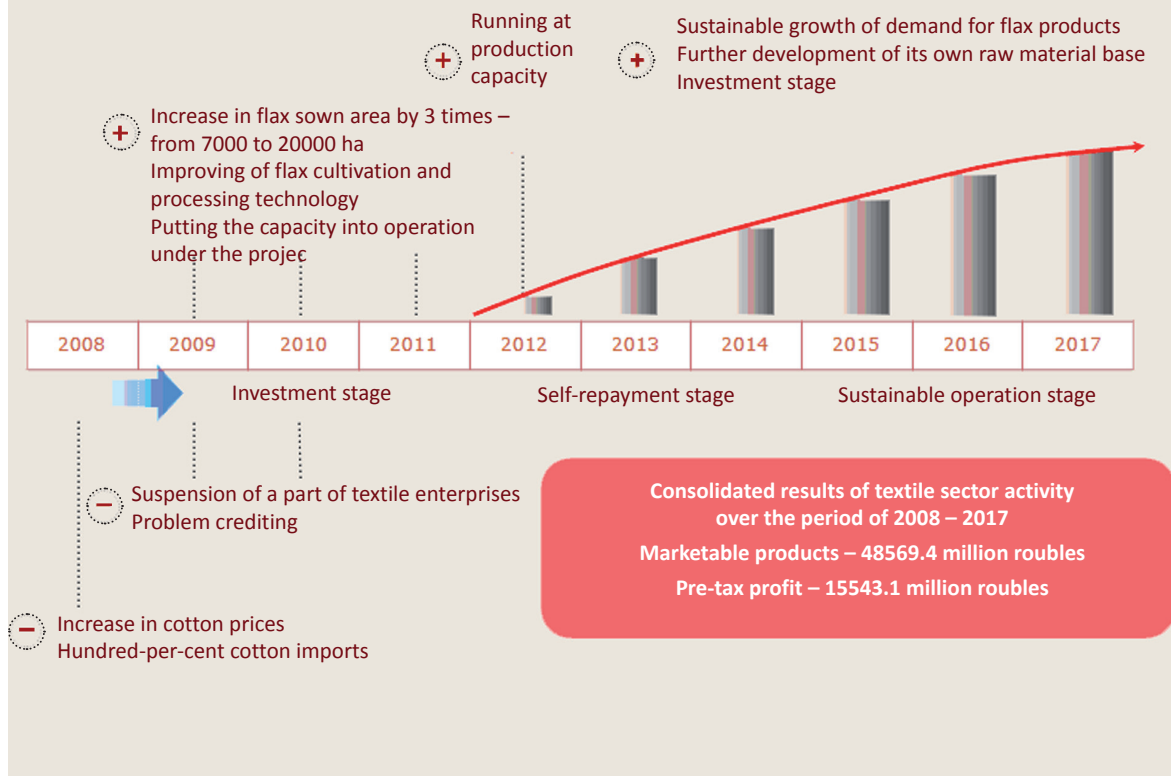


Figure 10. The project development logic by time



calculation of ration use of both available equipment and required equipment.

As it was mentioned above at present we are attracting the funds of Vneshekonombank and Rossel'khozbank and improving the project in accordance with their requirements.

However the further realization of the project will be in progress. The following things are to take place in the near future:

- to open the specialized laboratory for selection works on the basis of the North-West Research Institute of dairy and grassland agriculture, the laboratory will be financed from the oblast budget;

- to open the department for training the specialists in linen complex, it is planned to open it at the Federal State Educational Establishment of Higher Professional Education "N.V.Vereshagin Vologda State Dairy and Economy Academy";

- to keep on putting the successful experience of Belgium and Belorussia into practice;

- to increase in profitability and thereafter in profits of the textile sector enterprises;

- to expand the range of new high-technology fabric with special properties.

By means of structure updating our enterprises will be able to increase in production output of high added value cost, with the stage of finishing works included in the production string. After the corrected project is realized the total volume of textile production output will increase by 8,6 times – up to 3,796 million roubles annually; the ready-made fabric output – by 3 times – up to 17.5 million sq. m annually, the revenue will be over 700 million roubles.

But if the investments are 9.8 billion roubles, the final results will increase almost by 2 times (*fig. 7*).

The structure of production cost price and prices when producing the fabrics (*fig. 8*) and linen products will improve resulting from putting the up-to-date technologies into practice.

The macroeconomic effect of the project implementation by the key indicators is represented in *figure 9*.

It is worth noting that in order to increase the prestige and the image of the Vologda light industry production the oblast government signed the wider cooperation protocol with Llc "Valentin Yudashkin". According to this protocol the Vologda enterprises will be used as a basis for creating some experimental production for putting the innovation technologies into the light industry and for solving another range of tasks as well.

At present the leading fashion designer of the country V.A. Yudashkin is preparing a collection of clothes made of fabrics of domestic manufacturer – plc "Vologda textile". It will make it possible to sell its products in the highest price segments, i.e. with the highest added value cost.

In conclusion we draw readers' attention to the project development logic represented in less detail in *figure 10*.

Provided that all participators of the production string are concerned with the matter, the linen sector is able to achieve the objectives, in particular, to switch over to the production of competitive and innovative textile, to increase the labour production and the output, and therefore to make good its position at the domestic and foreign markets.

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