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THE FORMATION OF THE BIOPHARMACEUTICAL CLUSTER IN THE ALTAI REPUBLIC

UDC 332.135

**A. Glotko
A. Redkin**

The analysis and development of the scientifically-based offers and recommendations complex concerning the development of the biopharmaceutical cluster "Mountainous Altai", one of the growth points of pharmaceutical manufacturing in the Russian Federation are carried out. The cluster structure, directions of its development, the primary goals of a regional investment policy in cluster development, the basic indicators of realizing the cluster project are also considered. It is determined, that clusterization must be put into effect by the next directions: in the sphere of creation of innovations and "know-hows"; in the sphere of a transfer of innovations and "know-hows"; in the sphere of the development of commodity distribution infrastructure; in the sphere of interbranch interaction; in the sphere of protecting the economic interests and business reputation of the cluster participants, safety of consumers. The measures for realization of the cluster initiatives in the Altai Republic are offered.

Key words: innovative development of the region, biopharmaceutical cluster, organizational and economic mechanism, development of industrial potential of the territory, development indicators.

**ФОРМУВАННЯ БІОФАРМАЦЕВТИЧНОГО КЛАСТЕРА
В РЕСПУБЛІЦІ АЛТАЙ**

УДК 332.135

**Глотко А. В.
Редькін О. М.**

Проведено аналіз і розробку комплексу науково обґрунтованих пропозицій і рекомендацій щодо розвитку біофармацевтичного кластера "Гірський Алтай", що є однією із точок зростання фармацевтичного виробництва в Російській Федерації.

Розглянуто структуру кластера, напрями його розвитку, основні завдання регіональної інвестиційної політики розвитку кластера, основні індикатори реалізації кластерного проекту. Визначено, що кластеризація має відбуватися за такими пріоритетними напрямками: у сфері створення інновацій і "ноу-хау"; у сфері трансферу інновацій і "ноу-хау"; у сфері розвитку товаропровідної інфраструктури; у сфері міжгалузевої взаємодії; у сфері захисту економічних інтересів і ділової репутації учасників кластера, безпеки споживачів продукції. Запропоновано заходи щодо реалізації кластерних ініціатив на території Республіки Алтай.

Ключові слова: інноваційний розвиток регіону, біофармацевтичний кластер, організаційно-економічний механізм, розвиток виробничого потенціалу території, індикатори розвитку.

ФОРМИРОВАНИЕ БИОФАРМАЦЕВТИЧЕСКОГО КЛАСТЕРА В РЕСПУБЛИКЕ АЛТАЙ

УДК 332.135

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Проведены анализ и разработка комплекса научно обоснованных предложений и рекомендаций по развитию биофармацевтического кластера "Горный Алтай", являющегося одной из точек роста фармацевтического производства в Российской Федерации. Рассмотрены структура кластера, направления его развития, основные задачи региональной инвестиционной политики в развитии кластера, основные индикаторы реализации кластерного проекта. Определено, что кластеризация должна осуществляться по таким приоритетным направлениям: в сфере создания инноваций и "ноу-хау"; в сфере трансфера инноваций и "ноу-хау"; в сфере развития товаропроводящей инфраструктуры; в сфере межотраслевого взаимодействия; в сфере защиты экономических интересов и деловой репутации участников кластера, безопасности потребителей продукции. Предложены мероприятия по реализации кластерных инициатив на территории Республики Алтай.

Ключевые слова: инновационное развитие региона, биофармацевтический кластер, организационно-экономический механизм, развитие производственного потенциала территории, индикаторы развития.

The transition of the pharmaceutical industry to the innovative development model, an increase of its competitiveness both in Russian, and in the foreign market, is now the major strategic problem of federal level. Thus the population should be provided not only with inexpensive and qualitative medicines for treatment socially significant diseases, but also with the innovative means made in the Russian Federation according to the highest standards.

One of the growth points of pharmaceutical industry in the country can and should be the Altai Republic project on the formation of the biopharmaceutical cluster. The testimony to this are world researches according to which pharmaceutical industry possesses one of the steadiest potentials of functioning in the system of connected branches (clusterization potential).

The possibility of manufacturing various treating products based on the use of natural raw materials, allows to enter easily the biopharmaceutical cluster, the strategic

directions of the republic development: tourism and agriculture. The biopharmaceutical cluster development will lift tourism development in the Altai Republic on the new qualitative level, will create additional workplaces for people living in a countryside (72 % of the population of the Altai Republic live in a countryside), and will also allow to use carefully the extracted vegetative and animal raw materials.

Today there are the investors in the Republic, ready to put considerable means to the development of biopharmaceutical branch.

At the first stage it is necessary to prove an urgency of the biopharmaceutical cluster creation, to describe advantages of the region as a platform for forming the innovative workings out of medicines, and also to shine the resource potential and natural-environmental conditions of the territory.

The Mountainous Altai has been a raw platform for manufacture of biological medicines for a long time already. Here there is a considerable quantity of wild plants which can

be used in pharmaceutical branch (from 500 to 700 names). It is offered to develop biopharmaceutical cluster on the basis of the private-state partnership. The state in this case incurs the maintenance of the private companies with the necessary infrastructure, granting them privileges in the form of grants. The cluster idea is successfully combined with the development of special economic zones of tourists-recreational type "The Altai Valley".

During the organization of a cluster, the special attention will be given to innovative technologies. The scientists of Gorno-Altai State University have been studying the herbs of surrounding territory for many years. They have developed the recipes of preparing medicines of vegetative and animal origin, among them from antler production. At higher school there are also working-outs in the field of technology of maintaining the healthy herd of marals. The scientists of the University have deduced the new – Altai-Sayansk breed of marals.

The enterprises of Tomsk region, with which the Republic has recently signed the cooperation agreement, will essentially help in realization of the new project. In this field many innovative projects are run in special economic area of technical-instilling type.

The interbranch character of the questions faced by the cluster, forms the number of corresponding problems defining basic directions of cluster development:

1. In the sphere of the innovations and "know-hows" creation:

- working out of deep processing pantler technologies and medical-technical raw materials, bodies and subproducts;
- studying the influence of the antler maral-breeding products on the human body;
- active support of instilling activity from the part of scientific institutions and enterprises – the technological leaders.

2. In the sphere of innovations and "know-hows" transfer: creation of the transfer of innovations system, through an easy approach of workers to the results of research and development, consultation;

wide introduction of new technologies of deep processing the antler raw materials, bodies and subproducts.

3. In the sphere of development of commodity distribution infrastructure:

- activization of the international cooperation concerning popularization of products made by the cluster enterprises;
- the complex of marketing actions for popularization of the biologically-active additives made from non-polluted raw materials, received in the Republic territory, among various strata of society (also through active participation in fair-exhibition activity).

4. In the sphere of interbranch interaction: development of the contracting system with manufacturers and raw materials suppliers;

active cooperation of the cluster enterprises with the sanatorium organizations located both in the Altai Republic territory, and in the territory of adjacent regions;

formation of enterprises with the hi-tech infrastructure intended for realization of a full cycle medical-rehabilitation, improving, preventive and recreation-relaxation technologies (programs), based on the application of the newest medicines received by deep processing of antler raw materials, and also the newest technologies with their application in regenerative medicine, improving courses, modern schemes of medical tourism and ecotourism.

5. In the sphere of protection the economic interests and business reputation of the cluster participants, safety of consumers:

brending actions on the certification and patent-licence protection of products made by the cluster enterprises;

introduction of management systems at the enterprises and the production forming, corresponding to ISO groups and GMP standards.

Today in the Republic there is a number of enterprises, engaged with cultivation and processing medical-technical raw materials and products of antler maral-breeding. So, now in the Republic there are 106 economical enterprises of various forms of ownership with the livestock of 52,372 marals and 1,441 spotty deers. At the economical enterprises about 41 % of the livestock of marals and deers of the Republic is concentrated in Ust-Koksinskiy area 20 % – in Shebalinskiy, 17 % – in Ust-Kanskiy, 15 % – in Ongudayskiy, 4 % – Mayminski, 3 % – Chemalskiy. Processing of medical-technical raw materials and products of antler maral-breeding in the Altai Republic is carried out by 11 enterprises.

The products of processing enterprises are realized to the trading and chemist's network, to tourist bases and rest houses, sanatoria of the Altai Republic and many regions of the Russian Federation.

The basic capacities of processing are concentrated in the territory of municipal union the "City of Gorno-Altai" in the Open Company "Republican Bee-Centre", Joint-Stock Company "Fito-PaM", institution "Mountain-Altai" of the Russian Agrarian Academy.

Directly in the Municipal Union Territory "The Mayminski Area" processing of medicinal raw materials and products of antler reindeer breeding is carried out by three enterprises: Open Company "Narine", Open Company "Biostimulus", Open Society "Karym". Open Company "Antler Project" is also engaged in products processing. The above-mentioned enterprises have more than 90 % of operating capacities on processing and storage of ready-made goods, located in the Altai Republic territory.

However, the majority of the enterprises, processing medical-technical raw materials and products of maral-breeding, lose to the similar enterprises working in the Altai territory, and Novosibirsk region because of insufficiency of own means for the production development and active advancement of own products in Russian and international markets.

For today the level of cooperation of the cluster enterprises with the sanatorium organizations located both in the territory of the Altai Republic, and in the territory of adjacent regions for advancement of own products is low. One of the perspective directions of such cooperation is the use of antler baths in treatment techniques. Nowadays the availability of cooking antler baths for regenerative treatment is extremely limited, as it is possible only in the territory of removed maral places of the Republics and only 1,5 – 2 months in a year (the period of cutting antlers). After the season termination there is a unique alternative to newly cut antlers – the biological activity of frozen or dried up antlers is considerably lower than the initial one and is being lost during long storage. The major factors constraining the development of resort business in the Republic, are: the insufficient level of the resort development infrastructure and low degree of patients service in the number of existing health resorts; the considerable reduction of research and industrial works in the field of studying and using natural medical resources, working out and introduction into practice the modern process equipment, new techniques of diagnostics, treatment and improvement of patients in sanatorium conditions, etc.

Thus, it is required the creation of enterprises with hi-tech infrastructure intended for realization of a full cycle of medical-improving technologies (programs), based on the use of the newest medicines received by deep processing of antler and medical-technical raw materials.

The organizational structures on patenting of research working-outs are also necessary, for the organization of works on standardization and certification of the cluster products, and also the structures which are engaged in marketing

activity, i.e. the advancement of the research working-outs' results, to the production made by the cluster enterprises.

Territorially the cluster will be located in the territory of three municipal unions: Gorno-Altai, Mayminskiy and Chemsalskiy areas. It is connected with the fact that the basic enterprises for manufacturing the biopharmaceutical products are concentrated in this territory: Open Company "Narine", Open Society "Karym", Open Company "Biostimulus", Joint-Stock Company "Fito-PaM", Open Company "Plant of Mountainous Altai", Open Company "Neopant-Chemal"; in Mayminskiy and Chemsalskiy areas the largest projects of the Altai Republic in the field of tourism are realized by: "The Altai Valley", "Manzherok", the Tourist Complex "Altai Resort", Tourist Complex "Maryin Island" and others; in Gorno-Altai and Mayminskiy area the largest scientific organizations of the Republic are located. The environmental estimation, working out the techniques of improvement enter into the area of their scientific researches on the basis of natural raw materials, monitoring and estimation of vegetative and animal raw materials, introducing the objects of the plant and animal life, etc.: "Gorno-Altai State University", "Mountain-Altai" of the Russian Agrarian Academy, the "Gorno-Altai Scientific Research Institute of Agriculture of the Russian Academy of Agricultural Sciences", "The Altai Regional Institute of Ecology".

The structure of the biopharmaceutical cluster of the Altai Republics is presented in the figure. The research centre of "Gorno-Altai State University" becomes the cluster kernel. Besides, the University will provide a professional staff training. At the moment there is a big scientific reserve for the centre organization. The University conducts conferences. There is a highly professional personnel there. Corresponding experts are prepared, the scientific researchers are conducted. Their results are approved at the enterprises of biopharmaceutical manufacture, patents have been received, there is a good material and technical base.

The basic coordination body of the cluster's control will be the Council including representatives of the basic organizations – the cluster's participants. The cluster's Council will be selected among the representatives of the cluster's participants, for a period of three years, and its primary goal will be the definition of the cluster's development strategy.

The cluster's Council structure should include two representatives from the Government of the Altai Republic and one representative from the Municipal Union's Administration in the territory of which the basic cluster's kernel will be based. These representatives without elections, on representation of corresponding authorities' heads, will simultaneously enter the Strategic committee.

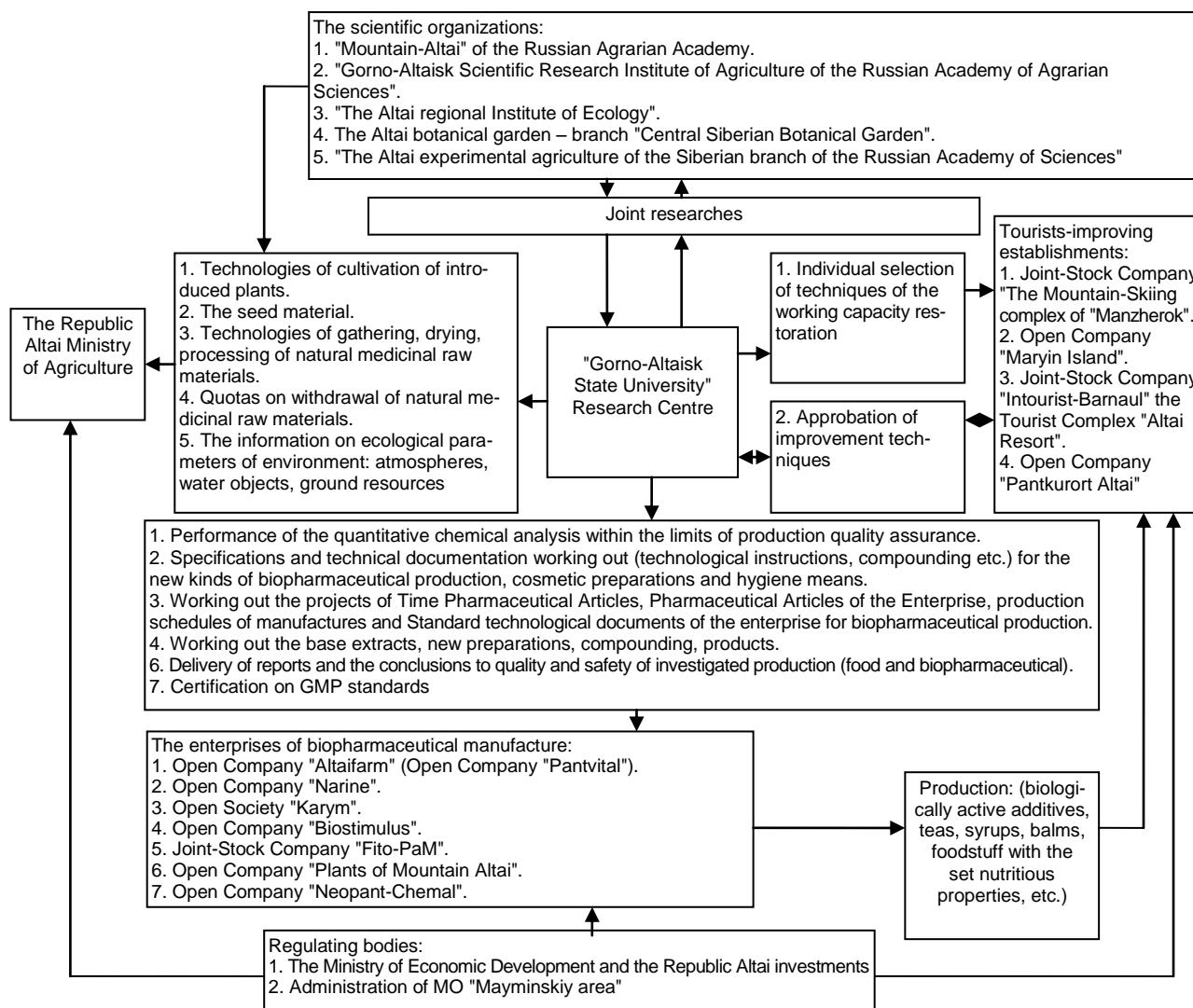


Fig. The structure of the biopharmaceutical cluster of the Altai Republic

Other participants of the Strategic committee will be put forward by the cluster's participants. Elections of the Strategic committee's members are carried out at the meeting of the cluster's participants by simple majority of votes, and each of the cluster's participants should possess one voice.

The form of work of the cluster's Council are the meetings which will be held as required. The cluster's Council makes decisions by the majority of votes from the total number of members present at the meeting, and each member of the cluster's Council possesses one voice.

Almost all of the enterprises for manufacturing biopharmaceutical products and the organization of a tourists-improving direction refer to small and medium businesses.

Concerning the subjects of small business of the biopharmaceutical cluster the tax-budgetary policy should assume the realization of the following basic actions:

1. It is necessary to continue the work on introducing the simplified taxation system on the basis of the patent in the territory of the Altai Republic.

2. To develop the systems of privileges on taxes for the subjects of small and medium businesses of the biopharmaceutical cluster, within the limits of the operating federal legislation.

3. To generate at the expense of the republican budget means the system of preferential financing the subjects of small and medium businesses of the biopharmaceutical cluster, providing:

- granting the created businessmen;
- granting the young businesses;
- granting microloans, the budgetary subsidizing, directed at the creation and development of material and technical base of the business subjects;
- granting the state guarantees and subsidizing according to the obligations of the subjects on the crediting contracts at the expense of the mortgaging fund;
- subsidizing of expenses for participation of the business subjects of the biopharmaceutical cluster in the inter-regional and international exhibitions-fairs;
- granting on the expenses connected with patenting, certification, examination and the state registration of intellectual activity results, working out and designing the new product samples, the organization of manufacture preparation, reception the engineering services.

4. It is necessary to promote the advancement of ready-made products in Russian and international markets.

5. To improve the tax-budgetary support to the subjects of the small and medium businesses making and delivering products of biopharmaceutics out of the Altai Republic and for export.

Financing of expenses on realization of measures of the tax-budgetary support to the subjects of small business should be carried out on an equal footing, according to the legislation of the Russian Federation, from the Republican and local budgets.

The primary goals of the investment policy of the Altai Republic the directed at the development of small and medium businesses of the biopharmaceutical cluster and include the following:

- formation of the developed infrastructure of the investment activity including the creation of mortgaging fund, the market of insurance services, network of business incubators in Mayminskiy and Chemalskiy areas of the Republic, and also the consulting centres providing timely information support for small and medium businesses;
- creation of the investment mechanism including leasing, franchising, and providing steady economic development of the Republic and a diversification of the goods and services

manufacture, reproduction of natural-resource potential and escalating the investments into the human capital;

- granting of the ground areas on favorable terms, the state or municipal property.

The basic indicators of realization of the biopharmaceutical cluster creation of the Altai Republic are:

- the increase in the content of the regional product and export of the Republic share of products of the cluster's participants, and first of all – the end product, competitive in the Russian and international markets;
- the increase in number of new workplaces within the cluster;
- the growth of volumes of research and development and innovative activity within the cluster;
- the reduction of the percentage of discrepancy between the number of experts who graduated from primary, secondary and higher professional educational institutions, and the requirement of the market in these experts within the cluster;
- growth of relative density of goods and services of the subjects of small and average businesses made and rendered within the cluster by means of outsourcing and subcontracting mechanisms.

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INNOVATION PROCESS AS THE OBJECT OF ACCOUNTING

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O. Prokopishyna

The results of research aimed at further development of accounting methods for innovation activity are given. On the basis of revealing the essence of innovation process and its stages the systematization and specification of the procedures of financial and management accounting are carried out. The above-mentioned procedures are aimed at forming the information and analytical complex of decision-making support concerning innovations development and commercialization. The distinct accounts for innovation processes expenses and sales of innovative products that may enrich analytical features of accounting system of innovation activity are proposed to use.

Key words: innovation, innovation process, accounting.

ІННОВАЦІЙНИЙ ПРОЦЕС ЯК ОБ'ЄКТ БУХГАЛТЕРСЬКОГО ОБЛІКУ

УДК 657.421.3

Прокопішина О. В.

Висвітлено результати досліджень у напрямку обґрунтування та подальшого розвитку методичного забезпечення обліку інноваційної діяльності. На основі виявлення сутності інноваційного процесу та його стадій проведено систематизацію та уточнення змісту процедур, які повинні здійснюватися підсистемами фінансового та управлінського обліку для забезпечення формування інформаційно-аналітичного комплексу підтримки управлінських рішень щодо розробки та комерціалізації інновацій. В обліковій роботі інноваційно активних підприємств запропоновано до використання спеціальні рахунки бухгалтерського обліку, які дозволяють розширити можливості аналізу результатів інноваційної діяльності.

Ключові слова: інновації, інноваційний процес, облік.