THE FORMATION OF THE BIOPHARMACEUTICAL CLUSTER IN THE ALTAI REPUBLIC

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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.

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ФОРМУВАННЯ БІОФАРМАЦЕВТИЧНОГО КЛАСТЕРА
В РЕСПУБЛІЦІ АЛТАЙ

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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, напрямі його розвитку, основні завдання регіональної інвестиційної політики розвитку кластера, основні індикатори реалізації кластерного проекту. Визначено, що кластеризація має відбуватися за такими приоритетними напрямами: у сфері створення інновацій і "ноу-хау"; у сфері трансфера інновацій і "ноу-хау"; у сфері розвитку товарообігової 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.

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ФОРМИРОВАНИЕ БИОФАРМАЦЕВТИЧЕСКОГО КЛАСТЕРА
В РЕСПУБЛИКЕ АЛТАЙ

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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 России, Феде рации. 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-хau"; 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.
aktivization of the international cooperation concerning
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 manufac-
turers 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
products of antler reindeer breeding is carried out by these
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:
   breeding actions on the certification and patent-
   license protection of products made by the cluster enterprises;
   introduction of management systems at the enterprises
and the production forming, corresponding to IS0 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 reindeer
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 spotted deer. At the economical
enterprises about 41 % of the livestock of marals and deer of
the Republic is concentrated in Ust-Kokinsky area 20 % –
in Shebalinsky, 17 % – in Ust-Kansky, 15 % – in Ongudaysky,
4 % – Mayminsky, 3 % – Chemalsky. Processing of medical-
technical raw materials and products of antler reindeer
breeding in Altai Republic is carried out by 1/f 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 activities 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
Mayminsky Area" processing of medicinal raw materials and
products of antler reindeer breeding is carried out by three
enterprises: Open Company "Darine", Open Company
"Biostimulus", Open Society "Karym", Open Company "Antler
Project" is also engaged in processing. The above-
mentioned enterprises have more than 90 % of operating
capacities on processing and storage of ready-made goods,
located in 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 marals 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, Mayminsky and Che-
maisky areas. It connected with the fact that the basic
enterprises for manufacturing the biopharmaceutical products
are concentrated in this territory: Open Company "Darine",
Open Society "Karym", Open Company "Biostimulus", Joint-
Stock Company "Fito-Pam", Open Company "Plant of
Mountainous Altai", Open Company "Neopant-Chemal";
In Mayminsky and Chemalsky 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 "Maryn Island" and others; in Gorno-Altai
and Mayminsky area the largest scientific organizations of
the Republic are located. The environmental estimation,
working out the techniques of improvement of 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 Republic is presented in the figure. The research centre
of "Gorno-Altai State University" becomes the cluster
core. 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. The results are approved at the end of the
year 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 orga-
izations - the cluster's participants. The cluster's Council will
be selected among the representatives of the clusters.
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.

The scientific organizations:
2. "Gorno-Altai Scientific Research Institute of Agriculture of the Russian Academy of Agrarian Sciences".
3. "The Altai regional Institute of Ecology".
4. The Altai botanical garden - branch "Central Siberian Botanical Garden".
5. "The Altai experimental agriculture of the Siberian branch of the Russian Academy of Sciences".

1. Technologies of cultivation of introduced plants.
2. The seed material.
3. Technologies of gathering, drying, processing of natural medicinal raw materials.
4. Quotas on withdrawal of natural medicinal raw materials.
5. The information on ecological parameters of environment: atmospheres, water objects, ground resources.

The Republic Altai Ministry of Agriculture

Joint researches

"Gorno-Altai State University" Research Centre

1. Individual selection of techniques of the working capacity restoration
2. Approval of improvement techniques

Tourists-improving establishments:
1. Joint-Stock Company "The Mountain-Skiing complex of Manzhoski".
2. Open Company "Mairyn Island".
3. Joint-Stock Company "Intourist-Bansu" the Tourist Complex "Altai Pleasant".
4. Open Company "Pantkurort Altai"

The enterprises of biopharmaceutical manufacture:
1. Open Company "Altalfarm" (Open Company "Pantvital").
2. Open Company "Narine".
3. Open Society "Karym".
4. Open Company "Biolisterm".
5. Joint-Stock Company "Fito-PaM".
6. Open Company "Plants of Mountain Altai".
7. Open Company "Neospot-Chemial"

Regulating bodies:
1. The Ministry of Economic Development and the Republic Altai investments
2. Administration of MO "Maiminsky area"

1. Performance of the quantitative chemical analysis within the limits of production quality assurance.
2. Specifications and technical documentation working out (technological instructions, compounding etc.) for the new kinds of biopharmaceutical/production, cosmetic preparations and hygiene means.
3. Working out the projects of Time Pharmaceutical Articles, Pharmaceutical Articles of the Enterprise, production schedules of manufactures and Standard technological documents of the enterprise for biopharmaceutical production.
4. Working out the base extracts, new preparations, compounding, products.
5. Delivery of reports and the conclusion to quality and safety of investigated production (food and biopharmaceutical).
6. Certification on GMP standards.
7. 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 businesses 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;
5. To improve the tax-budgetary support to the subjects of the small and medium businesses making and delivering products of biopharmaceuticals 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 a mortgage funding, the market of insurance services, network of business incubators in Mayминskiy 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.


