

**Working paper**

# Industrial Development of Kyrgyzstan: Regional Aspects

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- Dr. Nadejda Komendantova –research team lead; Dr. Elena Rovenskaya and Prof. Love Ekenberg – senior experts; Dr. Nikita Strelkovskii and Dr. Sergey Sizov as well as Ms. Elham Sedighi and Dr. Anastasia Stepanova (IIASA);
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# Industrial Development of Kyrgyzstan: Regional Aspects

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## 1. Introduction

Starting from the beginning of the last century there were three periods in the development of industry in the regions of Kyrgyzstan: the period of formation of new market relations (1991-1995), the period of activation of the state policy on investment (1996-2000) and the period of stabilization (2001-2011). The period of formation of new market relations took place from 1991 to 1995, following the fall of the former Soviet bloc. The period was characterized by destruction of traditional economic ties in the domestic industry were created during the Soviet time. Industrial subsidies were reduced tariffs for electricity and transportation costs increased significantly, the demand for some strategic industrial production, such as military, decreased considerably. Socio-economic development was characterized by unemployment growth, decrease in wages and social payments, hyperinflation, emigration and deficit in consumer goods. The privatization of large-scale industrial enterprises, started in 1992<sup>1</sup>, led several highly specialized enterprises to stop operations and change their main business lines with a lower share of manufacturing value added. By 1995, the volume of industrial production in all sectors had decreased up to 33% relative to the year 1990. The period of reactivation of public investment, 1996 – 2000, was characterized by a recovery in extracting industries, but further decline of processing industries. In 1996 the gold mine "Kumtor" started operations, while the fuel and energy industries had grown at by 75% and 114% respectively, as compared to the year 1990. The period of stabilization, 2001-2011, was characterized by a recovery of processing industry when the metallurgical production reached a share of 57% of industrial GDP, the food processing industry reached the share of 11% and the textile industry reached the share of 5% as well as other industries, including construction materials, reached the share of 5%, according to the National Statistical Committee of the Kyrgyz Republic.

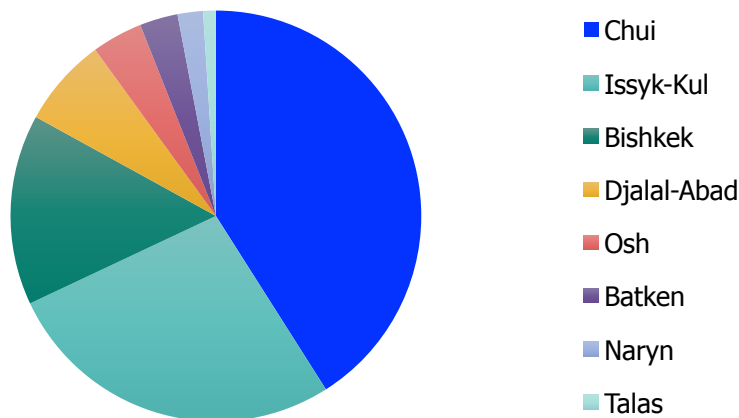
This chapter is providing the overview of potentials for industrial development in different regions of Kyrgyzstan, which were shaped by the Kyrgyz industrial history as well as by available production factors in the regions. The evidence described in this chapter is based on national statistical data and existing national and international reports as well as on interviews with stakeholders responsible for regional development and four roundtable workshops which were organized in four different locations of Kyrgyzstan and took place on the 16<sup>th</sup> of May in Karakol (Issyk-Kul region), the 18<sup>th</sup> of May in the Osh city, the 11<sup>th</sup> of July in Bishkek and the 13<sup>th</sup> of July in Jalal-Abad. The main aim of the workshops was to discuss problems for industrial development in the regions, the role of state in development of industry and possibilities for efficient integration of regional strategies with sector programs. Between 20 and 30 stakeholders from private sector, municipal administration, regional decision-makers and other representatives of industry participated in the workshops in each region.

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<sup>1</sup> 9 enterprises were privatized in 1991, 108 in 1992, 146 in 1993, 59 in 1994, 138 in 1995, 22 in 1996, 45 in 1997, 3 in 1998 and 4 in 1999

## 2. Dynamics and potentials for industrial development in the regions

The current state of industrial development in the regions is characterized by misbalances with some regions being much strongly developed then others (Figure 1).



*Figure 1. The share of industrial production among Kyrgyz regions in 2016. Source: National Statistical Committee of the Kyrgyz Republic. Source: (National Statistical Committee of the Kyrgyz Republic, 2018).*

The strongest development of industry is shown by the Chui region (41%), followed by the Issyk-Kul region (24%), Bishkek city (17%) and Jalal – Abad region. These regions have a leading position in industrial development, the major large-scale industrial enterprises are also situated in these regions.

The highest share of industrial production of the country is in the Chui region. The Zhayilsky district has the highest share of industrial production in the Chui region (66%), mainly due production of pure petroleum products and production of basic metals and finished metal products. This region also has the major Kyrgyz large-scale refining plants as well as mining and metallurgic factories (refining plant “Kyrgyzzaltyn OJSC”, the Kyrgyz Mining and Metallurgic Factory (KGMK) and the petrol refinery “China Petrol Refinery Junda”). The Issyk-Kul region has the second highest share of industrial production, mainly due to “Kumtor” (94% of all industrial production in Issyk-Kul). The city of Bishkek has the third highest share of industrial production, from which the largest sectors are energy (31%), food processing (28%), construction materials (10%) and textile (10%). The Jalal-Abad has the forth-highest share of industrial production because it is an important energy generation center, with the major hydro-power plants of Kyrgyzstan being situated on the river Naryn. Energy has the highest share of industrial production of Jalal-Abad (43%), followed by the metallurgic sector and petrol (35%). Other regions in Kyrgyzstan have a much less significantly developed industry. The industry in Batken region makes 3%, Osh region 2% and Osh city 1.7%, in the Naryn region it makes 1% and in the Talas region 0.5%.

Also, the dynamics of industrial production shows that the regions with high share of industrial production had a positive development at the same time as regions with the low share of industrial production had a negative or stagnating development (Figure 2). Such development shows a tendency to polarization of industrial

development and an increase of the divide among the regions.

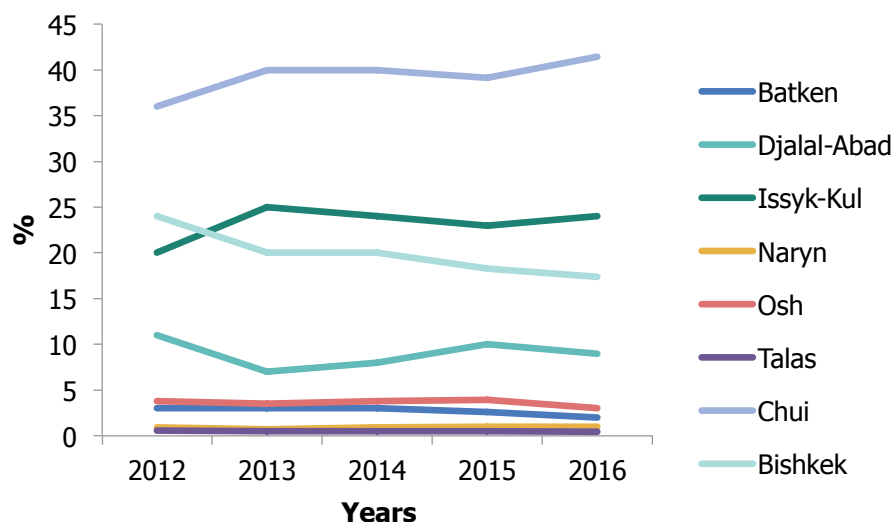


Figure 2. Dynamic of industrial production in the regions. Source: (National Statistical Committee of the Kyrgyz Republic, 2018).

The industrial development in the regions is mainly framed by **the Concept of regional policy of the Kyrgyz Republic, 2018-2022**, as approved by the President of Kyrgyzstan in 2017, the **Plan for Realization of Measures** developed in the concept and the **Decree of the President of Kyrgyz Republic about realization of the concept of regional policy for the period 2018-2022**. The major goal of the regional policy is to provide socio-economic development of the regions, to increase well-being and quality of life of people through targeted support to a number of selected regions. Further goals are to create drivers for human development and efficient economy.

The Concept of regional policy provides the major principle of the regional policy for the period up to 2022 and includes transition of state policy from a sectoral approach to a more complex model of development of the regions, which should include specifics of every region. Such approach should include a focus on several aspects, which facilitate socio-economic development in the regions. The major difference to the previous regional policy is in the focus of efforts, which will be on support of a number of selected territories rather than on support of depressive and weakly developed regions. The policy is based on the principles of subsidiarity and decentralization of decision-making processes when the major implementation should happen at the local level, based on the local incentives and followed by increased resources for capacity building at the local level. Besides the goals of development, the strategy also includes principles of for implementation of identified measures, namely systemic approach to governance and continuity of the policy measures. Currently the discussion is ongoing about how the principles of subsidiarity could be implemented.

The concept identifies 20 “points of growth”, which are pilot cities or towns on the basis of which further socio-economic development should be created. The role of the points of growth is to create conditions for formation on their territories of necessary social, economic, communication and logistic infrastructure, which are needed to stimulate economic growth. The concept foresees formation of social, economic, communication and logistical infrastructure, which is needed for development of territories around the “points

of growth". There are points of growth in every region. Some of the regions include more than one point of growth. The description of points of growth is provided in the next sub-chapter.

The concept foresees following measures for implementation of its strategic goals:

- Identification of directions for long-term development of the regions,
- Implementation of measures for development of clusters,
- Modernization existing enterprises,
- Attraction of investment into new enterprises and existing enterprises which are currently not working,
- Stimulation of construction of new industrial enterprises,
- Stimulation of industrial development in the regions

The points of growth should become "locomotives of development" for the entire region. However, currently only few concrete plans for development of points of growth exist. Considering the limitation of available budget, it is planned to split the support to several phases and to include to each phase measures for 5-6 cities. Currently the concept of regional policy indicates the cities of Bishkek and Osh as the most perspectives ones which should have special programs of development.

The **Plan for Realization of Measures** foreseen under the concept of regional development was approved by the government of the Kyrgyz Republic in March 2018<sup>2</sup>. The plan includes three main sets of measures: a) measures to improve regional policy, b) sectoral measures of regional policy and c) measures for practical realization.

a) The measures to improve regional policy include 13 legal measures at the regional and national levels. This includes development of the unified approach towards complex planning of the socio-economic development of villages and towns, cities and the region, in general. Such complex approach should be based on synergies in sectoral and regional policies in Kyrgyzstan. The measures also include a complex administrative evaluation and assessment and the definition of the main directions for development of cities and villages, keeping points of growth as priority. The measures also foresee general plans for development of cities considering long-terms goals of special development. The measures also focus on cluster development.

b) The sectoral measures of regional policy include 6 measures towards technical modernization, creation of conditions for development of transportation system necessary for industry, creation of conditions for food processing exports at the international markets, provision of access to electronic state and municipal services as well as other measures with the goal to guarantee qualitative development of the regions.

c) The measures of practical realization include 10 following measures:

- Construction and launch of 12 trade and logistics centers in the regions of the republic;
- Construction and launch of 10 slaughter shops in the regions of the republic;

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<sup>2</sup> Order No. 107-b of March 29, 2018 "On approval of the Action Plan for the implementation of the Decree of the President of the Kyrgyz Republic and the Concept of the Regional Policy of the Kyrgyz Republic for the period 2018-2022".



- Construction and launch of 42 new enterprises in the regions of the republic;
- Opening of the Population Centers (CSC) in the regions;
- Construction of 28 irrigation facilities and introduction of 27.6 thousand hectares of new irrigated land and more than 21.7 thousand hectares to increase water availability;
- It is planned to conduct a comprehensive study of the existing need in the regions in educational and medical institutions. After such study construction should start in the number of selected regions;
- Provision of social housing for residents of the regions;
- Modernization and construction of energy infrastructure in the regions;
- Construction and reconstruction of the regional transport networks;
- Construction and reconstruction of the water supply systems in the regions

According to the ***Decree of the President of Kyrgyz Republic about realization of the concept of regional policy for the period 2018-2022*** it is planned to construct following new enterprises in the regions of the republic:

- Mining: development of tin deposits in Issyk-Kul region, extraction of limestone in Issyk-Kul region, extraction of salt and shell rock in Jalal-Abad region, development of the coal reserves in Almalyk.
- Metals: two gold factories in Jalal-Abad, factory on processing of antimony in Jalal-Abad and on processing of silicon in Batken, production of ammonium nitrate in Chui
- Products from wood or paper: production of paper and of explosive substances in Chui, mineral fertilizers in Osh region, plant for the production of polyethylene film and factory for production of bags in Osh.
- Plastic and rubber: production of asphalt and bricks in Chui, production of asphalt in Jalal-Abad, two cement factories in Osh, factory for production of construction materials and of asphalt in Osh, manufacturing of gypsum and of asbestos slate also in Osh.
- Manufacturing of machinery: factory assembling machineries and equipment for agricultural works, factory producing electric lamps in Jalal-Abad.
- Food processing: processing of potatoes in Issyk-Kul, two meat processing factories in Naryn, milk factory also in Naryn, fruits production factories, conservation and storage of fruits and vegetables in Naryn, processing of potatoes in Batken, processing of potatoes and sugar in Talass, as well as conservation factory in Talass and processing of meat in Osh.
- Textile" construction of agro-industrial complex "Eldan Atalyk" and of the sewing factory in Osh
- Electricity: construction of mini-hydro power stations in the Issyk-Kul region

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### **3. Impacts of industry on social, economic and environmental development in the regions**

Information about specialization of the regions is structured to reflect the specialization of each region and potentials for industrial development according to the available natural resources, geographic conditions and availability of industrial infrastructure. The concept of regional development as well as other existing plans of the government foresee that industry, in general, and manufacturing industry, in particular, should be oriented towards utilization of the locally available resources and locally available agricultural products. In the long-term, specialization of each region should be based on the historical specialization of the region, availability of local natural resources, geographic conditions and availability of industrial infrastructure.

The city of Bishkek is generating the biggest share of GDP of the country (35%), followed by Chui region (16%), Osh region (12%), Issyk-Kul region (12%), Jalal-Abad region (11%). Three other regions are generating significantly lower shares of GDP: Batken region (4%), Naryn region (3%) and Talas region (3%).

The Chui region is producing the largest share industrial production (42%), followed by, Issyk-Kul region (25%), the city of Bishkek (15%) and Jalal-Abad region (10%). Four other regions have a significantly lower share of industrial production: Osh region (4%), Batken region (2%), Naryn region (1%) and Talas region (0.5%).

The city of Bishkek is attracting the largest volumes of foreign direct investment (40% from all FDI going to Kyrgyzstan), the Chui region is the second attractive for FDI after Bishkek (26% of all FDI) and Jalal-Abad is the third attractive for FDI region (12%). Other regions are significantly less attractive for FDI: Talas region (1.6%), Batken region (1.2%), Osh region (0.4%), Issyk-Kul region (0.8%), Naryn region (0.1%).

The most of investment into major capital is going to the city of Bishkek (41%), followed by Issyk-Kul (16%), Chui (16%) and Jalal-Abad (15%). Four other regions are attracting significantly lower volumes of investment: Osh (6%), Naryn (3%), Batken (2%), Talas (1%).

The majority of inhabitants live in Osh (26%), Jalal-Abad (19%), Bishkek (16%) and Chui (15%). The other four regions have a significantly lower population share Batken (8%), Issyk-Kul (8%), Naryn (5%), Talas (4%).

**The city of Bishkek** has the highest share of GDP among other regions and is also attracting the biggest volumes of FDI and investment into main capital. At the same time, it contributes with a lower share of industrial production in comparison to the Chui region and Issyk-Kul region. It also has the lower share of population in comparison to Osh region and Jalal-Abad region.

The city of Bishkek has the following goals for industrial development: a) introduction of innovation industrial methods, b) creation of capacities for export industries, and c) deployment of cluster for smaller enterprises in the region.

Industry in Bishkek is mainly represented by the processing industry (66%), followed by energy generation and transmission (31%) and water and waste sectors (3%). The processing industry includes food processing (43%), textile (15%), manufacture of rubber and plastic products, other non-metallic mineral products (15%), manufacture of basic metals and fabricated metal products, except machinery and equipment (8%), manufacture of wooden and paper products; polygraphic activity (7%), manufacture of vehicles (4%), other production, repair and installation of machinery and equipment (3%), chemical industry (2%), manufacture of pharmaceutical products (1%), manufacture of electrical equipment (1%), manufacture of machinery and equipment (0.8%), production of computer, electronic and optical equipment (0.4%).

The business in Bishkek is represented mainly by small enterprises (97% of all registered enterprises in the city). Currently in Bishkek 62,6 thousand enterprises are registered, from which 2% are medium enterprises and 1.3% are large-scale enterprises.

Currently the major program for development of Bishkek is the Programs of social and economic development

of the city of Bishkek for 2017-2020 "**City of favorable conditions**". The program integrates the goals and measures of the previous programs for Bishkek<sup>3</sup>.

The first point of growth for Bishkek was already identified. This is the transformation of Bishkek to the regional center for services in the area of information and communication. The program of development of the city includes the following priorities:

- measures to improve investment climate in the city for private national and international investment,
- measures to improve conditions for development of small and medium enterprises, including consultancy support,
- measures of private-public partnerships in realization of infrastructure projects, which lay in the area of strategic interests of the city,
- measures to ensure financing of the city budget and an improvement of the administration of tax collection, also including optimization of income and spending of the budget

Bishkek has nine electricity, water and heat large-scale enterprises, which are employing from 600 to 1.500 people. These enterprises are currently reporting no problems. There are also six large-scale enterprises producing furniture and paper and six enterprises producing metals products. Another six large-scale enterprises are active in the manufacturing of machinery. In construction sector there are six enterprises, which produce components for construction industry. There are eight enterprises in textile sector producing textile and further products. The food processing industry has seventeen large-scale enterprises which produce alcoholic and non-alcoholic drinks as well as juices, traditional drinks, bread and sweets. Two enterprises are producing pharmaceuticals.

Besides of large-scale enterprises there is a great variety of medium scale enterprises which include metallic products (3 enterprises), chemicals (1 enterprise), energy (2 enterprises), manufacturing of machineries and equipment (8 enterprises), construction (4 enterprises), textile (5 enterprises), furniture (1 enterprise), food processing (10 enterprises), coal mining (2 enterprises).

In Bishkek there are several idle enterprises, which are not functioning mainly because of the lack of market for their products as well as the absence of order for the products or financial problems. In manufacturing of machineries and equipment there are five idle enterprises which include "Automash-Universal" for production of construction components from metals, "Computer engineering and means of automation", "Specialized commercial company", "Mashret Capma" and "Deskom". All of these enterprises are in private property and are not working because of the absence of orders.

In construction sector five enterprises are not working, including "Fakel", which is currently closed for renovation works, "Beton Service", "Clay King", "2 Souses" and "Glasses Vitrage", which are not working because of the absence of orders. There are six rubber factories, which are not working also because of the absence of orders. Two textile factories are not working because of the low competitiveness of their

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<sup>3</sup> Bishkek City Development Program "Updated Capital" for 2009-2012 and The program of social and economic development of Bishkek for the period 2014-2018 "City of open opportunities"

production. Six food-processing enterprises, which produce bread, coffee and tea as well as flour, are not working because of the absence of the market and low profitability of their production.

The **Chui region** has historically leading positions in industrial development because of the developed infrastructure and communications. Currently it produces the highest share of industrial production among other regions. It is also second attractive region, after Bishkek, for FDI and for investment into main capital. At the same time, it has a relatively smaller share of population and is the fourth-populated region after Osh, Jalal-Abad and Bishkek.

The Chui region has the following goals for industrial development: a) recovery of industrial potentials, especially for manufacturing industry, b) introduction of innovative enterprises with export orientation, and c) mining industry. The Chui region has following points of growth: Bishkek, Tokmok and Kara-Balta.

The Chui region has reserves of rare earths and gold. It is planned to explore the Cotesay reserve with 20,4 million tons of ore and extraction of 52 thousand tons of rare earth elements. By 2020 it is planned to explore the reserve Kalesai with 9.24 million tons of ore. It is planned to extract 11.7 thousand tons of beryllium per year. It is further planned to explore the Nasonovskoye gold and copper deposits with reserves of 751 thousand tons of ore and extraction of 5,6 tons of gold and 4,6 tons of copper.

The manufacturing industry makes a significant share in industrial production with a biggest part being located in the Zhailynsky region. In this share 57% come to the production of base metals and finished metal products.

The region has potentials for development of non-ferrous metallurgy for gold refining in Kara-Bolta. Further potentials include: deployment of cable production in Kainda, glass and textile industries in Tokmok, sugar industry in Kainda and Shopokov and cement production and construction materials in Kant.

The program of development of food processing and manufacturing industries for 2017-2022 identifies following measures:

- Creation of industrial zones in the eastern and western regions of the Chui region (cities Tokmok and Kara-Bolta).
- Creation of enterprises to process sugar beets,
- Reconstruction of enterprises which are currently not working,
- Organization of logistics centers according to the demands of international regulations,
- Introduction of innovative technologies to increase productivity and potentials for export.

The Chui Region has six large-scale energy enterprises, which are providing heat and gas. These include "Chuigas", "Gasprom Kyrgyzstan", "ETV", "Teplosnabjenie" and Belovodskaya heating complex. Each of these enterprises employs from 269 to 400 people. Some of them are in state property. For instance, "Chuigas" is owned to 100% by the Russian state.

There are also six large scale enterprises in construction sector, including "Interglass" for production of glass, which is owned by foreign investors and employs 886 people, "Kant cement factory", which is also owned to 91% by foreign investors and employs 600 people, "Turbo-Shiffer production", which is producing tubes, is

owned by foreign investors and employs 313 people, "Silikat" which is producing bricks, is in private property and is employing 340 people, "BKZ" which produces ceramic bricks and "Kum-Chagil" which produces concrete. All these factories are reporting no problems.

Three large-scale enterprises exist in the mining sector, including "Altynten" (gold, 983 employees), "Geo Reserve" (processing of gold ore, 250 employees) and "Djunda" (processing of oil, 850 employees).

There are four large-scale enterprises in food processing industry, including "Au" (vodka, 321 employees), "Abdish-Ata" (beer and non-alcoholic drinks, up to 1.800 employees), "Kulikoskiy tort" (sweets, 347 employees) and "Kainda sugar" (sugar, up to 800 employees).

Among middle size enterprises three are in manufacturing of metals and machines, three are in chemical production, three in generation and transport of energy. Construction sector is representing with five enterprises, which produce construction materials and glass and employ between 50 and 130 employee each. There is a wood processing enterprise and enterprise for reparation of machineries. One enterprise for leather products and one for water treatment.

The food processing industry has seventeen enterprises for milk production, eggs and chicken meat, alcoholic products, sweets, beer and non-alcoholic drinks, beer, wine, sausages, flour, vegetables and rice. All these enterprises are in private property and report partly problems such as the absence of the market, aging of equipment and of competitiveness of production.

There are also three medium scale enterprises in mining such for gold extraction as well as for oil mining and processing.

The Chui region has a number of idle enterprises, which are including manufacturing of machineries and equipment. One factory "Alamudunenergy" is producing electro-motors and generators, is in the private property and is suffering from the absence of orders for its production. Another one is "Manasviaservice", which is specializing on reparation of airplanes and is in private property nearby the airport "Manas". The enterprise is suffering from the absence of orders for its production.

There are six idle enterprises in construction sector. The majority of them is in private property and is suffering from the absence of the market, the absence of highly qualified labor force and of financial means.

The four enterprises in textile and leather sector are searching for investors for modernization and reorientation of their production. These are state service for punishment, which is producing clothes and is in the state property. Currently the enterprise is not working because of the absence of demand for such kind of products. Three other ones "Factory Cholpon", "Bakay-Inpak" and "Kara-Bolty-Kilem" are producing textile and carpets. The enterprises are in private property, partly by Kazakh investors, and are not working because of the aging equipment and the low competitive advantages of products in comparison to Chinese and Turkish goods.

There are five idle enterprises in food processing, which include production of beer, of milk products, of sugar and fruits and vegetables. The factories are in private property, partly by Kazakh investors, and are not working because of the lack of financing, the ongoing procedures of bankruptcy and debts (partly towards social funds).

The **Osh region** is the most populated region in Kyrgyzstan (26% of all inhabitants) and also has the third highest share of GDP, after Bishkek and Chui. However, its share of industrial production is one of the lowest (together with Batken, Naryn and Talas). It is also among the least four attractive countries for FDI and for investment into main capital.

The Osh region has the following goals for industrial development: a) Extension of capacities of processing industry, including construction materials, b) Extension of capacities for mining industry with further exploration of coal reserves. The Osh region has following points of growth: Osh, Uzgen, Kara-Suu and Sary-Tash.

The Osh region has coal reserves in the Uzgen field, which is planned to be explored by 2020-2022, Karatub and Kok-Kya, which is planned to be explored by 2025-2030, Beshterek, Chitta and Ascourt to be explored by 2026-2028. The coal will be mainly consumed for electricity generation needed by the cement factories "South-Kyrgyz Cement" in the city of Kyzyl-Kya, "Ak-Say Cement" in Noorat region and Kyrgyz-Chinese cement in the Aravan region.

The Osh region has a number of idle enterprises. The majority of them are in food processing and textile industries. For instance, there are three food processing enterprises including "Osh-Dubek" (tobacco production), "Buuday-Nan" (flour production) and "Altay-Aktyk" (production of national drinks). All three are in private property and are not working since a couple of years because of the lack of financial means. The textile enterprises are "Aravan cotton factory Ak-Bula", "Ak-Altyn", "Jani-Door" and "Pirim-TeX" – all for cotton production as well as "Asli-textile" for sewing production.

Five idle enterprises in the mining sector are all coalmines, which are not working because of the low quality of coal, the lack of market for their products, the lack of financial means and permitting documents. One mine is filled with water. All mines are in private property. There is also one cement factory, which is not working because of the discussions with Uzbekistan on customs capacities and regulations.

The **city of Osh** has planned the following goals for industrial development: a) to become the center for cargo and passengers' transportation within the Fergana valley, b) extension of food processing industry, c) recovery of textile industry and d) creation of capacities for construction materials industry.

The program of development of food processing and manufacturing industry for 2017-2022 identifies following measures: a) reconstruction of enterprises for processing of fruits and vegetables, b) creation of enterprises for processing of meat, milk, fruits, vegetables, and c) creation of regional logistic centers.

On the territory of the city of Osh there are several idle enterprises, such as "Altyn-Kol" for production of construction materials, "Kyrgyz Jiptex" and "Oda-Ug" for production and processing of cotton and leather, which are in private property and are not working because of the absence of the market. Two idle enterprises are in food processing, including "Marko" which produces flour and "Prodoovoshnoi kombinat", which produces vegetables and fruits. Both are not working because of the absence of financial means for reconstruction. Two idle enterprises "Ug mebeli" and "Emerek standard" are not working because of the aging of equipment and the absence of the market.

The **Issyk-Kul region** has the second largest share of industrial production after Chui and the fourth-highest

share of contribution to GDP. It is also quite attractive for investment into main capital and is the second attractive after Bishkek. However, it is among four least attractive regions for FDI. It also has a low share of inhabitants, together with Batken, Naryn and Talas.

The Issyk-Kul region has the following plans for industrial development: a) expansion of capacities of food-processing industry, b) deployment of textile industry, c) reconstruction of existing industrial enterprises and d) deployment of enterprises of mountain industry for exploration of reserves of tin and tungsten (potential of 15 million tons). The Issyk-Kul region has following points of growth: Karakol and Balykchy.

The concept of regional development highlights that due to environmental and climatic conditions of the Issyk-Kul area tourism should become its major point of growth. Agricultural products, especially for the needs of the tourism sector, should become the second point of growth. This will require restoration of irrigation and drainage systems, provision of veterinary services. Further plans exist for exploration of capacities of the cement factory "Kermyen Cement" which will require further deployment of electricity capacities. It is planned to cover the growing electricity demand with coal from the Zhyrgalan coalfield.

The program of development of food processing and manufacturing industries for 2017-2022 identifies following priority areas:

- Creation of enterprises for processing of fruits and vegetables,
- Reconstruction of currently not working enterprises and creation of the logistics center in Balykchy,
- Reconstruction of enterprises for fishery products and processing of potatoes,
- Support of enterprises for processing of meat and milk products

There are three large-scale well-functioning enterprises in the region. Two of them are producing electricity and are employing 274 and 356 people each. The third one is Kumtor, which is mining gold" and is employing 3.350 people.

There are also three medium size heat power stations (from 50 to 204 employees) and one oil products enterprise (120 employees), which are currently reporting no problems in their work. There is also a number of food processing and textile enterprises such as "Ak-Jalga" for milk production (120 people), "Sut-Bulak" for cheese and milk products (80 people) or "Aikoseiko" which is producing uniforms (60 people). These enterprises are functioning well and are not reporting any problems. The "Kurmetcement" in construction sector is employing 150 people and needs new equipment.

There are several idle enterprises in Issyk-Kul region, which are currently searching for investors. For example, the "Issyk-Kul Stroimateriali" is producing construction materials and is not functioning from 2009 because of the lack of financial means and the market. It is currently in private property and is searching for contracts for its production. Another example is "Textile Millenium", which produces gloves for construction works and is not functioning because of the absence of financial means.

In the sector of food processing there are six enterprises, which are currently searching for investors. These are "Intimak" (production of fruits and vegetables), "Key-Es-Ey" (processing of potatoes, not working since 2017), "Balykchiet combinat" (meat and meat products, not working since 2000 because of the aging of equipment and the lack of financial means), "Eray Sad" (juices, not functioning since 2015), "Altyn Dan" (flour products, not functioning since 2016) and "Un Lain" (flour products, not functioning because of the low

competitiveness of its products). All these enterprises are in the private property.

There are also three enterprises in mining sectors, which are currently in private property and are searching for investors. Two of them are coal-mining enterprises, one is oil products. One coal mine is currently going through procedure of bankruptcy, another coal mine is suffering from the aging equipment and is not working since 2017. The oil products enterprise is not working because of the lack of financial means.

The **Jalal – Abad region** is the second largest region in terms of the number of inhabitants after Osh. In terms of contributing to GDP and industrial production, it has the middle position, being the fifth in terms of contribution to GDP and the fourth in terms of contribution to industrial production. It is quite attractive for FDI, being the third attractive region after Bishkek and Chui.

It has the following goals for industrial development: a) further deployment of hydropower capacities, b) development of mining industries, c) creation of centers for processing of petroleum products, d) centers for metallurgy of rare earth materials, e) creation of new industrial enterprises for food processing. The Jalal-Abad region has the following points of growth: Jalal-Abad, Tash-Kumyr, Kara-Kul, Kerben and Kochkor Ata.

The priorities for development for these cities include agriculture, manufacturing and tourism. Hydro energy is considered to be a point of growth for the region, due to abundant resources. Further points of growth are ecologically export potentials of ecologically pure products of animal husbandry and plant growing. The program of development of food processing and manufacturing of Kyrgyz Republic for 2017-2022 foresees following priorities:

- Creation of enterprises for processing of fruits and vegetables
- Reconstruction of food processing enterprises (meat, milk, fruits, vegetables etc.)
- Organization of new food processing industry enterprises with consideration of material. Agriculture and economic conditions

Starting from 2017 there are plans for exploring potentials of the gold-copper deposit in Kourou-Tegerek with balance reserves of 36,5 million tons and potentials for extraction of 39,2 tons of gold and 354,6 thousand tons of copper. Further gold reserves exist in Terekan, Unkurtash and Chaarat. Kassan has reserves of antimony.

The plans for further deployment of hydropower potentials are motivated by growing in the region energy demand, distance to the main hydropower potentials at the Lower Naryn hydropower station and difficult climatic conditions. At the same time the river Chatkal has significant potentials for deployment of hydropower stations.

The region also has reserves of coal in the area of the Tegenek-Mine in Tash-Kumir with the overall potentials of 30 million tons and in the Uzgen basin with the overall potential of 200 million tons. There are plans for exploration of these reserves for own needs as well as for export to China. For this goal it is planned to construct the Kyrgyz-Chinese railway between Jalal-Abad – Arpa – Torugart with a part going to Balykchy and the Kara-Kerchinskoye coalfield.

Energy makes the most significant share in the structure of industry of the region (44%), followed by mining (36%) and manufacturing processes (20%). A minor share is provided by water and waste treatment (0.6%).



The energy sector itself is dominated by electricity generation and transfer (98%), generation and distribution of gas is minor (1.2%) as well as supply with steam and air conditioning (1%). The mining sector includes mainly extraction of metal ores (63%), followed by oil and natural gas extraction (34%), coal (3%) and other minerals (0.5%).

Manufacturing industry is dominated by the manufacturing of electrical equipment (30%) and the food processing industry (20%), followed by manufacture of rubber and plastic products as well as other non-metallic mineral products (14%), manufacturing of basic metals and fabricated metal products, except machinery and equipment (12%) and refined petroleum products (12%), textile and leather (11%), wooden and paper products; polygraphic activity (0.8%) and other production, repair and installation of machinery and equipment (0.6%). The manufacturing of machinery and equipment makes less than 0.1%.

The Jalal-Abad has a number of well-functioning large scale and medium scale enterprises. Several large-scale enterprises are in the area of energy generation, mining but also in the sectors of plastic and rubber products as well as textile and food processing.

The energy sector, including generation of electricity, gas, steam and air-conditioned air is an important employer in the region. The two power stations located in the city of Kara-Kul produce 2.000 MWh and 600 MWh per year and are providing working places for 1.500 and 450 employees. However, their equipment is aging and is requiring renovation and additional financial means. Two electricity transmission operators situated in Jalal-Abad are providing working places for almost 2.000 people. There is also a subsidiary of "Gasprom" in Jalal-Abad, which is employing 1.050 people. The enterprise "MSLZ" is producing electricity lamps in the volumes of 180 million per year and is employing 2.610 people. However, the development of this enterprise is influenced by the decreasing potentials of the market.

In the mining industry there are following enterprises, which are dealing with gold mining: "Kaz Minerals Bozymchak" (750 people employed), "Fuld Gold Mining" (360 people employed), "Vertex Gold Company (260 people employed) and "Ety-Batyr" (325 people employed). These are well functioning enterprises, which are experiencing no problems. There is also the oil processing enterprise "Kyrgyz-Nefte-Gas" which employs 2.100 people and is in need of new equipment.

There are also large-scale enterprises in the construction sector, such as "Stoneprocessing factory" in Jalal-Abad, which employs 250 people and is lacking qualified staff. Two enterprises in textile, such as "Limatex" (1.240 people employed) and "Doma Ata" (250 people employed) are suffering from the lack of financing, lack of qualified staff and materials. In food processing industry there are two enterprises "Kelechek" and "Alay-Kut", which are producing juice and confectionery.

The majority of industrial enterprises in the region are medium size enterprises however. The sector of textile and leather includes 9 enterprises with the number of employees from 50 to 135. A half of them are well-functioning enterprises with no problems. Another half is suffering from the problems like the lack of the market. The construction sector has three enterprises with 50-80 employees, which are well-functioning enterprises. One has a problem of the lack of skilled personnel. There is one chemical production enterprise. There are three confectionery enterprises with 70-80 employees, which are suffering from the problems like the lack of financial means or increase of import taxes on components, which are essential for production at these enterprises. In the mining industry in addition to the large-scale enterprises mentioned above there are three medium scale gold mining enterprises and four medium scale enterprises for extraction and processing

of oil.

The Jalal-Abad has a number of idle enterprises in manufacturing of machines and equipment as well as in manufacturing of main metals and metal products. These enterprises are not working because of the absence of financing means. For instance, "Et Geo", "Dolina Kassana" and "Eventus" which are extracting metal ores and other metals as well as gold are searching for investors. The factory "Jetigen" should produce spare manufacturing details and is not working since 2012 because of the absence of market. There is also one idle enterprise in the oil industry, "South Derrick", which is in private property and is not functioning because of the absence of financing means.

There are several enterprises in textile and leather industry, which are not working because of the absence of financing means and the market. These are the commercial cooperative "Multi-profile agricultural production cooperative" Ak-Pakhta ", "Akaltyn", "Limateks", "Emgekberekesi", "Company Zirvetex". All of them are in private property.

In the food processing industry four idle enterprises were identified: "Alay-Kut" producing wine, "Asret-Aidib" processing corns, "Jandos" producing apple juice and "Mariam" producing flour. All these enterprises are currently in the private property and are not working because of the financial problems, aging of equipment and lack of competitive advantages of their products in comparison to imports from other countries, like imports of flour from Kazakhstan.

**Batken region** has the low share in GDP and in industrial production as well as in FDI and investment into main capital. It also has a small share of population in comparison to other regions.

It has the following goals for industrial development: a) modernization and technical equipment of existing enterprises, b) creation of new enterprises in the area of food processing, c) creation of cluster in the area of mountain industry on the basis of existing enterprises, and d) development of infrastructure necessary for industry such as electricity and gas networks as well as railway transportation opportunities between Batken and Uchkurgan. The Batken region has following points of growth: Batken, Isfana and Kadamzhai.

The Batken region has significant reserves of brown coal (256,8 million tons). Therefore, plans exist to develop the Suluktinsky brown coal deposit (existing reserves of 114 million tons) until the year 2030. Further on, it is planned to construct the thermal power plant in the city of Sulukta with the overall capacity of 75 MWh and generated electricity of 400 million kWh. The project will also include construction of the underground mine in the region.

According to the program of development of food processing and manufacturing industries in Kyrgyzstan for 2017-2022 the priorities for the region are plant growing and cattle breeding. There are three major directions for development of the region. The first one is to identify measures to address the major barrier for development of the region such as isolation from the major transport connections and major points of economy activity of the country. The second one is to identify measures to deal with the unsustainable water usage patterns such as reconstruction and modernization of the irrigation systems. The third one is deployment of manufacturing industry in the region to solve problems with migration.

According to the plan of development of the food processing and manufacturing industry of Kyrgyz Republic for 2017-2022<sup>4</sup> the following measures are planned in the region (being supported by the donor projects and private investment): a) medium size enterprises for processing of fruits and vegetables, b) reconstruction of enterprises for processing grapes, fruits and vegetables in Leilek district, and c) creation of a logistics center in Kyzyl-Kiya.

The region has a number of idle enterprises, which are currently not working for several reasons. Some of these reasons are the absence of materials, of equipment, of financing or aging of equipment. The idle enterprises are in the area of manufacturing of basic metals and fabricated metal products, except machinery and equipment, of manufacturing of machinery and equipment, in food processing, in manufacturing of wooden and paper products as well as polygraphic activity and in mining. The non-functioning mining factories are coal factories, which don't work because of the absence of the market for their production.

Here we bring some examples. The "Kadamjay antimony plant" should produce antimony and its compounds but is not working because of the absence of materials and difficult economic situation on the factory. The factory is owned to 70% by private investors, including foreign investors from Kazakhstan. Currently mini-factory is planned on the basis of existing factory with participation of Chinese companies. The "Kyzyl-Kyi central electromechanical factory" should produce non-standard mine equipment, provide reparation of deep pumps and produce equipment and tools for agriculture but is also not working because it lost the market for its production as before it was producing for the markets of Donbass etc. Currently the factory tries to reorient its production.

Several enterprises in food processing are currently searching for investors to modernize the production processes. These are "Global-Alco" which is producing wine and vodka and is in the private property, "Bachus-South" which produces wine and searches investor for diversification of its production. "ArbetiK" which produces wine and vodka and searches investor for reorientation of its enterprise, "Dan" which produces flour and bakery products and is missing financial means to purchase materials. Also "Kansk Industrial Complex", which produces furniture for schools, is searching for investor for modernization of its production

**Naryn region** has low GDP and low industry. It is also the least attractive region for FDI however is more attractive for investment into main capital. The share of inhabitants is also low.

The Naryn region has the following foals for industrial development: a) deployment of capacities for food processing industry, b) extension of volumes for coal extraction, and c) further deployment of energy generation capacities. The Naryn region has following points of growth: Naryn and Kochkor.

The point of growth for the region is the production of life stock products for export. In this regard, it is necessary to carry out measures to improve the breeding stock of livestock, improve the quality of veterinary

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<sup>4</sup> Plan of activities of the Program for the Development of the Food and Processing Industry of the Kyrgyz Republic for 2017-2022. Paragraph 4.1.1.3.

services, to improve the feed base. It is also necessary to construct meat-processing enterprises. The mining industry is another point of growth due to available potentials. Energy and transit infrastructure are further points of growth.

According to the program of development of processing and manufacturing industries for 2017-2022 the following measures are identified: a) creation of modern sites for slaughtering of animals and for processing of meat and milk products, b) completion of construction of the logistic center in At-Bashi, and c) organization of enterprises for primary processing of wool.

The region has significant reserves of brown coal (399,6 million tons), therefore it is planned to cover the growing energy need of the north regions of the Kyrgyz republic with creation of clusters for coal power generation and exploration of coal reserves in Kara-Keche in 2019-2025. It is further planned to construct the thermal power station with capacity of 600 MWh by 2023 and further extension of capacity to 1200 MWh by 2025. The power station will require an extension of coal extraction from 750 million tons to 1500 million tons per year and construction of the railway from Kara-Keche to Balykchy.

The region has the Dzhetymsky iron ore deposit in the Kochkor region. It is planned to start exploration of this reserve by 2023-2025 with construction of the sorting and briquette factory. Further potentials exist for development of aluminum industry on the basis of nepheline syenites in Sandyk. The plans are to start exploration in the years 2025-2030. There are also plans for deployment of chemical industry in the region.

Such plans require an extensive increase of electricity production, which could be covered with potentials of Upper-Naryn cascade and construction of the Kambaratinskaya hydropower station.

The only functioning large-scale enterprise of the region is a transmission system operator for electricity "Vostokelektro" which employs 698 people. There are also three medium-scale enterprises in electricity generation "Electric Stations" (97 people), transmission of electricity (235 people) or heating station (117 people). In addition, there are two medium-scale enterprises for coal mining (58 people) and for manufacturing of footwear (91 person).

There are two idle enterprises in the textile and leather sector. One is "Shalbar" which is specializing on production of trousers for export to Russia. The enterprise is not working since 2015 despite credits from the Russian-Kyrgyz fund and purchasing of new suing machines because it is requiring further financial means for renovation of the building. Another one is "Aida", which is not functioning from 2006 because of the old technologies and equipment and is currently searching for an investor.

Five idle enterprises in the mining sector are all coalmines, which are in the private property and are not working since the last couple of years because of the aging equipment, termination of licensing or the absence of financial means.

There are also three idle enterprises in food processing industry, which are specializing on mineral water, meat processing or milk products. These enterprises are suffering from the aging equipment, lack of the market for their production or the need for renovation of the buildings. Some of them are not functioning since 1996.

The **Talas region** has the lowest share of GDP and industrial production. It also has the lowest share of

inhabitants and is the least attractive for investment into main capital. However, its share in FDI is the relatively high in comparison to the regions of the same group (with low attractiveness of FDI).

The Talas region has following goals for industrial development: a) extension of capacities for food processing industries, b) recovery of textile and consumer goods industries, and c) exploration of gold reserves in Jerouil (with reserves of 11,5 million tons of ore and extraction of 80,9 tons of gold). There was only one point of growth identified for the region. This is the city of Talas.

The concept of regional development identifies production of ecologically clean plants growth and life stocks for exports. The program of development of food processing and manufacturing industries for 2017-2022 identifies following measures: a) creation of enterprises for processing of beans, b) organization of new enterprises for processing of vegetables, especially tomatoes, and fruits, c) state support for enterprises in the area of milk processing, and d) creation of the regional logistics center.

There is one well-functioning large-scale enterprise in electricity generation "Severoelectro", employing 413 people and one medium-term electricity station "NES" employing 180 people. Besides of this there are three enterprises producing cheese, which are reporting no problems.

There is a number of idle enterprises in the region. Two of them "Tuuk-Jar" and "Kurulush-Kish" are in construction industry are not working because of the lack of market for their production, debts and ongoing bankruptcy procedures. The four other enterprises are in food processing industry including "Egigey" for milk production, "Eldik-Nan" for flour products, "Talas-Dan-Asyk" and "Nur" for flour. All of them, except "Eldik-Nan", are in private property. Eldik-Nan is in municipal property.

During the roundtable workshops in four regions following recommendations were received for socially and environmentally sustainable development in the regions.

### **1. Protection of environment**

There is a need for further development and implementation of environmental protection regulations

### **2. Output justice**

There is a need for further development of regulations on social packages and definition of criteria on social impact assessment and compensation to local communities, which should also provide certainty to investors and decrease potentials of conflicts at local level

### **3. Procedural justice**

Further development of measures and regulation for participatory governance and involvement of local communities into planning of infrastructure projects, especially in regard to mining industry. The measures of participatory governance should be combined with increased level of transparency in the permitting process, especially in mining industry.

### **4. Green economy**

Deployment of renewable energy sources and energy efficiency measures should be facilitated. One of the urgent measures is to decrease import taxes for components, which are needed for renewable energy and energy efficiency projects.

## 4. Key messages

Recommendations were developed based on the results of the workshops in the regions as well as background information provided in previous sections.

During the workshops following barriers and problems for further development of industry were identified: a) absence of state support for start-ups, b) small volumes of production from small and medium enterprises, c) difficulties for realization of industrial production and low export potentials, d) absence or low availability of necessary for industrial development infrastructure, such as electricity, e) low level of support and engagement from municipal and national policy-makers, f) conflicts over land-use, such as the lack of available municipal land for further industrial development, alternative usage of this land or land being in private property, the lack of legal possibilities to transform agricultural land for industrial development, g) unsustainable development of mining industry and conflicts at the local level.

Therefore, the key messages of this chapter are the following:

**1. Connect industrial development with available potentials in the regions and specialization of the regions.** As the review of the regions show there is a great diversity among the regions in terms of available production factors. The level of industrial development among the regions was also increasing during the last years and this should be considered while developing action plan for implementation of the strategy of industrial development. Coordinate the action plan with the Decree of the President of Kyrgyz Republic about realization of the concept of regional policy for the period 2018-2022, which identifies priorities for construction of new industrial enterprises in different Kyrgyz regions.

**2. Assess priorities for industrial development** identified by different regions and develop the action plan for the strategy of industrial development in accordance with these priorities

*Table 1. Priority directions for regional industrial development*

Bishkek	Introduction of innovation industrial methods as well as information and communication technologies, creation of capacities for export industries, deployment of clusters for small enterprises
Chui region	Recovery of manufacturing industry, introduction of innovative enterprises with export orientation and enterprises of mining industry.
Osh region	Extension of capacities of food processing industry (fruits and vegetables, meat and milk) and creation of regional logistic centers, extension of capacities of construction materials, development of mining industry for further exploration of coal reserves
Issyk-Kul region	Expansion of capacities of food-processing industry, including fruits and vegetables, fishery products and potatoes, meat and milk, development of textile industry, reconstruction of existing idle industrial enterprises and deployment of enterprises of mountain industry for exploration of reserves of tin and tungsten
Jalal-Abad region	Further deployment of hydropower capacities, development of mining industries, creation of centers for processing of petroleum products and of

	centers for metallurgy of rare earth materials, creation of new industrial enterprises for food processing (fruits and vegetables, meat and milk)
Batken	Modernization based on new technical equipment of existing enterprises, creation of new enterprises in the area of food processing (meat, fruits and vegetables), creation of cluster in the area of mountain industry on the basis of existing enterprises
Naryn	Deployment of capacities for food processing industry, development of mining industry (coal) and deployment of energy generation capacities
Talas	Extension of capacities for food processing industries, recovery of textile and consumer goods industries, and exploration of gold reserves

**3. Coordinate the implementation of the strategy of industrial development** with existing regional initiatives and strategies, such as the Concept of Regional Development and the Plan of Realization of Measures. Following the Concept of Regional Development, build the implementation of the industrial development strategy on the principles of subsidiarity and decentralization of the decision-making processes. Create capacities at the local governance level for implementation of the industrial development strategy.

**4. Start a pilot program in three or four main regions** instead of simultaneous development of all twenty points of growth. Select 3-4 priority points of growth based on careful analysis of potentials for industrial development in these areas, which should be based on analysis of on-going initiatives, stakeholders' engagement and participatory governance. These pilots would provide evidence and recommendations how to scale up the initiative to other regions. The pilots could leverage on on-going initiatives such as Smart City. Based on the received evidence from pilots, for the remaining areas it will be necessary to finalize strategies focused on point of growth, which are currently missing. Additional analysis of the specialization of these regions should be conducted with a special focus on connections to regional markets and opportunities to tap into the regional integration processes at the national level.

**5. Ensure that implementation of pilot program creates drivers for socio-economic development in the regions.** Orient implementation of the strategy towards utilization of the locally available resources and production factors in short-term perspective. In the long-term perspective specialization of each region should be based on the historical specialization of the region, availability of local natural resources, geographic conditions and availability of industrial infrastructure.

**6. Revitalize non-functional industrial enterprises**, which can be based on development of business plans, first, with detailed evaluation of problems in the region. It can also include the development of a system of monitoring of rentability of enterprises and for planning of donors' support, including inventarization and assessment of enterprises according to their economic activity, quantity of products and other indicators. Then this can be followed by implementation of necessary measures to attract private investment into modernization of non-functional industrial enterprises and combined with technology and knowledge transfer for modernization of non-functional enterprises and introduction of measures for diversification of production in accordance to demand on domestic and international markets. The revitalization of idle enterprises can be combined with identification of measures and tariffs, which are compatible with regulations of EAEU market and the ways, how import taxes could be reduced for equipment,

which is needed for modernization of enterprises. This would allow decreasing the costs of equipment, which is needed for modernization of enterprises,

**7. Support industrial start-ups in the region,** which can include educational and awareness-raising support, on the first hand, for different groups of stakeholders such as young people, women or entrepreneurs. The support should be based on the increased availability of capital, which can include financial support through regional funds (such as the Fund of Development of Issyk-Kul region with financial means from Kumtor) and availability of credits with attractive conditions.

**8. Support enterprises in the regions with exports potentials,** which required further increase of potentials of regional development programs (such as “Financing of agriculture”, “Development of export” etc.) and creation of regional centers for development of business, including integrated marketing approach for realization of production and creation of Kyrgyz trademarks. The feasibility of the creations of clusters in different industrial sectors and of special industrial zones with available infrastructure, including logistic centers, certification laboratories to increase potentials for exports should be discussed. Measures should be taken against illegal imports of products from neighboring countries, which influence potentials on the market for domestic products. The measures should also include more detailed control on the borders and implementation of unified standards for import customs codes.

**9. Deploy in the regions infrastructure,** which is necessary for industrial development such as roads, telecommunications and reliable electricity supply. Recommendations on transport capacities include further construction of railroads as well as the decrease of tariffs for transportation via rail roads. There are also recommendations for further deployment of renewable energy sources, especially small hydropower stations, and energy efficiency measures to guarantee reliable electricity supply needed for industrial enterprises. The expansions of electricity generation capacities based on renewable energy sources should be combined with further expansion of electricity transmission and distribution grids, including upgrading of existing capacities and construction of new ones.

**10. Ensure implementation of regulations to protect environment,** as well as to address **principles of procedural and output justice.** Recommendations from the roundtable workshops allowed collecting recommendations on further development of participatory governance measures to facilitate involvement of stakeholders at all levels into implementation of industrial development strategy and discussion about the details of industrial projects.

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