

Working paper

Industrial Development of Kyrgyzstan: Recommendations

Nadejda Komendantova, Elena Rovenskaya, Love Ekenberg, Nikita Strelkovskii, Sergey Sizov, Elham Sedighi, Anastasia Stepanova, Nurlan Atakanov, Uran Chekirbaev, Nurshat Karabashov, Zalyn Zheenaliev and Fernando Santiago Rodriguez

WP-18-010

October 05, 2018



Approved by:

Name: Albert van Jaarsveld

Program: Director General and Chief Executive Officer

Table of contents

Acknowledgments.....	3
1. Introduction	4
2. Selected international best practices.....	7
3. Recommended policies and actions for Kyrgyzstan	12
4. Pathways to different futures: How do we get there?	22
5. Responsible organizations.....	32



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).
For any commercial use please contact repository@iiasa.ac.at

Working Papers on work of the International Institute for Applied Systems Analysis receive only limited review. Views or opinions expressed herein do not necessarily represent those of the institute, its National Member Organizations, or other organizations supporting the work.

Acknowledgments

This report is the product of joint efforts of the Research and Industrial Policy Advice (RPA) Division of the United Nations Industrial Development Organization (UNIDO), the International Institute for Applied Systems Analysis (IIASA) and the State Committee for Industry, Energy and Subsoil Use of the Kyrgyz Republic. It has been developed within the context of the project "Strategy of industrial development of Kyrgyzstan", funded by the Russian Federation.

More specifically, under the overall supervision of Mr. Michele Clara, Senior Coordinator, RPA-UNIDO, the team that compiled the report consisted of experts from diverse organizations as follows:

- Dr. Fernando Santiago –project manager (RPA-UNIDO);
- 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);
- Mr. Nurshat Karabashov, Mr. Nurlan Atakanov, Mr. Uran Chekirbaev and Mr. Zhalyln Zheenaliev (senior experts from Kyrgyzstan).

Special acknowledgment is to Mr. Alymbek Orozbekov and his team at the State Committee for Industry, Energy and Subsoil Use for their continued support during project implementation. Mr. Marat Usupov and his team, UNIDO representative to Kyrgyzstan, facilitated in-country operations and contacts to Kyrgyz stakeholders. Appreciation for inspiring discussions also goes to UNIDO colleagues Mr. Victor Zagrekov, Ms. Olga Memedovic, Mr. Rana Singh, Mr. Nobuya Haraguchi, Mr. Anatoly Balovnev and others.

Significant inputs for the production of this report were received from members of a Critical Stakeholders Group integrated by senior representatives from Kyrgyz government and Kyrgyz private sector organizations and participants at round tables held in Bishkek, Osh, Karakol and Jalal-Abad. The report also benefitted from the feedback of the Steering Committee members, which have been coordinating the implementation of this project. Special thanks is to Kyrgyz experts who were generous with their time and expertise during the interviews Ms. Begaim Esenkulova, Mr. Kylychbek Djakypov, Mr. Asylbek Chekirov, Mr. Eldan Usubakunov, Mr. Iskender Sharsheev, Mr. Aibek Kadyrov, Mr. Farhad Pakyrov, Dr. Talaibek Koichumanov, Mr. Ekmat Baibakpaev, Mr. Alaibek Obozov, Ms. Olga Kan and Dr. Roman Mogilevskii.

Finally, the production of this report would not have been possible without the much appreciated financial support of the Russian Federation and the encouragement of Mrs. Vera Khutorskaya, Counsellor, Permanent Mission of the Russian Federation to the International Organizations in Vienna.

Industrial Development of Kyrgyzstan: Recommendations and Responsible Bodies

1. Introduction

Development is a holistic process intimately connected to governmental reforms, educational improvement, trust of investors and the general enhancement of welfare at large. Governments are responsible to effectively manage resources and implement sound policies and regulations, to establish and consolidate efficient institutions and facilitate and govern interactions among them. Governments are also mandated to maintain macroeconomic stability and to foster favorable conditions for industrialization and external competitiveness.

Frequently disregarded in development strategies, particularly of least developed economies, is that a pressing issue facing the global community is how to ensure future global sustainable development and growth within safe and fair constraints for key natural resources and environmental processes regulating various ecosystem and resilience mechanisms. While development strategies may consider variables such as fair production and distribution mechanisms in terms of equity and inequality, they often fail to integrate applications, models and scenarios for sustainable development which integrate socio-economical, technological, environmental and climatological aspects in a single consistent process. Environmental resource management is further complicated by the multi-sectoral character of many decisions.

Many opportunities for the industrial development of Kyrgyzstan stem from its natural resource base and location in the proximity of large and growing markets as well as from the current geopolitical and economic trends including regional integration processes. Modest competitive advantages stem mainly from its existing education base, low labor and other input costs, a moderate inflation rate and some aspects of the business climate. In principle, these factors put the country in a favorable position since its current income level provides (at least latently) comparative advantages in labor-intensive industries. Furthermore, a reduction of the informal economy, optimization of the tax administration and adoption of tax stimulus measures while cutting down on government expenditures are envisioned.

Administrative and legislative efficiency is thus a key issue herein. Significant challenges affecting the institutional system in Kyrgyzstan include insufficient transparency and accountability, poor enforcement of property rights, lack of judicial independence and too high burden of governmental regulation affecting the business development climate. Reforms leading to the reduction or modification of excessive rules, regulations, licensing requirements and the streamlining of bureaucratic procedures should help to improve development prospects with increased transparency in all relevant processes. Current initiatives around e-governance and digital government can have an important role as instruments for financial accountability and as part of systems to monitor overall economic performance. An enhancement of taxation systems should take business interests into consideration, without compromising the situation of the public society. An important lesson is that introducing mechanisms for the involvement of different stakeholders –including civil society organizations- is vital for conflict reduction and trust in general. This allows for increasing transparency in decision-making processes, facilitating knowledge exchanges across the local and regional

levels. Participatory governance usually increases the general level of trust on governance institutions and all branches of power.

To create societal infrastructures, with e-Government services, cloud technologies, digital platforms, cyber security, data mining and analytics and so on, the internal market must be strengthened under the programme Digital CASA – Kyrgyz Republic. At least initially, the main areas for development of digital technologies are digitalization of the governance sector, such as administrative procedures, as well as providing access to digital technologies to population and learning from international experiences in the use of e-Government. Implementation of digital technologies should also facilitate deployment of renewable energies and measures of energy efficiency as well as mitigation of natural hazards and management of natural disaster risks.

The manufacturing industry usually acts as the engine of growth and manufacturing are intimately interconnected with other services. A common idea is that strengthening the manufacturing-services nexus should lead to new opportunities to tap into strong backward and forward linkages of many manufacturing industries, and to bring spillovers to other parts of the economy such as business-related services. There is a large set of instruments for innovation stimuli, such as open innovation and quad helix models, digital labs, free economic zones and Industrial parks, etc., that would assist in addressing those opportunities. Success of such initiatives normally requires involvement of a broader group of stakeholders, while the engagement of end-user in the innovation process affects how well adapted new processes can be put into practice.

Kyrgyzstan has a small and open economy and is rich in mineral resources, where gold mining is the dominant source of income, but has negligible oil and natural gas. Re-export of products of Chinese origin has been playing an important role but will probably decline in a near future. Other industries are stagnating, with the exception of some non-metallic products, as well as food products, including beverages and tobacco products. The country has a large inflow of remittances and receives financial aid and loans from international donors and tax evasion is reducing the state budget income.

Kyrgyzstan's industrial structure is not diversified and is restricted to limited sectors such as agriculture, natural resources and some manufacturing industries, where the latter are low-technology, low innovation and comparatively low value-added activities like textiles. Many firms still operate outdated and inefficient production technologies and limited access to external funds strongly decelerates the shift to more efficient, productive and expansive leading-edge production technologies. The advantage of low labor costs is eroded by low labor productivity. The managerial and technological practices and skills are also often insufficient.

The development of small and medium-sized enterprises (SMEs) has been limited and very little has been invested in the manufacturing sector due to various reasons, but to a large extent due to an unfavorable investment climate, high interest rates and volatile exchange rates. The latter is an effect of a political volatility and corruption.

Kyrgyzstan is currently lacking necessary legal and institutional frameworks and policies to accelerate industrial growth and has a very weak business-enabling infrastructure due to lack of inter-ministerial/ inter-agency coordination, insufficient financial structures, limited quality of education and access to skilled workers and managers as well as poor infrastructures. Despite high enrollment rates at primary, secondary and tertiary education, the quality of education at all levels is low, which also affects the management structures

and competencies. During recent years, however, there has been some modest reinvigorating of manufacturing.

Abundant water resources allow for a low-cost irrigation of agricultural land, but water quality is deteriorated by chemical and organic pollution. Climate change is predicted to have serious effects in decreasing water levels and threaten the country's industrial potential due to a large dependence on hydropower. Furthermore, the water administration is characterized by an inefficient management structure.

The main challenges for Kyrgyzstan are in short:

- There is an unfavorable investment climate, due to regional instability, high interest rates and volatile exchange rates and other factors.
- The highly volatile and undiversified sources of income make the economy vulnerable to external shocks
- The industrial sector is stagnating, and the technology level and the level of innovation are both extremely low and is particularly low in the manufacturing sector.
- Despite the high enrollment rates, the quality of education at all levels is low, which also affects the management structures and competencies.
- The unemployment rate is high among young people with a markedly higher rate for women.
- The quality of education and access to skilled workers and managers are limited.
- There is a lack of necessary legal and institutional frameworks and policies to accelerate industrial growth and has a very weak business-enabling infrastructure.
- Tax evasion is reducing the state budget income and corruption rate is high.
- The deteriorating quality of water, and land resources is linked to problems of accountability and capacity and government decision makers in charge of natural resource management contribute to environmental deterioration through poor management decisions.

There are some beneficial features of the country. The distribution of income is remarkably equal in the society. The democratic development has been progressing over the years. Several reforms have taken place during the last years to improve the work of governance institutions. However, these reforms did not address the methods of work of the institutions or the existing mechanisms of cooperation between local, regional and national governance levels. Neither have they improved the cooperation between different ministries and other decision-making entities and the communication between national and local institutions remains weak. Several strategies that were initiated in 2000ies were only partly successful and there have been difficulties in setting and keeping policy priorities. There is also a lack of technical expertise as well as a lack of influence on decision-making processes by the concerned groups. Furthermore, the decision-making processes have been characterized by short-term perspectives and ad-hoc practices.

In April 2018, the Development Program of the Kyrgyz Republic "Unity, Trust, Creation" for 2018-2022 was inaugurated. The Program is focused on several issues, where to reform goods markets in the main economic sectors is an important part. The idea is furthermore that the energy sector could benefit substantially from investment and subsequently could become a driver of growth. In order to stimulate the development of entrepreneurial initiatives, the Government will pursue a liberal fiscal policy in the next five years, will simplify taxation and customs regimes and will work toward a properly developed mechanism for protecting investments.

Furthermore, a number of regional and sector-specific policies have been adopted in Kyrgyzstan recently, for instance:

Concept of Regional Policy of the Kyrgyz Republic for 2018-2022 has the main goal to ensure an accelerated socio-economic development of regions and includes support initiatives. The document suggests migrating from a sectorial development focus to an integrated model of regional development based on identity, specificity and specialization of each region. An important step will be the transition from the dispersion of investments to their concentration via strategically selected national projects to plan and implement a number of regional clusters. *Concept of Development of the Fuel and Energy Complex in the Republic of Kyrgyzstan until 2030* aims to underpin the social and economic development of the country and its regions through a reliable energy supply to consumers. The concept pays attention to improving energy efficiency, reducing the technogenic impact on the environment, solving social issues and strengthening of international cooperation and financial recovery of the industry.

Overall, the government development efforts are commendable, but Kyrgyzstan is still facing severe economic and development challenges in virtually all sectors. Kyrgyzstan nevertheless has large opportunities to transit to a more efficiently industrialized economy. As a non-dramatic observation, Kyrgyzstan needs to produce higher-value commodities in order to eventually achieve industrial diversification in the manufacturing sector, which should stimulate long-term economic growth, while continuing the commendable work with preserving democratic structures and institutions.

2. Selected international best practices

In this section we present selected international best practices concerning industrial development in developing countries clustered in three areas: Legislative and Governance Development, Educational Development and Sustainable Resource Management.

1. Legislative and Governance Development

a. *Improvement of existing governance mechanisms*

- Reduction or modification of excessive rules, regulations, licensing requirements impeding the development, namely, the reduction of the number of bureaucratic procedures and their costs, increase of transparency through implementation of e-governance reforms
- Change of the governance practice from the ad-hoc based to a more long-term capacity building
- Enhancement of taxation, court administration and statistical capacity at the national level
- Enhancement of systems of financial accountability and monitoring systems of its overall economic performance and production and delivery of services in the public sector

b. *Creation of mechanisms of participatory governance*

These mechanisms will allow involvement of different stakeholders as well as civil society organizations. Such mechanism will allow to increase transparency of decision-making processes as well as to involve expertise and knowledge from the local and regional levels, thus, improving the outcomes of the decision-making process. The participatory governance will also help to increase the level of trust from the side of people to the governance institutions and all branches of power.

- Ensure the strengthening of citizen participation and civil society organizations to guarantee, clear, transparent and accessible information and better inform decision-making, including the use of, including through e-participation and similar mechanisms
- Harmonize existing regulations regarding participatory governance
- Develop mechanisms for coordination of major legal initiatives developed at the national governance level with institutions at the local governance level, to ensure that the increased level of responsibilities at the local governance level is also combined with available resources
- Support capacity for cross-sectoral, integrated and inclusive decision-, policy- and law-making, at all levels to establish mechanisms of participation especially in decision-making processes on infrastructure, which affects local communities in terms of impacts on human health or environment

c. Promotion of anticorruption initiatives

These improvements include various means to prevent corruption and promote the transparent and sustainable management of public goods and financial and natural resources:

- Support of anticorruption bodies
- Enhance transparency in the efficiency and recruitment of public servants
- Accountability in matters of public finance
- Significant regulation of business and private financial transactions
- Implement an external audit system reinforcing expenditure control by exposure against misspending and corruption
- Impose mechanisms to review and act on the results of audits and to ensure that follow-up action is taken to remedy problems identified
- Impose mechanisms for agencies to exchange information about companies, contractors, or consulting groups identified as having participated in corrupt behavior

d. Assistance to the public institutions' efficiency

- Promote a series of e-government initiatives to enhance public institutions in a wide variety of sectors to become more effective, responsive and accountable
- Strengthen local government institutions and agencies to ensure greater responsiveness and accountability for services under a coordinating body
- establish a committee of legal experts to review the established legislation and draft the changes necessary to improve the regulatory frameworks
- Introduce a comprehensive legal system for public and private procurement at both national and local levels of government
- Establish a body for procurement support, including technical assistance, procurement experts with a strong stakeholder engagement as well as a massive training of procurement personnel

Educational Development

From a global perspective, university and colleges are often early adopters of the view that educational institutions have a major role to play in moving the world towards more sustainable pathways. Universities can thus be used as strong parts in strengthening international and regional cooperation, intellectual as well as socio-economic development. Needless to say, education is a central issue for combating poverty and improving health and well-being, and educational institutions can be competent driving forces in the building of knowledge societies and in the transition to knowledge economies. The baseline is that education is a

central issue for combating poverty and improving health and well-being the present education system and the educational institutions must be developed and improved the Government has to increase investment in public education.

A major issue is that of revenue streams. Looking at research, most grant givers are international and not seldom require cross-border cooperation. The change here is that the funding from these traditional sources of research money follows the economic cycles of society and will fluctuate. Universities will thus have to broaden the source of research money to other sources such as industry, government or a public body, private donations, industrial co-funding, corporations, and so on. for external funding a) in the form of joint programmes with government and other agencies; b) in the form of cooperation with research institutes, locally and abroad; and c) in the form of commissioned research, again locally and abroad.

Internet connectivity and social media are major catalysts for change, transforming learning and skills development. E-learning and modern networks of universities are one model to alleviate the situation, a model that promises to be able to cost-efficiently transfer teaching abilities to under-served areas. Utilize the rapid changes in technology grown to be a part of every student's life through social media, video, and other forms of technology support, to develop platforms for large-scale education and examination;

a. Improvement of existing curricula

- Establish a steering committee and a secretariat and perform a need analysis and reform curricula, with various stakeholders, including a substantial representation from the industrial and public sectors, so that they are relevant to local and regional needs and development plans as well as competitive on a global market
- Include education in rate increases, inherent weakness in economies and slowdowns, geopolitical conflicts and global health issues posing major concerns primarily regarding injustice, poverty, economic growth, transparency, project management, governance, open data, sustainable processes, rationality, democracy and equity to foster the new generation of managers and leaders
- Utilize education and research to promote behaviors and lifestyles required to realign societal development and find solutions to the region's economic, social and environmental challenges
- Establish programs to produce expertise in environmental management, sustainable economic development, population, and related fields

b. Improvement of relevance

- Involve the government (at all levels), foundations, and industry in supporting university research, education, policy formation, and information exchange in environmentally sustainable development.
- Adapt and develop high-quality, but large-scale, programmes and courses on various levels, including vocational education, and for different target groups of relevance, including management, decision-making and risk analytical competencies
- Stimulate universities to engage in education, research, policy formation, and information exchange on population, environment, and development
- Expand work with nongovernmental organizations and establish partnerships with primary and secondary schools to help develop their capability
- Globalize and internationalize institutions of higher education to attract good students and future entrepreneurs and employees and develop strategic collaborations with partners

c. Technical development and utilization

- Develop technical platforms adapted to the needs and support cost-efficient technological development using massive-scale blended learning in various formats
- Educate lectures at different levels to efficiently develop and utilize these platforms

Indicators for monitoring should focus on performance in the education sector. Obvious indicators should secure the academic standards of awards, assuring students, graduates, and the public that the level of achievement required for those awards meets or exceeds national, international and relevant professional requirements and is at least of the same quality to and scope of those expected by other Higher Education institutions in the region. Furthermore, curricula must be up to date and in line with state-of-the-art expectations for the subject in question to assure that students receive appropriate and effective forms of teaching, assessment and support as well as are provided with learning opportunities to enable them to attain the academic standards and develop the skills required for their award. To be measurable, expectations and learning goals must be rigorously specified and teachers must be able to structure their lessons around the learner's needs to accomplish the goals. This also simplifies the comparability with other educational institutions according to common outcomes and provide a basis for improvement as well as simplify the determination of credits. Furthermore, except for employment rate and salary levels in different sectors qualitative societal relevance and impact can be measured, such as, relevant knowledge and skills, responsible citizenship, self-confidence, critical thinking, sense of responsibilities, social and civic engagement, etc.

Sustainable resource management

One of the most pressing issues facing the global community is how to realize future global sustainable development and growth within safe and fair constraints for key natural resources and environmental processes regulating various ecosystem and resilience mechanisms. Issues here include upcoming interest. At the same time, there is a general lack of applications, models and scenarios for sustainable development, integrated socio-economical, technological, environmental and climatological aspects, even less so when variables such as fair production and distribution mechanisms in terms of equity and inequality are considered. Environmental resource management is further complicated by the multi-sectoral character of many decisions.

Solutions to the abovementioned problems will undoubtedly require large scale quality assured educational development also in a shorter-term perspective, cf. the several goals under the topic of higher education.

a. Institutional frameworks

- Regulate decision-making processes, policies and procedures for sustainability which encourage participation by all those affected by the decisions made
- The regulatory framework should include guarantees for private investment and regulation of state-private sector relationships.
- Establish a regulatory framework for environmental cost-benefit as a major consideration in decision making with regard to procurement decisions, the prioritizing and resource use as well as in waste disposal practices

- The institutional framework for deployment of RES should be improved and a state authority, which would carry responsibility for attracting investment into RES and dealing with administrative procedures.
- Establish a transparent accounting framework for natural resource decisions based on service level, cost efficiency and environmental impact and estimate more precisely the trade-offs between natural resources and economic development and take adequate mitigation actions based on those analyses

b. Planning and structural reforms

- Integrate existing power development plans from development cooperation and other entities
- Reforms are necessary in the tariff system for levelized costs of electricity in order to guarantee economic competitiveness of renewable energy sources
- Integrate environmental, social and economic considerations in all aspects of management decision-making to address and include the social and economic dimensions of sustainability; this should include implementation of the energy efficiency measures, rational utilization of the water resources and development of industry without damage to environment and exhaustion of natural resources
- Implement measures for reduction of energy losses and implementation of low carbon energy generation technologies
- Encourage the development and adoption of modes for progressively reducing consumption of non-renewable and energy resources, and that eliminate discharges of toxic substances and wastes to the ecosphere
- Establish a central authority for water management, deterioration and pollutions, including water sewage system management and implement measures for water management for house-holds, agriculture, manufacturing and mining

c. Technical improvements

- Rehabilitate/upgrade existing generation capacity, heating system, street lighting, introduce energy accounting, thermal refurbishment and others energy efficiency measures
- Establish a strategic program for introduction of new electricity generation capacities, construction of new hydropower plants, solar-powered facilities and heating power stations as well as a short and middle term tariff policy
- Develop measures, similar to the water areas for processing of waste, in particular for the mining industry, frequently being located in fragile ecosystems

Indicator sets could be specified by aggregating relevant measures. For instance, the transition of economy, the indicator of efficient use of natural resources and the indicator of progress and well-being as well as social inclusiveness. The green growth service levels for industrial or agricultural water and energy supply users could be based on physical measures, industrial users, house-hold and recreational users, total health risk, ecological habitats and the number of viable ecosystems exposed to risks in the habitat area. In addition, these factors should be measured over time, to estimate trends in the resource quality and sustainability.

3. Recommended policies and actions for Kyrgyzstan

This chapter summarizes the recommendations from the *Industrial Development of Kyrgyzstan Working Papers series* in the form of a comprehensive portfolio of policies and actions to help move the industrial base of Kyrgyzstan to a qualitatively new level. Because the highlighted policies and actions have synergistic effects, while the implementation of individual measures will have positive effects, a coordinated approach is essential to achieve noticeable progress. The following 19 synthesized interconnected policies and detailed recommendations aim to remove barriers, create an enabling environment and put up incentives for the industrial development of Kyrgyzstan over the short to medium and to long-term.

1 Improve the accessibility to and affordability of finances for business

Attracting a diversified portfolio of domestic and foreign investment is a pre-requisite for the industrial development in Kyrgyzstan. Companies have options to use own, attracted or borrowed resources for investment and the task of the government is to ensure the most favorable conditions for all three options. The following measures are recommended:

In the **short and mid term**:

- Radically improve the investment climate in Kyrgyzstan; support business in looking for attracted or borrowed investment by the creation of a fund to support the preparation of projects;
- Develop the Public-Private Partnerships (PPP) system to facilitate knowledge and risk sharing, in addition to enhancing the transparency, accountability and feasibility of investment projects; develop and promote concession mechanisms as an efficient way to transfer the mineral deposit development to investors;
- Introduce the principles of corporate governance in the work of government institutions to make the allocation of the budget credits more efficient;
- Further develop the banking system, promote new payment systems; develop domestic and foreign borrowing, the system of loans and lines of credit; decrease interest rates and extend the payback periods; strengthen the insolvency framework;
- Soften credit requirements and the conditions for the verification of the loan purposes used by development funds;
- Prioritize the task to create attractive conditions for investment in manufacturing clusters in regional development programs;

In the **long term**

- Develop the insurance market and the stock market;
- Improve the country's image among potential investors.

2 Decrease investor risks

The following actions are recommended to reduce the risk that domestic and foreign investors have to accept and hence to increase the flow of investment into key economic sectors:

In the **short and mid term**:

- Reduce the procedural and administrative burden onto investors by introducing a "single window" system to enable investors to obtain the entire spectrum of consultative, legal and administrative services from a single governmental body;
- Continue due diligence in the implementation of initiatives endorsed by Kyrgyz authorities regarding the fight of corruption;

- Enhance support to investors, notably the protection of minority investors; improve government guarantees for returns on investment (both domestic and foreign), inter alia, via a system of investment packages;
- Enhance property rights protection; remove the risk of expropriation without a fair compensation; optimize the rights of foreign investors to own and use land; optimize the rights of foreign investors to own and lease entertainment facilities and infrastructure;
- Continue with implementation of existing bilateral and multilateral investment treaties on protection of investors and trade; enforce their implementation and conclude new treaties where necessary;

In the **long term**:

- Improve the country's image among potential investors;
- Develop and ensure continuity of state measures to stimulate investment.

3 Improve the regulatory and administrative risks for business

The following is recommended to make doing business less cumbersome and hence to incentivize the business development:

In the **short and mid term**:

- Reduce the procedural and administrative burden onto companies including paying taxes and other mandatory payments; remove excessive checks by fiscal and law-enforcement bodies;

In the **long term**:

- Continue due diligence in the implementation of initiatives endorsed by Kyrgyz authorities regarding the fight of corruption;
- Reduce the level of the shadow and informal economy;
- Improve the efficiency of the judiciary and the quality of judicial processes, in particular, in what concerns enforcing contracts;
- Make public services more efficient and transparent, notably, via a wider use of information and communication technologies and the e-governance reform, including the electronic inter-agency interaction, automation of public services, provision of documents for the registration of legal entities in the electronic form, a single electronic database of the notary documents, and electronic commerce.

4 Increase the quality of institutions and enhance trust in their operation

The following is recommended:

In the **short and mid term**:

- Improve government bodies' efficiency in dealing with investors' complaints;
- Optimize the Kyrgyz legislation on land allocation; enhance the reliability of the use of water and land; reduce the excessive bureaucracy involved in land acquisition;

In the **long term**:

- Overcome the distrust in the justice system among the domestic business community by ensuring the continuity of policies and predictability of the regulatory system; improve public awareness of the functions and duties of the courts;
- Continue due diligence in the implementation of initiatives endorsed by Kyrgyz authorities regarding the fight of corruption and enhanced governance of the industrial sector; enhance the transparency of the selection of public tender executors;
- Improve the position of Kyrgyzstan in global credit ratings.

5 Support producers in export-oriented sectors and sectors with a potential of import substitution

The following is recommended:

In the **short and mid term**:

- Incentivize investment in export-oriented sectors; address issues of social and public acceptance of infrastructure projects;
- Stimulate manufacturing rather than export of raw materials; adapt the export potential to external markets' demands, including the EAEU's;
- Ensure the high quality of Kyrgyz goods; create a quality infrastructure in accordance with the EAEU and international standards; enhance the procedures of testing, inspecting, certification and approval;
- Enhance the non-financial support of exporters including the information, communication, institutional support, inter alia, create a joint information database for those involved in foreign trade activities; enhance marketing of Kyrgyz products abroad via mass media and specialized events; develop specialized media resources;
- Conduct assessment and feasibility of existing experiences and planned measures to promote investment in Kyrgyzstan; develop further possible solutions to strengthen implementation of measures which foster a more rational use of resources, reduce risks for investors or increase efficiency of interventions to hook local firms into value chains
- Explore the potential of special economic zones (SEZ) and industrial zoning in regions to deliver multiplier effects for regions' development and elaborate a feasible strategy on boosting their potential;
- Develop a regulatory and legislative framework for industrial land use; study best practices and introduce a policy for the industrial land intensification to use lands and resources more efficiently, reduce impact on the environment, and to use transportation infrastructure more efficiently;
- Financially support companies and priority sectors, also through PPP projects and a specialized fund to support export;
- Conduct feasibility study of possibilities for revitalization of idle enterprises, including their modernization and assessment of measures to attract private investment; conduct assessment of impacts from idle enterprises on socio-economic development of the regions and their potentials in different regions according to available resources and potentials to fill niches on domestic market as well as potentials for export

In the **long term**:

- Make use of and enhance the competitive advantages of Kyrgyzstan; improve the labor and capital productivity; support labor-intense production; develop food processing, hydropower, light industry and tourism sectors;
- Promote the modernization of the production means and facilitate the introduction of new technologies;
- Develop the human capital; increase the availability of skilled labor for the strategically important sectors;
- Facilitate the formation of new production and manufacturing chains, from extraction of raw materials to deployment of final products.

6 Embed into regional and global value chains

The following is recommended:

In the **short and mid term:**

- Improve efficiency of procedures related to trade across borders; modernize and renew checkpoints on the state borders;
- Deepen and take advantage of the integration with the EAEU; optimize the transition to the full-scope EAEU common tariff policy;
- Develop the trade infrastructure; create a chain of the "buffer" infrastructure including laboratories, logistical centers, slaughter shops, processing enterprises and transport companies; create trade-logistical centers to concentrate, calibrate, sort, store and perform primary processing of agricultural products, including organic ones;
- Enforce and enable the compliance of Kyrgyz products with the EAEU technical and sanitary and phytosanitary (SPS) standards; ensure the application of the common rules to define the country of origin within the EAEU; ensure the application of the common commodity nomenclature of economic activities within EAEU; enhance the equipment of the border checkpoints and certifying laboratories; ensure the removal of the remaining veterinary control on the Kyrgyz-Kazakh border;
- Strategically use the opportunities offered by the EAEU development institutions (Russian-Kyrgyz development fund, Eurasian Development Bank, Eurasian Fund for Stabilization and Development) to foster the export offerings and its quality;
- Support development of sectors expected to generate the maximal benefits from the EAEU integration (Machinery, Transport and communications Production of oil products, Production of chemical products, Production of rubber and plastics and other non-metallic products, and Metallurgy)
- Take advantage from the creation of new common EAEU markets, including
 - the common electricity market: enhance the electricity production, notably via hydropower, and modernize the corresponding infrastructure
 - the common market of oil and oil products: re-invigorate existing refining capacities
 - the common market of gas: radically increase the gasification level
 - the common market of transport services: improve the quality of transport services
 - the common market of excisable goods: reduce the dependence on imports from third countries and benefit from lower prices
 - the common financial market: benefit from more services available
 - the common market of medicines: reduce the dependence on imports from third countries and benefit from lower prices
 - the common market of services: enhance the export of services to the EAEU
- Use the evidence base and business circles' opinions to inform the negotiation position; actively participate in decision making processes in the EAEU, also in what concerns the enhancement of cooperation and integration of the EAEU with third countries; develop the B2B dialogue within the EAEU and support Kyrgyz businesses in their strive to impact EAEU policies

In the **long term:**

- Develop economic and trade policies adaptively, explore possibilities to enter new and enhance the presence on already occupied markets; actively explore possibilities to engage in emerging economic integration blocks and cooperation schemes based on expected economic benefits; maintain and further ties within CIS and SCO;
- Improve the coordination and orientation to targeted actions of the institutions focused on foreign trade; use economic diplomacy to promote interests of Kyrgyzstan globally; re-invigorate the system of trade representatives at Kyrgyz embassies abroad;

- Further reform the institutions relevant to trade to make trade easier and more transparent, notably, via the introduction of e-governance, digital B2B and trade platforms, and other digital means;
- Cooperate with China; develop joint Kyrgyz-Chinese projects, primarily on transport and infrastructure, also as a part of the Silk Road Economic Belt (SREB) initiative
- Utilize and enhance the development opportunities arising from the cooperation with the EU; support the process of convergence between the EAEU and EU/international technical and SPS standards; develop sectors, which can benefit from Kyrgyzstan's membership in GSP+; promote Kyrgyz products to EU markets; cooperate on investment and technology transfer, including the green economy and sustainable development

7 Enhance the accessibility and affordability of energy for the industrial sector and other consumers

The following is recommended to enhance the energy infrastructure and supply as an underpinning factor for the industrial development in Kyrgyzstan:

In the **short and mid term**:

- Improve the procedures, time and cost required for business to obtain the electricity connection;
- Increase the reliability of the electricity supply and increase the production volume; modernize the electricity generation, transmission, and distribution systems;

In the **long term**:

- Optimize electricity pricing to balance the interests of consumers and generators; increase the transparency of tariffs of electricity; coordinate the electricity tariff system with the water pricing system;
- Increase the diversification and decrease the level of monopoly in the energy sector; create conditions for competition in the heating sector among different providers; develop decentralized energy generation solutions;
- Optimize the energy demand; implement measures to increase the energy efficiency in particular via cooperation with highly industrialized countries; improve the energy accounting;
- Re-invigorate idle refineries;
- Increase the level of gasification of the country, notably as a result of the creation of the common EAEU energy market.

8 Enhance the connectivity and link it to development

The following is recommended to enhance the connectivity and transport infrastructure as an essential factor for the industrial development in Kyrgyzstan:

In the **short and mid term**:

- Plan the construction of new transport arteries strategically as "development corridors", as much as possible connected to regional development strategies and the needs of the points of growth in Kyrgyz regions;
- Develop and modernize roads of strategic importance as well as trans-boundary roads and enhance the quality of automobile transportation; focus on the improvement of the road infrastructure in the points of growth in Kyrgyz regions;

In the **long term**:

- Diversify existing transportation possibilities; create incentives to attract investment into the development of the transport infrastructure; develop the system of multi-modal transportation of goods; increase options of vehicle types and transportation routes a consumer can choose from;

- Enhance the railroad infrastructure, including building the transport corridor "Europe-Asia", involving China, Kyrgyzstan and Uzbekistan; resolve the track gauge gap issue
- Modernize airports; build a new airport in the Chui region oriented to Central Asian region; extend air transport routes, implement the "Open Sky" principle;
- Make transportation more sustainable; electrify transportation and enhance e-mobility; introduce mechanisms to disincentive the usage of old vehicles and low-quality petrol;
- Reform the system of public transportation; promote alternative fuels for public transportation

9 Ensure socially and environmentally sustainable investing and businesses

The following is recommended:

In the **short and mid term**:

- Continue with engagement into PAGE process on reduction of the pressure from industrial activities, energy sector and the deployment of infrastructure on water, soil, air, and ecosystems; introduce institutional and regulatory drivers to boost innovations and green growth:
 - Introduce indicators of progress and monitoring of the transition of the Kyrgyz Republic to sustainable development; increase awareness of the public, governmental servants, businesses and other stakeholders;
 - Reform the regulatory system to stimulate environmentally friendly investments; develop and implement green economy principles in all phases of planning, implementation of decisions, realization of projects and monitoring
 - Introduce systems for social and environmental impact assessments as pre-requisite of any development project; ensure that investment going into the country contributes to economic growth while meeting criteria of environmental and social sustainability;
 - Implement an eco-certification system and offer privileges (e.g., tax reductions) to firms deploying environmentally friendly technologies or green methods of production;
 - Enhance controls and audits in the energy sector to guarantee that products and goods meet the requirements of energy efficiency and ecological security
- Conclude agreements with investors to support the implementation of measures on environment protection;
- Create a dedicated fund to support renewable energy and energy efficiency projects, and research and development programs on the topic; further develop the Public Nature Development Fund to finance measures to improve the environmental situation in Kyrgyzstan based on contributions from businesses;
- Implement principles of green economy into state tendering procedures to minimize the procurement of energy-intensive technologies;
- Cross-check national strategic development plans in different sectors in terms of their expected environmental impacts; where possible take advantage of a coordinated "nexus" approach to solve environmental problems;
- Reduce industrial waste and organize the system of waste processing; develop a system of secondary usage of materials and recycling; decrease the amount of solid household waste; study other countries' practices on limiting the usage of one-time disposable plastic products and the potential to apply such a policy in Kyrgyzstan; close and clean up reserves of radioactive waste;
- Develop a policy on reducing the impacts of natural hazards and decreasing the environmental vulnerability; develop a national policy on adaptation to climate change and increase public's awareness about climate change effects;

- Strengthen and coordinate international cooperation on environmental problems, including transfer of experience and best practices such as environmental impact assessments.

In the **long term**:

- Develop human capital in the green growth area;
- Involve the civil society in the development and implementation of policies and legislation, develop participatory governance in the area of environmental sustainability and resource efficiency; expand the scale of social partnership and ensuring output and procedural justice during the implementation and planning of infrastructure projects; increase the level of transparency and engagement of the civil society into decision-making processes.

10 Develop information and telecommunication (IT) technologies

The following is recommended to enhance the usage of modern digital technologies in Kyrgyzstan to facilitate industrial development:

In the **mid and long term**:

- Promote the deployment of digital technologies throughout the economy; implement digital technologies in education, public health, agriculture, industry, and finances (including the implementation of electronic accounts and further improvement of the electronic financial services); implement regulatory norms according to international best practices and standards;
- Introduce the system of e-governance, and digitalize and automatize the provision of state services, including electronic taxation, thereby enhancing transparency;
- Take measures to ensure cyber-security;
- Increase human capital in the area of digital technologies;
- Adopt the "Smart cities" approach in urban development.

11 Develop mining

Besides the recommendations outlined in the sections dealing with crosscutting issues, specifically in what concerns mining, this report recommends the following:

In the **short term**:

- Develop the coal mining sector with caution; observe the issues of sustainability; implement structural reforms to balance the interests of the state, enterprises and the local population; take steps to overcome the resource curse;
- Facilitate the modernization of existing and the construction of new enterprises; increase capital and labor efficiency in the mining industry; minimize environmental impacts;
- Attract private capital into the coal industry; privatize coal mining enterprises;
- Protect local population; implement social impact assessment and standardize agreements on socio-economic impacts from infrastructure projects to avoid conflicts and uncertainty; involve local communities into decision-making; ensure that locals are compensated for the negative effects from new projects on their livelihoods; develop a comprehensive compensatory system including the construction of socially important facilities and "social packages".

In the **mid and long term**:

- Improve the transportation and thereby increase the export of coal to China, Uzbekistan and Tajikistan

12 Develop electricity production

Besides the recommendations outlines in the sections dealing with crosscutting issues, specifically in what

concerns electricity production, this report recommends the following:

In the **short and mid term**:

- Increase reliability of electricity supply; increase production volume based on an optimized energy mix relying on both fossil fuels and renewables; modernize electricity generation, transmission and distribution systems; construct new transmission lines and increase the capacity of the existing ones aligned with the plans to increase export of electricity; deploy smart grids;
- Develop low carbon electricity generation based on hydro, solar, wind, and biogas; introduce an institutional framework to support the deployment of renewable energy sources (RES); establish a special state authority responsible to attract investment into RES and dealing with administrative procedures;
- Develop hydropower generation, complement the large-scale hydro power degeneration by deployment of small-scale hydro power solutions; increase exports of hydro-generated electricity to neighboring countries and develop the system of electricity transit; improve coordination between stakeholders and regulatory authorities on the management of the Syr Darya basin; strategically plan the distribution of power stations across the country to decrease the costs of transmission and maximize supply reliability;
- Develop fossil fuel-based energy; carefully plan an increase in coal mining, production and processing; carefully plan an increase in the exploration of own oil reserves and an increase of oil imports; increase imports of natural gas;
- Introduce a system to protect energy generation and transmission infrastructure from natural hazards and human risks;
- Create reserve capacities.

13 Develop the food processing industry

Besides the recommendations outlined in the sections dealing with crosscutting issues, specifically in what concerns food processing, this report recommends the following:

In the **short term**:

- Diversify the agricultural and food production according to expected demands, notably in the EAEU;
- Support integrated management practices; increase cooperation between different agri-food sub-sectors;
- Overcome the issue of petty commodity, increase the size of enterprises and take advantage of economies of scale; support the specialization of villages on few/one products, notably on meat, milk, vegetables, perennial herbs, and fruits, combined with the development of safety nets programs reducing farmers' exposure to risks of low yields via, e.g., appropriate insurance programs;
- Further support cooperatives, including the applicable regulatory base and taxation;
- Increase the quality of packaging;
- Introduce laboratories for certification of food processing products; ensure compliance with the EAEU standards and, where relevant, international standards; introduce a modern certification system for meat; increase the quality and variety of technical services for agricultural and food processing industries
- Promote and do marketing of Kyrgyz products to foreign markets through a national branding strategy; develop large trade and logistical centers for agricultural and food processing products; facilitate export by supporting participation of farmers and producers in international fairs and exhibitions.

In the **mid term**:

- Increase the productivity of growing crops and livestock; implement drip irrigation methods to save water and nutrients; support getting higher-quality modern seeds; promote growing crops in greenhouses;
- Support domestic production of organic fertilizers and their wide use;
- Improve the attractiveness of the food processing industry for investment; reduce the administrative burden on farmers; introduce special conditions for loans for farmers with lower interest rates and longer payback periods, and other measures helping to improve the access of farmers and producers to finances, such as futures and options; development of the Private-Public Partnership system.

In the **long term**:

- Revert the degradation pastures; increase the awareness of the rural population about new more environmentally friendly methods of agricultural activity, implement educational programs; combat desertification;
- Develop "bio" and "eco" agri-food; introduce a certification system for ecologically sustainable agricultural and food processing products;
- Foster technological upgrade of the food processing sector; develop the system of equipment leasing; assess feasibility for implementation of international best practices to increase efficiency of production factors such as labor and land; support professional associations and transfer of know-how between different regions of Kyrgyzstan and of available international best practices; create attractive conditions for qualified labor;
- Introduce insurance in the agricultural sector; reduce risks connected with land renting

14 Develop the light industry

Besides the recommendations outlined in the sections dealing with crosscutting issues, specifically in what concerns the light industry, this report recommends the following:

In the **short term**:

- Improve the quality of goods; promote compliance with the EAEU requirements and, where relevant, with international standards;
- Organize exports building on economies of scale; organize logistical centers;
- Pilot utilizing e-commerce, including the on-line trade and the promotion of information about Kyrgyz goods through online shops.

In the **mid and long term**:

- Overcome "digital divide" between the capital and regions, promote a broad usage of e-commerce in all regions;
- Enhance human capital in the sector

15 Develop the construction sector

Besides the recommendations outlined in the sections dealing with crosscutting issues, specifically in what concerns the construction sector, this report recommends the following:

In the **mid and long term**:

- Stimulate domestic demand for construction materials via supporting housing programs;
- Promote the utilization of domestically produced materials and components;
- Improve the quality of Kyrgyz products.

16 Develop tourism and utilize multiplier effects for industry

While tourism is a service sector, it can yield important multiplier effects and stimulate development of the industrial sector, notably construction. The report recommends the following:

In the **mid and long term**:

- Develop tourist infrastructure including transportation, water and sanitation as well as infrastructure necessary for tourist registration;
- Develop public transportation;
- Increase knowledge of foreign languages by public servants and the population.

17 Build on regional specialization and comparative advantages

The following is recommended:

In the **short and mid term**:

- Change the approach of the state policy from a sectorial focus to a more coherent model of regional development taking into account the specifics of each and every region; identify and employ synergies between sectorial and regional policies in Kyrgyzstan;
- Develop a comprehensive strategy on “points of growth”; select several pilot cases and focus efforts on enhancing social, economic, communication and logistical infrastructure there; using this experience and best world practices to develop other territories
- Learning from the experience of Kyrgyzstan and other countries (e.g., South Korea), develop a strategy on special economic zones (SEZ), including free economic zones (FEZ), and industrial zoning, including industrial parks – aligned with the national industrial development strategy; thoroughly study feasibility; ensure that they deliver multiplier effects for regions’ development
- Arrange the subsidiarity and decentralization of decision-making, move a large part of decision-making and implementation responsibilities to the local level;
- Study feasibility and, accordingly, develop the processing industry, including construction materials and coal mining in Osh region;
- Study feasibility and, accordingly, recover manufacturing and develop mining in Chui Region;
- Study feasibility and, accordingly, make the city of Osh a hub for both passenger and freight transportation in Fergana Valley; develop food processing, textile industry and production of construction materials;
- Study feasibility and, accordingly, develop food processing, textile industry, tin and tungsten mining in Issyk-Kul Region;
- Study feasibility and, accordingly, develop hydro power production, mining, petroleum production, and metallurgy of rare earth metals and food processing in Jalal-Abad Region;
- Study feasibility and, accordingly, develop food processing, mining, railway transportation, electricity and natural gas infrastructure in Batken Region;
- Study feasibility and, accordingly, develop food processing, coal mining, and energy generation in Naryn Region;
- Study feasibility and, accordingly, develop food processing, textile and consumer goods production, and gold mining in Talas Region;

In the **mid and long term**:

- Address the issue of idle enterprises;
- Promote innovations in Bishkek;
- Improve transportation, in general, in the Bishkek agglomeration; improve the availability and quality of public transportation; promote the usage of bicycles; modernize urban planning, increase

the density of construction; develop railroad transportation and integrate it with planned international transport corridors; dis-incentivize transit traffic through the city center of Bishkek; move large markets from the city center of Bishkek to suburbs and to areas of adjacent to the international transport corridors; create a new administrative cluster located outside of the city center

18 Improve macroeconomic stability and prosperity

The following is recommended:

In the **short and mid term**:

- Take measures to stabilize the exchange rates dynamics;
- Conduct growth-enhancing structural reforms combined with a banking sector stability policy;

In the **mid and long term**:

- Decrease the susceptibility to event risks; limit the national debt and burden; systematically undertake the fiscal consolidation efforts;
- Enhance export diversification to reduce the vulnerability of the state budget to external shocks in commodity prices, notably, gold.

19 Improve the quality of governance

The following is recommended:

In the **short and mid term**:

- Change the governance practice from the *ad-hoc* one to a more long-term and strategic approach to evidence-based policy making;
- Reduce and optimize the controlling and permitting functions of the state, namely, reduce the number of bureaucratic procedures and their costs; increase their transparency through implementation of e-governance;
- Create mechanisms of participatory governance; involve different stakeholders as well as civil society into policy making; improve the transparency of decision-making processes; benefit from expertise and knowledge from local and regional levels; develop coordination mechanisms for major legal initiatives considered at the national governance level with institutions at the local level; increase the level of responsibilities at the local governance level, combine it with ensuring the availability of resources; notably for infrastructure projects, ensure involvement of all relevant stakeholders in decision making and implementation.

In the **mid and long term**:

- Increase the level of trust between business, civil society, general public and government

4. Pathways to different futures: How do we get there?

The decisions and actions by key Kyrgyz stakeholders, and external factors define the direction and pathways towards the future development of the country.

This report focused on three major sets of crosscutting policies aiming at

- Increasing investment attractiveness
- Facilitating trade and exports as the basis for enhanced economic diversification and competitiveness
- Improving governance of industrial activities

These three major areas were supplemented by an explicit intention to identify key sectors and regions. The choice of these crosscutting foci stems from the initial consultations with Kyrgyz stakeholders; it reflects their perception that the most critical barriers for the industrialization of the country lie in these areas. At the same time, those areas offer the highest potential to deliver favorable conditions to enable and drivers to facilitate the industrialization in Kyrgyzstan.

These initial consultations facilitated the identification of the industrial sectors of strategic interest of Kyrgyzstan, including mining, renewable energy, food processing, textile, production of construction materials. Specific recommendations have been formulated to stimulate the development of these sectors. A few supporting and adjacent sectors, including energy, transport, information and telecommunication, and tourism, have been highlighted and some developments have been proposed. Finally, as Kyrgyzstan's regions have heterogeneous competitive advantages; recommendations have been formulated to foster their development in ways that maximize their underpinning and triggering role for industrial development of Kyrgyzstan.

Successes and failures in the implementation of the suggested policies and recommendations, as well as external trends will define which path the industry of Kyrgyzstan will follow in the future. The six extreme scenarios formulated and discussed to draw the recommendations in this chapter are caricatures useful to outline the uncertainty space that industrial development planning confronts in the country. This uncertainty space is defined by five critical drivers (and other ten that together constitute the most influential factors for industrial development of the country). Table 1 explicates how policies from policy sets are expected to influence the critical drivers, which in turn leads to a certain scenario as summarized in Table 2.

Table 1. Impact of the policy sets on the critical drivers of industrial development of Kyrgyzstan

Policy area - >	-> Factor	Description of the connection
Trade and integration	Trade policy and governmental regulation of the economy	Experts identified trade as both policy area and critical factor, which only underlines the existential role of trade policies for on industrial development. While the tariff policy is now defined at the EAEU level, and so are free trade agreements concluded, eliminating or strengthening of many non-tariff barriers still happen at the national level. Their constellation to a large degree steers the exports and imports of the country in or away from certain directions. A prominent example here is GSP+ status, which Kyrgyzstan obtained in 2016. However, the country cannot benefit from duty-free trade because its products fail to comply with the EU standards, while transportation is expensive. Similar to other former Soviet Union countries, Kyrgyzstan faces a challenge to balance its interests in building connections with the EU, Russia/EAEU and China/other Asian countries. The trade-focused agreements and treaties typically involve issues beyond trade. For example, closer cooperation with the EU via the GSP+ program, beyond fulfilling the EU standards, requires Kyrgyzstan to comply with a number of international conventions from human rights to environmental protection. In this way, indirectly, the trade agreements have an influence on the national governance system. Typically, the European/western influence will force the country to accept open and participatory governance. While it works well in developed countries, as

		<p>one can see from the experience of countries like Moldova and Kyrgyzstan itself, at early phases it carries a risk to provoke political instability and even worsen governance because of lack of continuity. An alternative is to strive to implement the Singapore model, in which governance and economic development coevolve. A particularly important parameter is the share of the state in the economy and level of governmental regulation. Kyrgyzstan will face the bifurcation point, in which it will need to decide whether to reduce the role of the state in the economy to a minimum or stay a key player, owning capital. To a large degree, the optimal government participation in the economy depends on what commodities it will produce and export. The resource extraction orientation typically implies a higher governmental involvement in the economy even in developed countries, like, for example, Norway. Other economic growth models could favor a lower involvement of the state in the economy.</p>
Investment	Trade policy and governmental regulation of the economy	Similarly to trade agreements, investment projects, especially if they are not by private investors, but by development banks/funds, imply certain obligations with respect to governance and the development of institutions.
Investment	State of the production factors	Investment is the first and foremost to define the state of the production factors. It facilitates capital accumulation and defines the level of technologies; it makes available resources to attract skilled labor; the production practice is based on these three pillars and defines environmental quality. Environmental quality feeds back to production via the state of the resource base, e.g., an unsustainable production can lead to the degradation of land and water and air pollution, and by affecting public health, and consequently the quality and cost of labor.
Regional policy	State of the production factors	Developing of the regions is a key measure to ensure a high level of economic diversification and corresponding regional and interregional multiplier effects. Development of free economic zones and high technology parks can give an additional boost for development of high-tech production. Some preconditions are needed, however, including the extent of integration of the local economies and their ability to tap into emerging economic opportunities at different levels. In the particular case of Kyrgyzstan, the choice of cities or points of growth introduces a specific dimension that needs to be explored, tested-out and built incrementally by the responsible Kyrgyz authorities.
Key sectors	State of the production factors	<p>Development of the electricity production is essential for supplying energy for manufacturing sectors. It is the most critical factor to support doing business in Kyrgyzstan in the short run.</p> <p>Development of transport is key to enhance the connectivity and reduce the disadvantages of Kyrgyzstan being a land-locked country, which in turn, should make it a more attractive place for placing production.</p> <p>Development of the IT sector can be a trigger to facilitate a shift from the traditional, raw materials-based approach to a modern production</p>

		cycle. Development of business platforms can connect producers and consumers much more efficiently, supporting the market mechanisms. On the other hand, there is a risk of tax evasion and over-concentration of capital.
Trade and integration	Quality of domestically produced goods and services	Liberalized trade and competition on global and regional markets will create incentives for Kyrgyz producers to increase the quality of produced goods and services. However, these incentives can work only if there are sufficient resources available to modernize the production factors and install management routines to translate high-quality production factors into high-quality goods and services. Trade partners' practices on the latter will make an indirect, yet probably quite large impact.
Investment	Quality of domestically produced goods and services	Investment will enhance the potential of production factors, bring new technologies and open branches of the world leading manufacturing companies having high-quality standards of production, which, as the experience of other countries shows, they can proliferate to the entire economy.
Governance	Quality of domestically produced goods and services	The governance quality has a direct impact on the quality of produced goods and services. A strict governmental control and audit, especially at strategic enterprises can deliver high quality if the rules are transparent and applied consistently throughout. Under a loose control, quality can be assured through market competition; yet that would require a certain market size to be achieved.
Trade and integration	Dependence on the external financial support	Trade agreements often come with a package of support actions. For example, the Kyrgyz membership in the EAEU was supported by the creation of the Russian-Kyrgyz fund, which funds development projects in Kyrgyzstan. Trade agreements can give a boost to incoming investments, however making the economy dependent on external partners and their strategic goals.
Governance	Dependence on the external financial support	Poor governance extends and deepens the non-sustainability of the national budget. The lack of strategic planning leads to short-termism and ever-increasing public debt.
Trade and integration	Domestic demand	Access to the EAEU markets can increase the export of domestic goods, increase profits and eventually enhance the welfare of population, which in turn will stimulate domestic demand. However, in the absence of improved competitiveness of domestically produced goods this may lead to the opposite effect – goods imported from the EAEU can be more competitive and hence imports can increase, which will deprive Kyrgyz population from the value-added benefits.
Investment	Domestic demand	Investment both stimulates employment (through opening new enterprises and extending the existing ones) and once the market is saturated leads to wage increases thereby stimulating domestic demand.
Regional policy	Domestic demand	A smart regional policy will take advantage of regions' specifics and will stimulate manufacturing and other elements of the industrial sector in the regions, where there is capacity. It is an important measure to

		unemployment in the regions, which should be complemented by a social policy to support the vulnerable part of the population. If successful, it will lead to a more even income distribution across regions and stimulate total domestic demand.
--	--	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Table 2. Key policies leading to different scenario developments.

Scenario	Key actions facilitating the shift in this direction
1A: Modern yurt	<p><i>Improve the accessibility to and affordability of finances for business (1), decrease investor risks (2) and improve the ease of doing business (3)</i> is key to any scenario, in which the industrialization succeeds. This scenario is associated with a high share of investment from the west, which leads to a high diversification of industrial and economic activity. This scenario can be implemented through an active engagement with the western development partners, who will require to <i>increase the quality of institutions and enhance trust (4), improve the quality of governance (19)</i> and other deals. Risks to be eliminated include, inter alia, the property right violation and corruption. This scenario also requires improving <i>macroeconomic stability (18)</i> in what concerns, for example, the exchange rates, but the public debt will continue to grow.</p> <p><i>Import substitution (5)</i> is not a goal in this scenario per se; rather the country will <i>embed into regional and global supply and value chains (6)</i> exporting commodities according to occupied niches and importing all other goods. Producers are not supported anyhow specially by the government, rather these are foreign investors who decide in which sectors to invest (5).</p> <p>However, the government must <i>enhance the accessibility and affordability of energy for the industrial sector (7)</i> as a pre-requisite for the industrial development. Another important enabling condition is to <i>enhance the connectivity (8)</i>. To do both, the government should attract foreign investment and the EAEU support, and it should be observed that the interests of the national economy are respected. It is especially important in case of Chinese investment as the experience of other countries shows that the multiplier effects of their investment tend to be minimal, if at all.</p> <p>In this scenario, in the spirit of the global movement towards sustainability, the government will have to <i>ensure socially and environmentally sustainable investing and business (9)</i>.</p> <p>The <i>IT sector</i> will receive investments and will support the industrial development (10). <i>Mining</i> of gold and rare earth metals will actively develop (11). Hydropower and other renewables-based <i>electricity production</i> will dominate the energy sector (12). Kyrgyzstan will have to pay a special attention to overcome the diverse non-tariff barriers with the EU, EAEU and Asian countries to develop export of <i>food (13)</i> and products of <i>light industry (14)</i>. For both sectors, an important policy is the one aimed at the enhancement of the human capital. The development of the <i>construction materials</i> production (15) will be the consequence of the housing market reform, which will become possible in a later stage once the state budget begins to receive revenues from the pilot activities.</p> <p>Developed economic relations with the west, as well as in the region will increase the awareness of their populations about Kyrgyzstan and will make it an attractive place for</p>

	<p><i>tourism</i> (16). Policies facilitating the inflow of tourists will lead to the development of this sector, which in turn will create multiplier effects to the construction sector and to services. The utilization of regions' competitive advantages (17) will happen under market forces, rather than by a strategic foresight of the government.</p>
<p>1B: Khagan fortress</p>	<p><i>Improve the accessibility to and affordability of finances for business (1), decrease investor risks (2) and improve the ease of doing business (3)</i> is key to any scenario, in which the industrialization succeeds. This scenario is associated with a diversified portfolio of investment, which mainly goes to the sectors relying on natural resources. This scenario can be implemented if the government firmly and consistently makes sure to play a decisive role in major development projects; the wide implementation of the PPP is a key instrument in this scenario.</p> <p><i>Increase the quality of institutions and enhance trust (4)</i> will need to happen to some degree, the corruption remains, however, the government is strong, and the state servants know that they are personally responsible for the success of the strategically important projects. The <i>quality of governance</i> (19) improves in that sense that the responsible authorities realize the superior importance to support the governmental decisions.</p> <p>Risks to be eliminated include, most of all, the political instability.</p> <p>This scenario also requires <i>improving macroeconomic stability</i> (18); the public debt will gradually shrink as the government receives a large fraction of the resource rent. The country uses the resource rent to finance the development of other sectors, it realizes the <i>import substitution</i> (5) policy within the EAEU and <i>embed into regional and global supply and value chains</i> (6) with its key exported commodities.</p> <p>The government must <i>enhance the accessibility and affordability of energy for the industrial sector</i> (7) as a pre-requisite for the industrial development. Another important enabling condition is to <i>enhance the connectivity</i> (8). To do both, the government should attract foreign investment and the EAEU support, and it should be observed that the interests of the national economy are respected. It is especially important in case of Chinese investment as the experience of other countries shows that the multiplier effects of their investment tend to be minimal, if at all.</p> <p>In this scenario, there will be some efforts invested into <i>ensuring socially and environmentally sustainable investing and business</i> (9), but it is less critical than in the Modern yurt scenario.</p> <p>The development of the <i>IT sector</i> is less important here, but eventually it will receive investments and will support the industrial development (10). <i>Mining</i> of gold and rare earth metals will actively develop, as well as coal, own oil and natural gas (11). Hydropower and other renewables-based <i>electricity production</i> will develop actively (12). The energy sector will also include production of electricity from coal. A radical gasification will happen as a part of the Kyrgyzstan membership in the EAEU. Kyrgyzstan will focus its <i>food processing</i> (13) and <i>light industry</i> (14) industries mainly to export to the EAEU market. For both sectors, an important policy is to ensure the compliance with the EAEU standards.</p> <p>The development of the <i>construction materials</i> production (15) will be the consequence of the housing market reform, which will become possible in a later stage once the state budget begins to receive revenues from the pilot activities.</p> <p>Developed economic relations with the EAEU will increase the awareness of their</p>

	<p>populations about Kyrgyzstan and will make it an attractive place for <i>tourism</i> (16). Policies facilitating the inflow of tourists will lead to the development of this sector, which in turn will create multiplier effects to the construction sector and to services. This scenario implies that the state clearly sets strategic priorities and supports activities to utilize regions' competitive advantages (17). To realize that, it will need to arrange the research and development to inform efficient policies.</p>
<p>2: Assembly shop</p>	<p><i>Improve the accessibility to and affordability of finances for business (1), decrease investor risks (2) and improve the ease of doing business (3)</i> is key to any scenario, in which the industrialization succeeds. This scenario is associated with a diversified portfolio of investment of smaller sizes, which mainly go to the manufacturing sector. This scenario can be implemented if the government manages to attract international companies to establish branches in Kyrgyzstan. <i>Decrease investor risks (2) and improve the ease of doing business (3)</i> are particularly vital for the realization of this scenario. <i>Increase the quality of institutions and enhance trust (4)</i> will need to happen to some degree, the corruption should be limited if not eliminated. The <i>quality of governance (19)</i> will need to improve.</p> <p>Risks to be eliminated include, most of all, the property rights violation. It is also important to ensure an increase of labor and capital productivity, which will happen via the transfer of know-how and modern production practices.</p> <p>The <i>macroeconomic stability (18)</i> does not play a big role here.</p> <p>The society will gradually get richer via higher wages of workers at the newly established factories and via the tax revenue that the state will get from them and redistribute to the society. It will allow to maintain the high levels of <i>imports (5)</i>. Kyrgyzstan will <i>embed into regional and global supply and value chains (6)</i> with its key exported products.</p> <p>The government must <i>enhance the accessibility and affordability of energy for the industrial sector (7)</i> as a pre-requisite for the industrial development. Another important enabling condition is to <i>enhance the connectivity (8)</i>. To do both, the government should attract foreign investment and the EAEU support, and it should be observed that the interests of the national economy are respected. It is especially important in case of Chinese investment as the experience of other countries shows that the multiplier effects of their investment tend to be minimal, if at all.</p> <p>In this scenario, little attention is paid to <i>ensuring socially and environmentally sustainable investing and business (9)</i>.</p> <p>The development of the <i>IT sector</i> is less important here, but eventually it will receive investments and will support the industrial development (10). <i>Mining</i> of gold and rare earth metals continues to develop with a high involvement of foreign companies, in particular, using concession mechanisms (11). Similarly, hydropower and other renewables-based <i>electricity production</i> will develop (12).</p> <p>Kyrgyzstan will focus its <i>food processing (13)</i> and <i>light industry (14)</i> industries mainly to export to the EAEU market. For both sectors, an important policy is to ensure the compliance with the EAEU standards.</p> <p>The development of the <i>construction materials</i> production (15) will be the consequence of the housing market reform, which will become possible in a later stage once the state budget begins to receive revenues from the pilot activities. <i>Tourism</i> (16) is not actively developing except for domestic one.</p>

	<p>This scenario implies that the state clearly sets strategic priorities and supports activities to utilize low input costs as major regions' competitive advantages (17).</p>
<p>3: Sand castle</p>	<p>In this scenario, Kyrgyzstan finds itself in a favorable situation, in which global superpowers are interested to gain influence over the Central Asian region and hence they provide financial support to the country, not necessarily based on economic reasons, but rather based on geopolitical considerations. Kyrgyzstan is able to use this opportunity and <i>improve the accessibility to and affordability of finances for business (1)</i> mainly in the form of grants from development partners. This support and influence from different sides benefits Kyrgyzstan as it allows it to modernize its production base. The country successfully implements a number of recommendations and requirements by development partners in what concerns <i>decreasing investor risks (2) and improving the ease of doing business (3)</i>, such as, for example, the number of procedures needed to open a new business and the time required is reduced to best international practices. However, the recommendations and requirements are not implemented strategically, also their timing is not optimized and some of them fail, for example, the corruption level remains high.</p> <p>The government was not able to systematically manage to <i>increase the quality of institutions and enhance trust (4)</i> and the <i>quality of governance (19)</i> remains generally poor, although some point-wise successes are achieved.</p> <p>In this scenario, Kyrgyzstan enjoys the support from international donors which supports it <i>macroeconomic stability (18)</i>.</p> <p>The lack of the strategic planning is exemplified, for instance, by the absence of a clear <i>import substitution</i> policy (5). Myopically, the country increases its imports while the situation allows, which in the long run is not sustainable and carries risks to compromise, for example, national food security if/when the support of donors shrinks. Production develops sporadically, some SMEs get started and some of them are able to successful find their niches on the global market, but the government does not utilize the benefits of trade agreements strategically, so no significant <i>embedding into regional and global supply and value chains (6)</i> happens.</p> <p>Thanks to foreign capital and support, in this scenario, the <i>energy (7) and transport (8) infrastructure are developed</i>. Also, in response to donors' requests, the government applies policies to <i>ensure socially and environmentally sustainable investing and business (9)</i>.</p> <p>The <i>IT sector</i> develops because it is less affected by inefficient, old-fashioned and bureaucratic institutions. However, its development is slowed down by the lack of human capital.</p> <p><i>Mining</i> of gold and rare earth metals continues (11). Hydropower and other renewables-based <i>electricity production</i> develops through various international programs (12). Kyrgyzstan is able to export electricity to Central Asian countries.</p> <p>Inefficient, old-fashioned and bureaucratic institutions, as well as the lack of professionals prevent the <i>food processing (13)</i> and <i>light industry (14)</i> from development.</p> <p>The housing reform stimulates the production of <i>construction materials (15)</i>, but they are of low quality and put new buildings at risk. People are not eager to invest in new buildings, so the industry exists only due to external support.</p>

	<p><i>International tourism</i> (16) does not develop much as citizens of most countries have to obtain a visa to Kyrgyzstan, which is too complicated. Low level of services in tourism also prevents Kyrgyzstan from getting more tourists from the EAEU.</p> <p>This scenario can happen when the government does not set up realistic strategic priorities or is unable to follow up on them with coherent policies despite the available resources for their implementation (17).</p>
4A: Falling tower	<p>In this scenario, Kyrgyzstan liberalizes many processes and decreases the level of the governmental control to minimal. The country implements a number of recommendations and requirements by development partners in what concerns <i>decreasing investor risks</i> (2) and <i>improving the ease of doing business</i> (3), such as, for example, the number of procedures needed to open a new business and the time required is reduced to best international practices. However, the recommendations and requirements are not implemented strategically, also their timing is not optimized and some of them fail, for example, the corruption level remains high. Kyrgyzstan fails to <i>improve the accessibility to and affordability of finances for business</i> (1), which prevents the country from getting on the industrialization trajectory.</p> <p>The country continues to rely on external support and on resource extraction. Only gold is extracted and produced by relatively modern means, because it is operated by a foreign company. The rest of production is done by outdated technologies, which become even more obsolete over time, but neither the government, nor private investors, nor development partners are able or willing to invest in their re-invigorating.</p> <p>The government was also not able to manage to <i>increase the quality of institutions and enhance trust</i> (4) and the <i>quality of governance</i> (19) remains poor. Corruption prevails. Eventually, in this scenario Kyrgyzstan loses the support from international donors, its <i>macroeconomic stability</i> (18) deteriorates. The severity of the situation can get to the point when it endangers the stability of the state, especially if the state has to declare bankruptcy.</p> <p>Since the welfare of population will decrease, people will be less able to afford to buy imported goods; the ones essential for living, e.g., food, will be substituted by locally produced ones, so in a way there will be some <i>import substitution</i> (5). But any sophisticated goods are imported; often, used items of low quality are re-sold to Kyrgyz consumers. Kyrgyz production will be dysfunctional and hence Kyrgyzstan will not be a part of any <i>regional and global supply and value chains</i> (6) except for a few export commodities like gold despite the efforts invested into removing trade barriers with other countries.</p> <p>In this scenario, the government fails to <i>enhance the accessibility and affordability of energy for the industrial sector</i> (7) and <i>transport</i> does not develop (8). With positive developments of the connectivity in other parts of Eurasia, Kyrgyzstan becomes even more disconnected from its neighbors and potential trade partners, which in turn prevents it from a possible development.</p> <p>No private investors are interested in Kyrgyzstan. It continues to receive some support from international donors, notably from the EAEU, but the money is mainly spent on social projects and to improve a little bit the obsolete infrastructure to avoid major catastrophes.</p> <p><i>Ensuring socially and environmentally sustainable investing and business</i> (9) is not even relevant to this scenario.</p>

	<p>The <i>IT sector</i> does not develop, the gap between the modern world and the country is even increasing. <i>Mining</i> of gold and rare earth metals continues through concession mechanisms. The country also tries to extract more coal, own oil and natural gas (11). Hydropower and other renewables- based <i>electricity production</i> does not develop as the country fails to attract the necessary investment (12).</p> <p>The <i>food processing</i> (13) and <i>light industry</i> (14) maintain some level of production, but they rely on outdated equipment and produce goods of low quality, which do not comply with the EAEU and international standards. Hence, they are consumed mainly domestically and sold to other Central Asian countries illegally or semi-illegally.</p> <p>The <i>construction materials</i> production (15) will stagnate in the absence of support and investment.</p> <p><i>Tourism</i> (16) does not develop in the absence of modern infrastructure. Also because of the economy in depression, the level of crime increases, which is another reason why tourism does not develop.</p> <p>This scenario can happen when the government does not set up realistic strategic priorities or is unable to follow up on them with coherent policies (17). It will be facilitated by a low interest of international development partners to support the country.</p>
4B: Abandoned palace	<p>In this scenario, Kyrgyzstan enhances the governmental regulations in all areas. By doing so it intends to combat corruption, but it does not work as hoped and <i>investor risks</i> (2) increase. <i>Moreover, the ease of doing business</i> (3) further deteriorates.</p> <p>Kyrgyzstan fails to <i>improve the accessibility to and affordability of finances for business</i> (1), which prevents the country from getting on the industrialization trajectory.</p> <p>The country continues to rely on external support and on resource extraction. Only gold is extracted and produced by relatively modern means, because it is operated by a foreign company. The rest of production is done by outdated technologies, which become even more obsolete over time, but neither the government, nor private investors, nor development partners are able or willing to invest in their re-invigorating.</p> <p>The government was also not able to manage to <i>increase the quality of institutions and enhance trust</i> (4) and the <i>quality of governance</i> (19) remains poor. Corruption prevails.</p> <p>Eventually, in this scenario Kyrgyzstan loses the support from international donors, its <i>macroeconomic stability</i> (18) deteriorates. The severity of the situation can get to the point when it endangers the stability of the state, especially if the state has to declare bankruptcy.</p> <p>Since the welfare of population will decrease, people will be less able to afford to buy imported goods; the ones essential for living, e.g., food, will be substituted by locally produced ones, so in a way there will be some <i>import substitution</i> (5). But any sophisticated goods are imported; often, used items of low quality are re-sold to Kyrgyz consumers. Kyrgyz production will be dysfunctional and hence Kyrgyzstan will not be a part of any <i>regional and global supply and value chains</i> (6) except for a few export commodities like gold. Kyrgyz products cannot access foreign markets because of high level of non-tariff barriers.</p> <p>In this scenario, the government fails to <i>enhance the accessibility and affordability of energy for the industrial sector</i> (7) and <i>transport</i> does not develop (8). With positive developments of the connectivity in other parts of Eurasia, Kyrgyzstan becomes even more disconnected from its neighbors and potential trade partners, which in turn</p>

	<p>prevents it from a possible development.</p> <p>No private investors are interested in Kyrgyzstan. It continues to receive some support from international donors, notably from the EAEU, but the money is mainly spent on social projects and to improve a little bit the obsolete infrastructure to avoid major catastrophes.</p> <p><i>Ensuring socially and environmentally sustainable investing and business</i> (9) is not even relevant to this scenario.</p> <p>The <i>IT sector</i> does not develop, the gap between the modern world and the country is even increasing. <i>Mining</i> of gold and rare earth metals continues through concession mechanisms. The country also tries to extract more coal, own oil and natural gas (11). Hydropower and other renewables- based <i>electricity production</i> does not develop as the country fails to attract the necessary investment (12).</p> <p>The <i>food processing</i> (13) and <i>light industry</i> (14) maintain some level of production, but they rely on outdated equipment and produce goods of low quality. There are repeated issues concerning the compliance of Kyrgyz products with the EAEU standards, which causes tensions with the EAEU members. Notably, it is an issue for food processing industry and tensions are serious with Kazakhstan. There are even bigger problems with the compliance with the international standards, so the high level of non-tariff barriers blocks the access of these products to foreign markets and the limited amount that is produced is consumed mainly domestically and sold to other Central Asian countries illegally or semi-illegally. The <i>construction materials</i> production (15) will stagnate in the absence of support and investment. <i>Tourism</i> (16) does not develop in the absence of modern infrastructure. Also because of the economy in depression, the level of crime increases, which is another reason why tourism does not develop.</p> <p>This scenario can happen when the government does not set up realistic strategic priorities or is unable to follow up on them with coherent policies (17). It will be facilitated by a low interest of international development partners to support the country.</p>
--	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

5. Responsible organizations

The major challenges for Kyrgyzstan lie more on implementation rather than at policy level. The National Council for Sustainable Development has a key role in definition of strategic priorities for future development of the country and has the following set of responsibilities together with other ministries and agencies.

1. *Formulation of a favorable investment climate* for promotion of investment and protection of investors, to formulate positive investment image of Kyrgyzstan abroad, development of priority economic sectors, and to create the national basis for investment projects
2. *Development of export potentials* to integrate the regions, implementation of the global standards of environmental protection, the development of special economic and industrial zones as well as autonomous structures for development of priority industrial sectors and to contribute to the improvements of institutions and business environment.
3. *Development of energy infrastructure*, including measures of energy efficiency and renewable energy.

4. *Improvement of the licensing system* for industrial enterprises, including public centers in the regions to assist enterprises in getting permitting documents.
5. *Efficient collaboration with local population* for integrated regional infrastructure investments.
6. *Improvement of the banking system* and development of new financial products.
7. *Innovation in the regions* and in different industrial sectors, including innovation policies and implementation of new technologies as well as contribution to infrastructure development.
8. *Development of the transport infrastructure* for finalization of roads and railroads.
9. *Labor capacities* targeting education and training as well as increasing the role of science in modernization of the economy.
10. *Improvement of the tourism potential*, including orientation on mass tourism.
11. *Implementation of measures for environmental protection* for development and implementation of a regulatory framework for environmental protection during the processes.

The implementation of industrial development strategy will depend on efforts of different stakeholders as well as on coordinated activities among them.

This sub-chapter provides the stakeholders mapping of the involved organizations according to the three major sets of crosscutting policies discussed in this report on such goals as to increase investment attractiveness, to facilitate trade and exports as the basis for enhanced economic diversification and competitiveness as well as to improve governance of industrial activities.

Table 3 below provides stakeholders mapping for each recommendation identified in this chapter.

Table 3. Stakeholders responsible for implementation of the recommendations.

	Recommendation	Stakeholders
1	Improve the accessibility to and affordability of finances for business	Ministry of Economy of the Kyrgyz Republic, Investment Promotion and Protection Agency of the Kyrgyz Republic, Ministry of Finance of the Kyrgyz Republic, National Bank of the Kyrgyz Republic, State Committee of industry, energy and subsoil use of the Kyrgyz Republic, State Financial Supervision Service of the Kyrgyz Republic
2	Decrease investor risks	Ministry of Economy of the Kyrgyz Republic Ministry of Justice of the Kyrgyz Republic Investment Promotion and Protection Agency of the Kyrgyz Republic State Service of Intellectual Property and Innovation under the Government of the Kyrgyz Republic
3	Improve the regulatory and administrative risks for business	Ministry of Economy of the Kyrgyz Republic Investment Promotion and Protection Agency of the Kyrgyz Republic Ministry of Foreign Affairs of the Kyrgyz Republic Judicial Department under the Supreme Court of the Kyrgyz Republic State Committee of Information Technologies and Communications of the Kyrgyz Republic
4	Increase the quality of institutions and enhance	Ministry of Economy of the Kyrgyz Republic Investment Promotion and Protection Agency of the Kyrgyz Republic

	trust in their operation	<p>Migration Service of the Kyrgyz Republic</p> <p>The State Agency for Architecture, Construction, Housing and Communal Services under the Government of the Kyrgyz Republic</p> <p>Judicial Department under the Supreme Court of the Kyrgyz Republic</p> <p>State Committee of National Security of the Kyrgyz Republic</p> <p>Ministry of Justice of the Kyrgyz Republic</p> <p>State Registration Service under the Government of the Kyrgyz Republic</p> <p>General Prosecutor's Office of the Kyrgyz Republic</p> <p>The State Agency for Architecture, Construction, Housing and Communal Services under the Government of the Kyrgyz Republic</p> <p>Public Services of water, electricity, gas and other infrastructure supply</p> <p>State Committee of National Security of the Kyrgyz Republic</p>
5	Support producers in export-oriented sectors and sectors with a potential of import substitution	<p>Ministry of Economy of the Kyrgyz Republic</p> <p>Special representative of the Government of Kyrgyz Republic in Eurasian Economic Union</p> <p>Investment Promotion and Protection Agency of the Kyrgyz Republic</p> <p>Ministry of Agriculture, Processing Industry and Melioration of the Kyrgyz Republic</p> <p>State Committee of industry, energy and subsoil use of the Kyrgyz Republic</p> <p>National Energy Holding of the Kyrgyz Republic</p> <p>State Registration Service under the Government of the Kyrgyz Republic</p> <p>Ministry of Education of the Kyrgyz Republic</p>
6	Embed into regional and global value chains	<p>Ministry of Economy of the Kyrgyz Republic</p> <p>Ministry of Foreign Affairs of the Kyrgyz Republic</p> <p>Custom Service of the Kyrgyz Republic</p> <p>Border Service of the Kyrgyz Republic</p> <p>State Committee of Industry, Energy and Subsoil Use of the Kyrgyz Republic</p> <p>National Bank of the Kyrgyz Republic</p> <p>Ministry of Transport and Roads of the Kyrgyz Republic</p> <p>National Energy Holding of the Kyrgyz Republic</p> <p>Ministry of Health of the Kyrgyz Republic</p>
7	Enhance the accessibility and affordability of energy for the industrial sector and other consumers	<p>State Committee of Industry, Energy and Subsoil Use of the Kyrgyz Republic</p> <p>National Energy Holding of the Kyrgyz Republic</p> <p>State Agency for Regulation of the Fuel and Energy Complex under the Government of the Kyrgyz Republic</p>
8	Enhance the connectivity and link it to development	<p>Ministry of Transport and Roads of the Kyrgyz Republic</p> <p>State Antimonopoly Regulation Agency of the Kyrgyz Republic</p> <p>State Agency for Regulation of the Fuel and Energy Complex under the Government of the Kyrgyz Republic</p>
9	Ensure socially and environmentally	<p>Ministry of Economy of the Kyrgyz Republic;</p> <p>State Committee of Industry, Energy and Subsoil Use of the Kyrgyz</p>

	sustainable investing and businesses	Republic; Investment Promotion and Protection Agency of the Kyrgyz Republic; National energy holding of the Kyrgyz Republic; State Agency for environmental protection and forestry under the Government of the Kyrgyz Republic; Ministry of Education of the Kyrgyz Republic; State Inspectorate for Environmental and Technical Safety under the Government of the Kyrgyz Republic.
10	Develop information and telecommunication (IT) technologies	State Committee of Information technologies and Communications of the Kyrgyz Republic
11	Develop mining	State Committee of Industry, Energy and Subsoil Use of the Kyrgyz Republic Ministry of Transport and Roads of the Kyrgyz Republic Regional Representatives of the Government
12	Develop electricity production	State Committee of Industry, Energy and Subsoil Use of the Kyrgyz Republic National Energy Holding of the Kyrgyz Republic State Agency for Regulation of the Fuel and Energy Complex under the Government of the Kyrgyz Republic State Agency for Environmental Protection and Forestry under the Government of the Kyrgyz Republic
13	Develop the food processing industry	Ministry of Economy of the Kyrgyz Republic Ministry of Agriculture, Processing Industry and Melioration of the Kyrgyz Republic Investment Promotion and Protection Agency of the Kyrgyz Republic
14	Develop the light industry	State Committee of Industry, Energy and Subsoil Use of the Kyrgyz Republic Investment Promotion and Protection Agency of the Kyrgyz Republic
15	Develop the construction sector	State Agency for Architecture, Construction, Housing and Communal Services under the Government of the Kyrgyz Republic
16	Develop tourism and utilize multiplier effects for industry	Ministry of Culture and Tourism of the Kyrgyz Republic
17	Build on regional specialization and comparative advantages	Ministry of Economy of the Kyrgyz Republic State Agency for local self-government and inter-ethnic relations under the government of the Kyrgyz Republic State Committee of industry, energy and subsoil use of the Kyrgyz Republic Regional representatives of Government and local municipalities City Hall of Bishkek, Osh and 20 cities and villages-points of development Ministry of Transport and Roads of the Kyrgyz Republic

18	Improve macroeconomic stability and prosperity	Ministry of Economy of the Kyrgyz Republic Government of the Kyrgyz Republic National Bank of the Kyrgyz Republic Ministry of Finance of the Kyrgyz Republic
19	Improve the quality of governance	Ministry of Economy Regional representatives of the Government of Kyrgyz Republic State Agency for Local Self-Government and Inter-Ethnic Relations under the Government of the Kyrgyz Republic State Committee of Information Technologies and Communications of the Kyrgyz Republic

This list shows several stakeholders who are involved into the process of implementation of recommendations for industrial development strategy. The Ministry of Economy, together with other stakeholders, is responsible for the majority of implementations, which are necessary conditions for industrial development such as conditions for investment, macro-economic conditions, governmental frameworks.

Speaking about investment and macroeconomic conditions, the Ministry of Economy of the Kyrgyz Republic is the government main body responsible to develop investment policies. In 2014, the Agency for the promotion and protection of Investment of the Kyrgyz Republic was created with responsibilities to implement this policy. Among other Kyrgyz governmental bodies that perform functions of facilitating investments are relevant ministries and government offices, regional and municipal authorities, Chamber of Commerce and Industry, International Business Council, Council on Development of Business and Investments under the Government of the Kyrgyz Republic, and Association of Young Entrepreneurs. The Ministry of Finance of the Republic of Kyrgyzstan is responsible for attracting the state investment.

The task to improve investment climate involves the Ministry of Economy, the Agency for the Promotion of Investment and Protection of Investors, the Ministry of Foreign Affairs and the Council to the Government for the Realization of the Development and Investment. These agencies are responsible for reformation of the legal framework for investment. The goal is to specify and guarantee preferential conditions for investors and to enhance the reputation of Kyrgyzstan among foreign investors. This task also involves the Ministry of Justice and the Ministry of Culture and the Ministry of Foreign Affairs. The task to create the national basis for investment projects involves the Ministry of Economy, the Agency, the State Committee of Industry, Energy and Subsoil Use as well as the Fond for Management of the State property. The task to develop and implement tools for promotion of investment, such as the development of the special economic zones or of industrial parks, is realized by the State Committee for Industrial Development, Energy and Subsoil Use as well as the Ministry of Economy, the Agency for the Promotion of Investment and Protection of Investors, the Ministry of Finance and the Association Legprom.

The strategies to promote investment should be informed by on-going initiatives at the supra-regional level, including regional integration initiatives, but also at the levels of the regions, including needs for socio-economic development and environment protection. The responsibilities to develop export potential based on regional integration initiatives are spread among the Ministry of Economy, the Agency, the Ministry of Agriculture and Water, the Ministry of Finance. The responsibility for efficient collaboration with local population regarding investment in the regions is shared between the State Inspection for Ecological and Technical Security and the State Agency for Participatory Local Governance and inter-ethnic relations. Speaking about environmental protection, the Ministry of Economy, the Agency, the Ministry of Agriculture

and Water as well as the State Inspection on Phytosanitary Security are mandated to ensure the implementation of global standards of environmental protection. The environmental protection also includes development of the normative and regulatory framework and implementation of measures for environmental protection while developing investment projects. The responsible organizations for this task are the State Agency for Environmental Protection and Forests as well as the Ministry of Justice and the Ministry of Internal Affairs.

Such as variety of stakeholders shows the need to create an intergovernmental mechanism or to base on the existing mechanism, such as the steering committee for industrial development, to be able to coordinate efforts of different stakeholders and to create synergies in their efforts. The validation of industrial development strategy will depend on efforts of different stakeholders as well as on coordinated activities among them. The figure below shows entities which contribute to the formulation and validation of the strategy for industrial development.

Matrix of responsible and decision makers in the process of developing the Industrial Development Strategy of Kyrgyz Republic 2018-2023

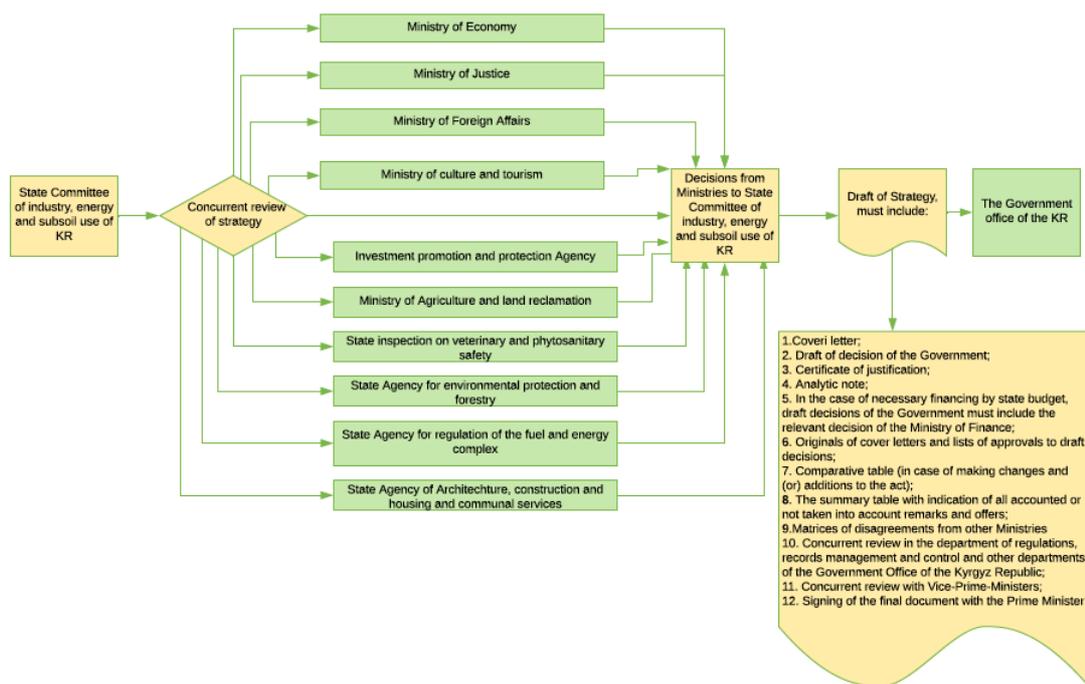


Figure 1. Validation process for the strategy of industrial development.

The preparation of this report was conducted during the first stage of the process in cooperation with the State Committee of Industry, Energy and Subsoil Use of the Kyrgyz Republic. The further process will involve validation of the recommendations through different ministries, being conducted by the State Committee of Industry, Energy and Subsoil Use of the Kyrgyz Republic and then preparation of the final draft of the strategy. While the figure above shows the process of validation of the strategy, it does not discuss the

process of its implementation. The recommendation here is to address three possible challenges for implementation of the industrial development strategy, namely:

- a. Need for coordination with other existing strategic documents, such as the strategic priorities for the medium-term period up to 2040, which are currently being under preparation
- b. Need for horizontal integration of actions to implement recommendations, which should create synergies of efforts among different ministries, also including the need of a coordinating body to take the lead in the process and to ensure implementation of recommendations.
- c. Need for vertical integration of actions to implement recommendations, which will require coordinated actions between the national and the local level of governance and provision of the local level of governance with sufficient resources to implement recommendations of the strategy. Further involvement of the local decision-making level into the strategy development process, which currently takes place at the national level, is required to ensure integration of the regional development plans, knowledge about local conditions and specifics, the needs of the regions, to increase the legitimacy of the decision-making process on the implementation of the strategy and feasibility of its recommendations

To address these challenges, the implementation of the industrial development strategy should be combined with the reforms of the governance system. Several actions on these reforms are also foreseen in the National Program of the Government of the Kyrgyz Republic "Unity, trust and creation". To add to this, that a better vertical and horizontal integration of activities of different stakeholders who are involved into implementation of industrial development strategy will allow to move away from the ad-hoc governance practice, which currently exists in Kyrgyzstan, to a more long-term planning and capacity building.

Implementation of the industrial development strategy should be based on the principle of transparency of public services, which foresees accessibility of information to everybody through an internal-portal. This principle will require implementation of reforms of the governance procedures based on new information technologies. This can also include a new system of data collection, processing and storage following the concept of "transparent data". This system should be based on the digitalization of documentation, including all legal and normative documents. The first step is to conduct analysis of the existing governance procedures and potentials for digitalization and to develop a roadmap for digitalization of the governance procedures and state services. The digitalization of the state services will allow a modification of the permitting function of the state, through reduction of the number of bureaucratic procedures and their costs and increase of transparency of these procedures through implementation of e-governance reforms.

The horizontal integration of activities of different involved ministries for implementation of the industrial development strategy should be combined with the systematization of the governance functions, which can include the clarification of the activities of state institutions and the development of new law on the implementation of the state functions. Already the National Strategy for Sustainable Development for the period 2013-2017 called for the review of responsibilities and powers of the main governance institutions and the need to map responsibilities of different institutions for the realization of the sectoral strategies. The goal of the institution mapping is also justified by the need to develop an efficient mechanism of coordination of work of institutions at different levels of governance as well as at the national level for different areas of work. Such institution mapping can inform goal-setting for sectoral policies and responsible institutions. It will

also allow for the development of indicators to evaluate the efficiency of the implementation of these measures.

The vertical integration, including the planning at the regional level and of interests of regions in Kyrgyzstan, should be based on the principles of participatory governance, decentralization of decision-making processes and increased cooperation between different branches of power. The vertical integration should include further development of institutional framework regarding participatory governance as well as development of mechanism of coordination of major legal initiatives, developed at the national governance level, with institutions at the local governance level. It is also necessary to ensure that the increased level of responsibilities at the local governance level is combined with available at the local governance level resources. Participatory governance should include cooperation between representatives and institute of the national governance system but also with international organizations. Mechanisms of participatory governance will not only allow coordination of actions of different stakeholders and involvement of local and regional expertise and knowledge but also increase transparency in decision-making processes and the level of trust to all branches of power.