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TA 9630: Assessing Economic Corridor Development Potential Among Kazakhstan, Uzbekistan, and Tajikistan

A Prefeasibility Study of an International Center for Industrial Cooperation on the Border of Kazakhstan and Uzbekistan

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For Asian Development Bank

Asian Development Bank

ABBREVIATIONS

ADB	-	Asian Development Bank
BCP	-	border crossing point
CAPEX	-	capital expenditures
CAREC	-	Central Asia Regional Economic Cooperation
CEO	-	chief operating officer
COVID-19	-	coronavirus disease
CPI	-	consumer price index
EBIDTA	-	earnings before interest depreciation and tax
FEZ	-	free economic zone
FMCG	-	fast moving consumer goods
GDP	-	gross domestic product
ICIC	-	International Center for Industrial Cooperation
IRR	-	internal rate of return
NPV	-	net present value
NWC	-	net working capital
OPEX	-	operating expenses
PPP	-	public private partnership
PRC	-	People's Republic of China
PwC	-	PricewaterhouseCoopers Pvt Ltd
SEZ	-	special economic zone
SFEZ	-	Sugd Free Economic Zone
SPS	-	sanitary and phytosanitary
SPV	-	special purpose vehicle
STKEC	-	Shymkent-Tashkent-Khujand Economic Corridor
TWG	-	Technical Working Group
VGF	-	viability gap funding
WACC	-	weighted average cost of capital
WTC	-	World Trade Center

In this report, "$" and "US $" refers to US dollars.

CONTENTS

Page

List of Tables

List of Figures

List of Boxes

EXECUTIVE SUMMARY

Introduction. Kazakhstan and Uzbekistan are participants of the Shymkent-Tashkent-Khujand Economic Corridor (STKEC) initiative.[1] With technical assistance of the Asian Development Bank (ADB), a road map for STKEC development was formulated in 2019-2020. In November 2021, ADB engaged PricewaterhouseCoopers Pvt Ltd (PwC) India and associated firms in Central Asia (the consulting firm) to conduct prefeasibility studies of (i) an International Center for Industrial Cooperation (ICIC) on the border between Kazakhstan and Uzbekistan[2] and (ii) a Trade and Logistics Center in Sugd province of Tajikistan. This report presents the findings and recommendations of the first study. It focuses on internal and external enablers for the successful operation of the ICIC since the Governments of Kazakhstan and Uzbekistan have already decided to set up the ICIC and agreed on a site and a list of priority industries for it.

Country context. Both Kazakhstan and Uzbekistan recorded strong economic growth during the past decade. Although manufacturing expanded at a fast pace, it remains relatively underdeveloped in both countries. Partly for this reason, exports of both countries are highly concentrated in a few primary commodities, such as oil, gas, metals, and ores. This makes Kazakhstan and Uzbekistan's economies vulnerable to fluctuations in world prices of the primary commodities. Furthermore, both countries are heavily dependent on imports of many essential manufactured goods, including processed food products and pharmaceuticals. This makes the countries vulnerable to disruptions in global supply chains for these goods.

The underdevelopment of manufacturing is one of the reasons for, and is partly caused by, Kazakhstan and Uzbekistan's weak innovation performance. The countries rank 83rd and 82nd, respectively, out of 132 countries in the World Intellectual Property Organization's Global Innovation Index 2022. There are significant spatial imbalances in the development of manufacturing, employment opportunities and living standards within both Kazakhstan and Uzbekistan. Notably, manufacturing is less developed, employment opportunities are fewer and living standards are lower in remote provinces (including Turkestan province of Kazakhstan and Syrdarya province of Uzbekistan) than in big cities (such as Almaty in Kazakhstan and Tashkent in Uzbekistan).

Bilateral economic relations. Kazakhstan and Uzbekistan have close historical, ethnic, cultural, and economic ties and collaborate in many areas, including trade, transport, and tourism. Both countries are members of the free trade area of the Commonwealth of Independent States. They use each other as a transit country, exempt each other's citizens from entry visa requirements, and promote bilateral foreign direct investment (FDI) flows. Merchandize trade between them rose from US$1.5 billion in 2010 to US$4.5 billion in 2022. Kazakhstan and Uzbekistan plan to boost their bilateral trade to US$10 billion over the medium term.

Although Kazakhstan and Uzbekistan have made considerable progress lowering trade barriers in recent years, multiple non-tariff barriers still constrain their bilateral trade. These include the differences in trade-related standards and technical regulations, comparatively

[1] The geographic focus of the initiative is at present on Shymkent city and Turkestan province of Kazakhstan, Tashkent city and Tashkent province of Uzbekistan and Sugd province (including Khujand city) of Tajikistan.

[2] In 2020, the Governments of Kazakhstan and Uzbekistan requested ADB to conduct a prefeasibility study of an International Center for Trade and Economic Cooperation (ICTEC) on the border between Kazakhstan's Turkestan province and Uzbekistan's Tashkent provinces. The ICTEC was to promote cross-border trade, tourism and business-to-business cooperation between the two countries and contribute to the development of the STKEC. In December 2021, the Governments of Kazakhstan and Uzbekistan agreed to focus the ICTEC on industrial cooperation and change its name to the ICIC. In March 2023, the two governments chose a location for the ICIC on the border between Turkestan province and Uzbekistan's Syrdarya province, which is adjacent to Tashkent province. The governments allocated 50 ha of land for the ICIC from each side of the border. Subsequently, they agreed on a list of priority industries for the ICIC. The list includes food, textile and pharmaceutical industries.

high cost (especially the high time cost) of border crossing for freight shipments by road and rail, and the quantitative restrictions that Kazakhstan and Uzbekistan occasionally impose on exports of essential goods.

Economic rationale. The ICIC is intended to serve multiple economic objectives of the Governments of Kazakhstan and Uzbekistan by increasing industrial cooperation between the two countries, attracting more FDI and know-how into manufacturing, lowering trade costs, and utilizing industrial symbiosis and economies of scale. In particular, the ICIC is expected to (i) spur the development of manufacturing, (ii) expand exports of manufactured goods, (iii) diversify the composition of exports away from primary commodities, (iv) reduce supply chain risks for essential manufactured goods, (v) foster innovation, and (vi) promote spatially balanced economic development. As per the estimates, ICIC can create close to 3,000 job opportunities in manufacturing and shall directly contribute US$ 250–500 million yearly in corporate income taxes. However, there is limited empirical evidence to show that cross-border industrial zones similar to the ICIC have helped attain such economic objectives in other countries. At the same time, economic theory and international experience indicate that there are more effective and efficient ways to achieve these objectives (e.g., improving the availability and quality of infrastructure, developing transport and logistics services, facilitating trade, strengthening the protection of property rights, creating a level playing field for businesses, enhancing competition, building human capital and providing well-targeted, performance-based, transparent, time-bound support to carefully selected manufacturing industries). International experience also shows that cross-border special economic zones create opportunities for rent seeking and may fuel corruption.

Location assessment. Land adjacent to Atameken-Gulistan BCP has been selected as the location for the development of ICIC. The site is located about 80 km from Tashkent and about 260 km from Shymkent. It is well connected via road connectivity from both sides. One major advantage of the site is the availability of land area which can be utilized for further expansion of ICIC.

Proposed target industries. Taking into account the objectives of the ICIC, Kazakhstan and Uzbekistan's comparative advantages, the sector attractiveness, the complexity of industry-specific trade procedures, and the time sensitivity of goods, six high value-adding target industries are proposed for the initial phase of ICIC development. These are (i) food processing, (ii) pharmaceuticals, (iii) textile and apparel, (iv) fast moving consumer goods and other chemicals, (v) motor vehicles and parts, and (iv) basic metals and advanced manufacturing. This list is largely congruous with the list of ICIC priority industries that the Governments of Kazakhstan and Uzbekistan have recently agreed on.

Proposed incentive structure. To incentivize investors to set up businesses in the ICIC, a customized incentive structure is proposed for the ICIC. It includes (i) fiscal incentives (such as tax benefits and capital subsidies); (ii) incentives for infrastructure development (e.g., incentives for introduction of new technologies); (iii) incentives for business opportunities (such as automatic clearance for access to countries with a free trade agreement with Kazakhstan and Uzbekistan. The tax incentives and subsidies should be devised carefully, considering their fiscal implications. The tax incentives and subsidies should be transparent, time-bound and, as much as possible, performance-based.

Proposed institutional models. Two alternative institutional models are proposed for the ICIC: (ii) a single-entity model and (ii) a dual-entity model. Under the first model, the ICIC will be set up as a joint venture between Kazakhstan and Uzbekistan. It will have a single management body. An intergovernmental agreement will provide a legal framework for the establishment, management and operation of the ICIC. It will remove or lower legal and regulatory barriers for cross-border movement of goods, services, capital and labor that are used or produced within the ICIC. Under the second model, the Kazakh and Uzbek sides of

the ICIC will be set up as separate legal entities and will have separate management bodies. They will be established and operate in accordance with laws and regulations of the respective countries. Under both models, an intergovernmental supervisory board will guide ICIC development. The board will consist of representatives of the central governments of Kazakhstan and Uzbekistan as well as the local governments of Turkestan and Syrdarya provinces.

Both models have their advantages and disadvantages. Notably, the single-management model is likely to be more effective in achieving the objectives of the ICIC. However, it will be more difficult to implement due to the need for an intergovernmental agreement. By contrast, the dual-management model will be relatively easy to implement. But it is likely to be less conducive to cross-border movement of goods, services, capital and labor. Accordingly, it is also likely to be less effective in achieving the objectives of the ICIC. Notwithstanding, Kazakhstan and Uzbekistan have decided to manage the area under each territory separately, similar to the dual-entity model. It is recognized that in the interest of expediency, the dual entity model is chosen. In the long term, consideration should be given to the single entity model.

Proposed components. Given the size of the land area that Kazakhstan and Uzbekistan have thus far allocated for the ICIC and taking into consideration the ICIC objectives, target/priority industries and incentive structure, it is proposed that the following components be included in the ICIC under the single-entity model during the initial phase of ICIC development: (i) a manufacturing zone, (ii) an office building, (iii) a utilities zone and (iv) a logistics zone. These components should be included in each side of the ICIC under the dual-entity model. Depending on which institutional model is implemented, several additional components may be worth including in the ICIC during subsequent phases of its development if Kazakhstan and/or Uzbekistan allocate additional land area to the ICIC. These include (i) customs clearance zones; (ii) a border crossing point (BCP) for goods used or produced in the ICIC and for people working in ICIC; (iii) one or several laboratories that can carry out food safety, veterinary, phytosanitary and/or pharmaceutical quality tests that are essential for goods used or produced in the ICIC; (iv) a training center; (v) an exhibition center; and (vi) a wholesale market.

Financial assessment. The overall capital expenditure on the ICIC, including the expenditure on physical infrastructure, buildings and utilities, is estimated at US$32.5 million. To assess the financial viability of the ICIC, the discounted cash flow, net present value (NPV) and internal rate of return (IRR) for the project have been calculated. Three financing scenarios have been considered. Scenario 1 entails full financing of the ICIC with a multilateral loan. Scenarios 2A and 2B involve hybrid (equity-and-debt) financing without viability gap funding (VGF) (Scenario 2A) or with VGF (Scenario 2B). The ICIC is expected to receive revenue from renting out commercial spaces and leasing land for manufacturing and related activities. The results of the computations indicate that the ICIC is not financially viable under Scenarios 1 and 2A. It is financially viable with VGF of US$24.1 million under Scenario 2B. The sensitivity analysis shows that the results are heavily dependent on the underlying assumptions. Still, the preliminary conclusion is that the ICIC will require low-cost financing and/or sizable VGF to be financially viable.

Key external enablers. As mentioned above, an intergovernmental agreement on the ICIC will be needed if the single-entity institutional model is implemented. The agreement may necessitate amendments in Kazakhstan and Uzbekistan's existing laws and regulations, including the customs codes and regulations on border crossing. Irrespective of which institutional model is implemented, a number of additional external enablers are needed to ensure smooth functioning of the ICIC, make it more attractive for businesses, increase its economic benefits and achieve its objectives. These include an enabling legal and regulatory

framework, good transport connectivity, well-developed logistics services, low trade barriers, modern quality infrastructure, availability of skilled labor, and a strong innovation ecosystem.

To ensure good transport connectivity of the ICIC, several transport infrastructure projects should be implemented. These are (i) the construction of the Darbaza-Maktaaral railway, (ii) the refurbishment of the A-2 and A-15 roads, (iii) the construction of a new bypass road at A-15, (iv) construction of new road from Tashkent to Samarkand or reconstruction of trunk road M-39, and (v) completion of a rail link between the Gagarin (Uzbekistan) and Zhetysay (Kazakhstan) railway stations.

To lower barriers to cross-border movement of goods, services and labor both inside and outside the ICIC, a number of measures aimed at facilitating border crossing for goods, vehicles and people are recommended. These include (i) segregation of the cargo and passenger flows, (ii) (ii) establishment of smart electronic queuing, gate management and parking systems, and (iii) transition to integrated border management.

Conclusion. The ICIC has potential to bring multiple socio-economic benefits. However, it is assessed to be a financially challenging endeavor as there are limited revenue generating avenues. Nevertheless, the Governments of both Kazakhstan and Uzbekistan are committed to the project. To ensure that the ICIC is financially viable and achieves its objectives, the governments will need to provide VGF and create multiple internal and external enablers.

I. INTRODUCTION

A. Background

1. Kazakhstan and Uzbekistan are participants of the Shymkent-Tashkent-Khujand Economic Corridor (STKEC) initiative. The geographic focus of the initiative is at present on Shymkent city and Turkestan province of Kazakhstan, Tashkent city and Tashkent province of Uzbekistan and Sugd province (including Khujand city) of Tajikistan.

2. With technical assistance of the Asian Development Bank (ADB), a road map for STKEC development was formulated in 2019-2020. The road map identifies six thematic focus areas for STKEC development: (i) improvement of road and railway transport connectivity; (ii) modernization of border crossing points (BCPs) and border management; (iii) development of horticulture value chains; (iv) modernization of sanitary and phytosanitary measures and development of food quality certification services; (v) development of regional tourism; and (vi) development of special economic zones and industrial zones.[3]

3. In 2020, the Governments of Kazakhstan and Uzbekistan requested ADB to conduct a prefeasibility study for the proposed International Center for Trade and Economic Cooperation (ICTEC) on the border between Kazakhstan's Turkestan province and Uzbekistan's Tashkent province. The ICTEC was intended to promote cross-border trade, tourism and business-to-business cooperation between the two countries and contribute to the development of the STKEC. In November 2021, ADB engaged PricewaterhouseCoopers Pvt Ltd (PwC) India and associated firms in Central Asia (the consulting firm) to conduct a prefeasibility study of the ICTEC (along with a prefeasibility study of a Trade and Logistics Center in Sugd region of Tajikistan). In December 2021, the Governments of Kazakhstan and Uzbekistan agreed to focus the ICTEC on industrial cooperation and change its name to the International Center for Industrial Cooperation (ICIC).

4. On 8-16 December 2021, the consulting firm conducted a series of virtual inception workshops with key stakeholders in Kazakhstan, Uzbekistan, and Tajikistan. In February-April 2022, bilateral consultation meetings with government agencies in the three countries were undertaken virtually. The meetings focused on seeking feedback, guidance, and support from the three countries on specific issues and needs on the two studies. In October 2022, the project team visited Kazakhstan, Uzbekistan and Tajikistan and held meetings with the public and private sector stakeholders in the three countries to further validate the assumptions and preliminary findings. The team also visited three prospective locations for the ICIC near the Zhibek Zholy (Kazakhstan)-Gist Kuprik (Uzbekistan), Saryagash-Keles and Atameken-Gulistan border crossing points (BCPs).[4]

5. In December 2022, the Governments of Kazakhstan and Uzbekistan signed a framework agreement on the establishment of the ICIC. In March 2023, the parties chose a location for the ICIC near the Atameken-Gulistan BCP.[5] They allocated 50 ha of land for the ICIC from each side of the border. Subsequently, the governments also agreed on a list of priority industries for the ICIC and identified 63 joint projects to be implemented in the ICIC. The list of priority industries includes food, textile, and pharmaceutical industries.[6]

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[3] ADB. 2018. Technical Assistance for Assessing Economic Corridor Development Potential Among Kazakhstan, Uzbekistan, and Tajikistan. Manila.

[4] The Kazakh side of all three locations are in Turkestan province. The Uzbek side of the first two locations are in Tashkent province, while the third location is on the border between Turkestan province and Uzbekistan's Syrdarya province, which is adjacent to Tashkent province. The project team visited the Kazakh side of the third location, but did not have the chance to visit its Uzbek side.

[5] Source: Uz Daily, https://www.uzdaily.uz/en/post/79713, accessed on 9 May 2023.

[6] Source: Spot.uz, https://www.spot.uz/ru/2023/04/25/cooperation-center, accessed on 9 May 2023.

B. Purpose and Structure of this Report

6. This report presents findings and recommendations of the prefeasibility of the ICIC. It focuses on internal and external enablers for the successful development and operation of the ICIC since the Governments of Kazakhstan and Uzbekistan have already decided to set up the ICIC and agreed on a site and a list of priority industries for it. The report is based on the information and data provided by the stakeholders as well as those assembled through desktop research and literature review. The target audience of the report includes government officials, development partners and the business community.

7. The rest of the report is organized as follows. Chapter 2 provides country context, bilateral economic relations, and economic rationale for the establishment of an International Center for Industrial Cooperation (ICIC) on the border between Kazakhstan and Uzbekistan. It focuses on key issues in the economy of both countries which the ICIC can address, as well as caveats for ICIC from international experience.

8. Chapter 3 proposes the concept plan for the ICIC. These include location assessment, target industries, incentive structures, institutional models, components and zoning plans, and digital technology application.

9. Chapter 4 assesses the financial viability of the ICIC. These include the projection of capital expenditure and the operational expenses to derive the overall investment required, the analysis of the revenue and sources. It also provides insights on the viability of the project using indicators such as net present value and the internal rate of return.

10. Chapter 5 provides and analyzes key external enablers for the development and operation of ICIC. These include legal and regulatory framework, transport connectivity, development of logistics services, facilitation of border crossing, and support for development of industrial parks and logistics centers.

11. Chapter 6 provides conclusion of the report. The appendices list additional information and data that are relevant to the chapters of the report for reference.

II. CONTEXT AND ECONOMIC RATIONALE

12. This chapter examines the context and assesses the need for the establishment of an International Center for Industrial Cooperation (ICIC) on the border between Kazakhstan and Uzbekistan. In particular, it provides an overview of Kazakhstan and Uzbekistan's economy and their bilateral economic relations, focusing on issues that the ICIC is intended to address.

A. Country Context

13. Kazakhstan and Uzbekistan are adjacent land-locked Central Asian countries. With land area of 2.7 million square kilometers, population of about 20 million people and gross domestic product (GDP) of US$603 billion, Kazakhstan has the largest territory and is the largest economy in Central Asia. With land area of about 440,555 square kilometers, population of 36 million people and GDP of US$80 billion, Uzbekistan is the most populous country in Central Asia.[7] The World Bank classifies Kazakhstan as a higher-middle income country and Uzbekistan as a lower-middle income country.[8]

14. **Recent growth performance**. Both Kazakhstan and Uzbekistan recorded strong economic growth during the past decade. Their real GDP grew at an average annual rate of 3.5% and 6.1% respectively, in 2011-2022. Kazakhstan's GDP per capita rose from US$9,005 in 2010 to US$11,439 in 2022. Uzbekistan's GDP per capita increased from US$1,777 to US$2,280 over the same period.[9]

15. **Manufacturing**. Although manufacturing expanded at a fast pace, it remains relatively underdeveloped in both countries. It accounts for one-seventh of GDP in Kazakhstan and one-fourth of GDP in Uzbekistan (Table 1 and Table 2). Resource-intensive manufacturing (such as the production of basic metals) generates a substantial percentage of manufacturing value added in both countries.

Table 1: Kazakhstan--Growth and Structure of GDP by Sector of Origin, 2010-2020 (%)

Sector	Average annual growth rate of gross value added, 2011-2020	Share in nominal GDP	
		2010	2020
Agriculture, forestry, and fishing	3.8	4.5	5.4
Industry (including construction)	3.2	40.6	33.1
of which: Manufacturing	3.7	11.3	13.1
Services	4.1	51.7	56.1

Source: World Bank's World Development Indicators database, https://datatopics.worldbank.org/world-development-indicators/ (accessed 3 July 2023) and the study team's computations.

[7] The numbers in this and the previous sentences are from the World Economic Outlook database of the International Monetary Fund (IMF), https://www.imf.org/en/ Publications/WEO/weo-database/2023/April (accessed 3 July 2023), the World Development Indicators of the World Bank, https://datatopics.worldbank.org/world-development-indicators (accessed 3 July 2023) and the websites of Kazakhstan and Uzbekistan's statistical agencies.

[8] N. Hamadeh, C. van Rompaey and E. Metreau. 2023. World Bank Group Country Classifications by Income Level for FY24 (July 1, 2023- June 30, 2024). Available at https://blogs.worldbank.org/opendata/new-world-bank-group-country-classifications-income-level-fy24

[9] The numbers in the paragraph are based on data from the IMF's World Economic Outlook database, https://www.imf.org/en/ Publications/WEO/weo-database/2023/April (accessed 3 July 2023).

Table 2: Uzbekistan-- Growth and Structure of GDP by Sector of Origin, 2010-2020 (%)

Sector	Average annual growth rate of gross value added, 2011-2020	Share in nominal GDP	
		2010	2020
Agriculture, forestry, and fishing	4.5	26.9	25.1
Industry (including construction)	7.1	21.2	31.6
of which: Manufacturing	7.3	10.2	19.4
Services	6.3	39.9	36.0

Source: World Bank's World Development Indicators database, https://datatopics.worldbank.org/world-development-indicators/ (accessed 3 July 2023) and the study team's computations.

16. **Composition of merchandise trade**. Manufactured goods only make up around one-seventh of Kazakhstan's merchandise exports and about one-fourth of Uzbekistan's exports of goods (Table 3). Exports of both countries are highly concentrated in a few primary commodities, such as oil, gas, metals, and ores. This makes Kazakhstan and Uzbekistan's economies vulnerable to fluctuations in world prices of the primary commodities. Furthermore, both countries are heavily dependent on imports of many essential manufactured goods, including processed food products and pharmaceuticals. This makes the countries vulnerable to disruptions in global supply chains for these goods. The Coronavirus 2019 pandemic, the Russian invasion of Ukraine, and the resulting disruptions in global supply chains have highlighted these vulnerabilities of Kazakhstan and Uzbekistan's economy.

Table 3: Kazakhstan and Uzbekistan—Three-Year Average Share of Selected Product Groups in Merchandise Exports, 2019-2021 (%)

Product Group	Kazakhstan	Uzbekistan
Manufactured goods	14.3	26.0
Primary commodities, precious stones and non-monetary gold	85.7	73.7
of which: Basic food	6.0	10.5
Agricultural raw materials	0.2	0.3
Ores and metals	16.4	3.7
Fuels	62.8	10.6
Precious stones and non-monetary gold	0.0	19.0

Source: UNCTADstat, https://unctadstat.unctad.org/EN (accessed 3 July 2023) and the study team's computations.

17. **Innovation performance**. The underdevelopment of manufacturing is one of the reasons for and partly caused by Kazakhstan and Uzbekistan's weak innovation performance. The countries rank 83rd and 82nd, respectively, out of 132 countries in the World Intellectual Property Organization's Global Innovation Index 2022.[10] The share of medium- or high-skill and technology intensive manufactured goods in merchandise exports was only 5.5% in Kazakhstan and 10.2% in Uzbekistan in 2021.[11]

18. **Spatial imbalances**. There are significant spatial imbalances in the development of manufacturing, employment opportunities and living standards within both Kazakhstan and Uzbekistan. Notably, manufacturing is less developed, employment opportunities are fewer and living standards are lower in most provinces (including Turkestan province of Kazakhstan

[10] World Intellectual Property Organization. 2022. Global Innovation Index 2022: What is the Future of Innovation-Driven Growth. Available at https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2022-en-main-report-global-innovation-index-2022-15th-edition.pdf

[11] The numbers are based on data from UNCTADstat, https://unctadstat.unctad.org/EN (accessed 3 July 2023).

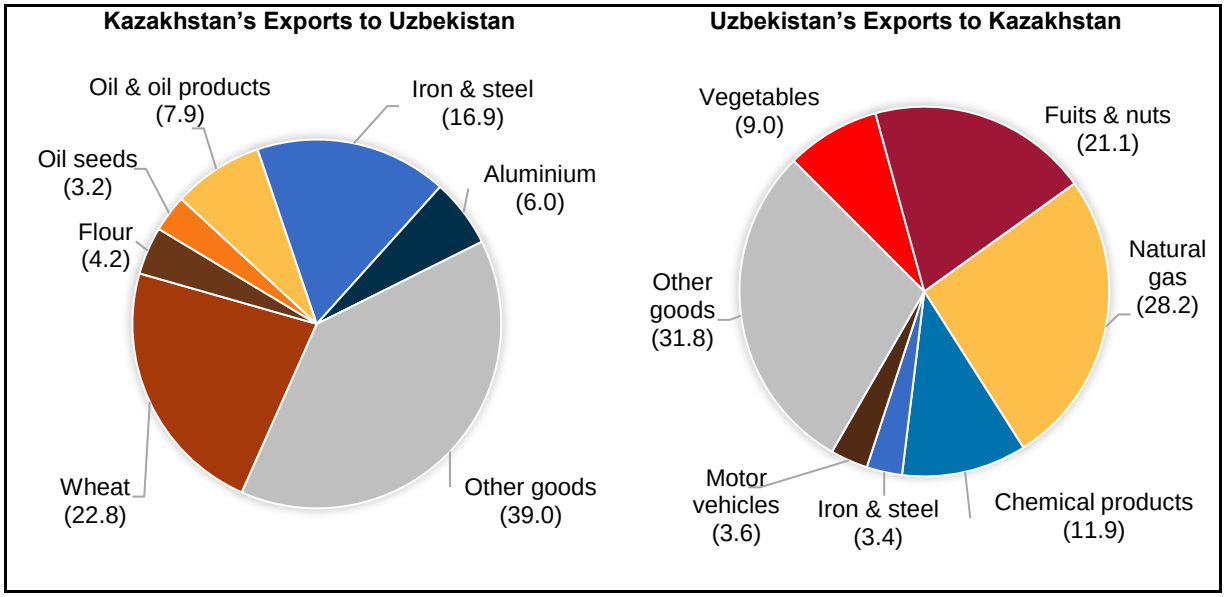
and Syrdarya province of Uzbekistan) than in big cities (such as Almaty in Kazakhstan and Tashkent in Uzbekistan).

B. Bilateral Economic Relations

19. Kazakhstan and Uzbekistan have close historical, ethnic, cultural and economic ties and collaborate in many areas, including trade, transport and tourism. Both countries are members of the free trade area of the Commonwealth of Independent States,[12] and are among each other's major trading partners. They exempt trucks registered in each other's territory from entry permit requirements and entry fees, and use each other as a transit country. They also exempt each other's citizens from entry visa requirements and promote bilateral foreign direct investment (FDI) flows.

20. **Bilateral trade**. Bilateral merchandize trade between Kazakhstan and Uzbekistan rose from US$1.5 billion in 2010 to US$4.5 billion in 2022.[13] Kazakhstan's merchandise exports to Uzbekistan mostly consist of wheat, flour, oil seeds, crude oil, oil products, iron, steel, and aluminum. Vegetables, fruits, nuts, natural gas, chemical products, iron, steel, and motor vehicles comprise the bulk of Uzbekistan's exports to Kazakhstan (Figure 1). Kazakhstan and Uzbekistan plan to boost their bilateral trade to US$10 billion over the medium term.[14]

Figure 1: Kazakhstan and Uzbekistan—Three-Year Average Share of Selected Products and Product Groups in Bilateral Merchandise, 2019-2021 (%)



Source: UNCTADstat, https://unctadstat.unctad.org/EN (accessed 5 July 2023) and the study team's computations.

21. **Trade barriers**. Although Kazakhstan and Uzbekistan have made considerable progress lowering trade barriers in recent years, multiple non-tariff barriers still constrain their bilateral trade. One of them is the differences in trade-related standards and technical regulations, including those pertaining to food safety, plant protection, animal health and product quality. As a member of the Eurasian Economic Union (EAEU), Kazakhstan

[12] The other members of the free trade area of the Commonwealth of Independent States are Armenia, Belarus, the Kyrgyz Republic, Moldova, the Russian Federation, Tajikistan and Ukraine.

[13] Bilateral trade is measured by the sum of bilateral exports at f.o.b. prices. The data on exports are from the Direction of Trade Statistics database of the International Monetary Fund, https://data.imf.org/?sk=9d6028d4-f14a-464c-a2f2-59b2cd424b85 (accessed 4 July 2023). The number on bilateral trade in 2022 differs from the number (US$5 billion) mentioned in some news reports, presumably due to differences in the methodology.

[14] Zakon.kz. 2023. Товарооборот между Казахстаном и Узбекистаном достиг 5 млрд долларов (Trade between Uzbekistan and Kazakhstan Reached 5 Billion Dollars). 5 May. Available at https://www.zakon.kz/6392641-tovarooborot-mezhdu-kazakhstanom-i-uzbekistanom-dostig-5mlrd-dollarov.html

implements the EAEU's technical regulations.[15] These technical regulations are only partially consistent with respective international standards. Uzbekistan implements national technical regulations, which are also partially aligned with the international standards. Consequently, there are numerous differences between trade-related technical regulations existing in Kazakhstan and those in effect in Uzbekistan. These differences constitute a significant barrier to bilateral trade as they increase the cost (including the time cost) of trade between the two countries.

22. Another major barrier to trade between Kazakhstan and Uzbekistan is the comparatively high cost (especially the high time cost) of border crossing for cargo shipments by road and rail. Indeed, crossing the border between Kazakhstan and Uzbekistan by trucks and freight wagons often takes hours and/or entails substantial payments. For example, data from the CAREC Corridor Performance Measurement and Monitoring revealed that in 2022, trucks from Uzbekistan going to Kazakhstan took an average of 3.3 hours to clear through the Yallama–Konysbayev BCP, and freight trains from Kazakhstan going to Uzbekistan took an average of 15.6 hours to clear through the Saryagash–Keles BCP. The reasons include inadequate BCP infrastructure and equipment, insufficient use of modern information and communication technologies in transport and border controls, and cumbersome border-crossing procedures.

23. Furthermore, both Kazakhstan and Uzbekistan occasionally impose quantitative restrictions on exports of essential goods to ensure their sufficient domestic supply. For instance, Uzbekistan imposed a temporary ban on exports of certain medical goods in 2020. In 2021. Kazakhstan imposed a temporary ban on exports of cattle and meat, which adversely impacted on the production and prices of meat in Uzbekistan. In 2022, both countries imposed temporary bans or quotas on exports of some food products. Such ad hoc export restrictions not only have a negative impact on trade flows between Kazakhstan and Uzbekistan, but also raise risks entailed in cross-border supply chains.

C. Economic Rationale for Establishing ICIC

24. Kazakhstan and Uzbekistan contribute to over 80% of the overall trade volume in Central Asia. Due to their landlocked boundaries, the countries rely on cross-border cargo movement by road and rail. The customs procedures, time taken for border crossing, transport infrastructure, etc. are thus critical factors affecting the efficiency of trade to serve the market. The governments recognize that the growing pace of trade should keep up with the pace of capacity enhancement at the borders including the modernization of infrastructure and procedures. Hence, the two governments have agreed on developing the ICIC on the border of two countries.

25. ICIC will be a transboundary industrial zone between Kazakhstan and Uzbekistan which aims to increase cross-border industrial cooperation by developing products including manufacturing high value-added products by synthesizing and leveraging on the relative strengths of both countries, such as quality raw materials, skilled labor and relatively lower land prices. It also aims to increase the attractiveness of the surrounding region among investors by creating an industrial zone with quality infrastructure and relatively low costs for cross-border trade. This also allows both countries to target a common export destination and avoid unnecessary competition by pooling resources, for penetrating new markets where the risks are higher.

[15] The other members of the EAEU are Armenia, Belarus, the Kyrgyz Republic and the Russian Federation. Uzbekistan has the observer status in the EAEU.

26. Based on the country context and bilateral economic relations between Kazakhstan and Uzbekistan, as well as the analysis of challenges/barriers of trade between the countries, the main objectives of ICIC are summarized as follows:

i. Developing manufacturing in particular, manufacturing of value-added goods through provision of quality infrastructure, a favorable legal and regulatory environment, lower trade barriers, economies of scale, FDI inflows, and industrial symbiosis, etc.

ii. Expanding trade, in particular exports of goods with high value added and bilateral trade between Kazakhstan and Uzbekistan if the ICIC can lead to lowering/removal of trade barriers at least for goods produced or used as inputs at the ICIC.

iii. Reducing supply chain risks especially if production at the ICIC can substitute, at least to some extent, for imports of essential goods and the goods produced or used as inputs at the ICIC are exempt from ad hoc export/import restrictions.

iv. Promoting balanced spatial/regional development within Kazakhstan and Uzbekistan through boosting economic development of Turkestan and Syrdarya province.

v. Protecting the environment by utilizing renewable energy sources, energy-efficient and sustainable waste management technologies.

27. However, some caveats are worth noting. International experience shows that there are more effective and efficient ways to achieve the above-mentioned economic objectives through policy measures such as improving the availability and quality of infrastructure, developing transport and logistics services, facilitating trade, strengthening the protection of property rights, creating a level playing field for businesses, enhancing competition, building human capital and providing well-targeted, performance-based, transparent, time-bound support to carefully selected manufacturing industries. Cross-border special economic zones may create potential opportunities for rent seeking and fuel corruption. The two governments need to take into consideration the potential risks and mitigation measures during the development and implementation of the ICIC.

28. The overall impact from development and operations of ICIC has been estimated and quantified in terms of manufacturing output contribution, employment, wages, and taxes, at national and regional level. The contribution of ICIC has been assessed under two different scenarios: a) high impact scenario[16] and b) low impact scenario[17]. Under the high impact scenario, the ICIC has the potential to attract US$125 million investment which will lead to US$ 3,335 million annual output and about3,200 jobs. It will also result in US$667 million tax revenue annually (see Table 4).

Table 4: Economic Impact of ICIC under High Impact Scenario

Sector	**Investment** $ million	**Output** $ million	**Tax** $ million	**Average Jobs**	**Average Wages** $ million
Chemicals and chemical products	19.3	103.5	20.7	346	2.0
Basic metals	43.9	1,064.2	212.8	494	4.1
Pharmaceuticals	23.9	714.3	142.9	758	6.3
Food products	6.7	129.7	25.9	236	1.1
Automobile and components	27.3	1,166.4	233.3	816	5.1
Textile and Wearing Apparel	3.5	157.0	31.4	545	1.7
Total	**125**	**3,335**	**667.0**	**3,194**	**20.3**

[16] High impact scenario: Assuming that ICIC shall attract 5 investors to each of the 6 shortlisted sectors.
[17] Low impact scenario: Assuming that ICIC shall attract 2 investors to each of the the capital intensive large sectors.

Source: Study team analysis based on projections for investment, output, and jobs

29. Under the low impact scenario, ICIC has the potential to attract US$60-62 million investment which will lead to US$1500-1700 million output and create about2200 jobs. It will also result in US$300-350 million tax revenue annually (see Table 5).

Table 5: Economic Impact of ICIC under Low Impact Scenario

Sector	**Investment** $ million	**Output** $ million	**Tax** $ million	**Jobs**	**Wages** $ million
Chemicals and chemical products	7.7	41.4	8.3	138.6	0.8
Basic metals	17.6	425.7	85.1	197.6	1.6
Pharmaceuticals	9.5	285.7	57.1	303.1	2.5
Food products	9.4	181.6	36.3	329.7	1.6
Automobile and components	10.9	466.6	93.3	326.3	2.0
Textile and Wearing Apparel	6.9	314.1	62.8	1,089.3	3.4
Total	**62**	**1,715**	**343.0**	**2,385**	**12.0**

Source: Study team analysis based on projections for investment, output, and jobs

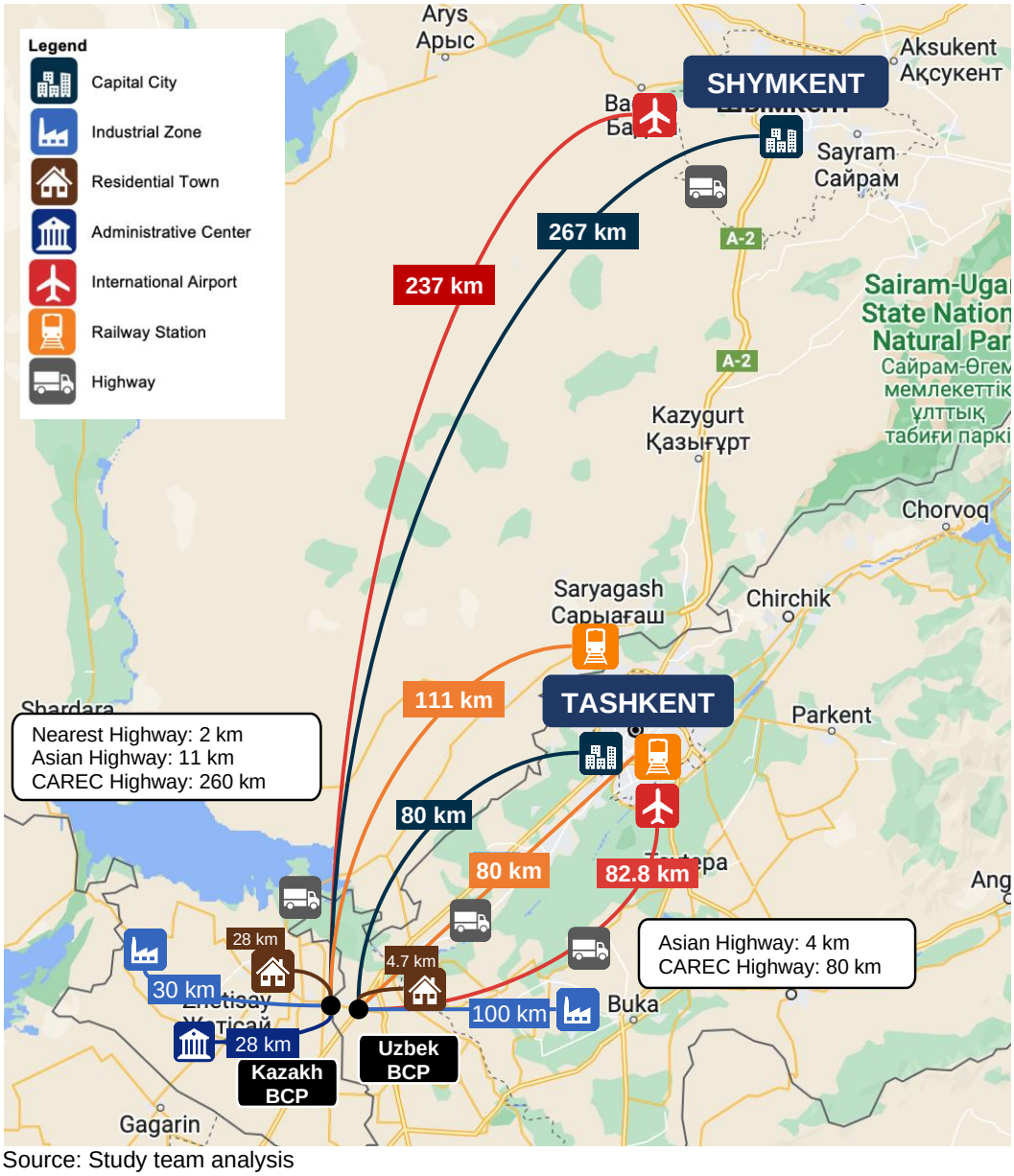
III. PROPOSED CONCEPT PLAN FOR ICIC

30. This chapter presents a concept plan for the ICIC. It provides location assessment, identifies target industries, proposes incentive structures and institutional models, and lays out components and zoning plans, as well as highlights digital technology application for ICIC.

A. Location Assessment

31. As mentioned earlier, the Governments of Kazakhstan and Uzbekistan have agreed to establish the ICIC near the Atameken (Kazakhstan)–Gulistan (Uzbekistan) BCP on the border between Kazakhstan's Turkestan province and Uzbekistan's Syrdarya province. Figure 2 shows the planned location of the ICIC and its relative distances from various urban and industrial centers.

Figure 2: ICIC Location



Source: Study team analysis

32. The site chosen for the ICIC is situated near the Atameken (Kazakhstan)-Gulistan (Uzbekistan) international road BCP. The BCP (opening 24 hours a day and 7 days a week

for people and cargo movement) was partially closed in February 2023 for modernization. Table 6 and Box 1 provide details on controls, facilities, and some specific features of the BCP.

Table 6: Snapshot of Atameken-Gulistan BCP

Name of the BCP (Kazakhstan)	Name of the BCP (Uzbekistan)	Working Hours	Mode of BCP								Types of Controls									
			Road		Rail		Sea		River											
			Passenger	Cargo	Passenger	Cargo	Passenger	Cargo	Passenger	Cargo	Pedestrian	Border Guards (Passport Offices)	Customs	Sanitary	Veterinary	Phytosanitary	Quarantine	Ecology	Traffic Police	Transport
Atameken	Gulistan	24	✓	✓	×	×	×	×	×	×	×	✓	✓	✓	✓	✓	✓	×	×	✓

Note: The list of facilities and controls may change as a result of the ongoing modernization.
Source: Traceca Guide for Border Crossing.

33. At present, the land on both sides of the ICIC is state owned lands, thus there is no requirement to acquire land from private owners with compensation. The inter-governmental agreement on ICIC indicates that the center will only be developed on public land.

Box 1: Atameken-Gulistan BCP

Atameken is located in Turkestan province of Kazakhstan while Gulistan is located in Syrdarya province of Uzbekistan. This BCP handles 200 trucks per direction on a daily basis, with a peak of 250 per direction. A single-track railway runs parallel to the BCP and connects to Kazakhstan in the north and Uzbekistan in the south. However, the track terminates inside Kazakhstan and is not connected to the main railway system inside Kazakhstan. The BCP has one access road to it, and two gates, one for entry and one for exit. There is a parking lot outside the BCP which is being upgraded to a capacity of 250 heavy transport vehicles. On average, 90% of outward shipments and 85% of inward shipments are assigned to green channel. Mean border-crossing time is 10 minutes per vehicle. The Syrdarya Free Economic Zone (with 400 ha) is located 10 km away.

Source: Study team, from a field trip on 13 September 2023

34. **Turkestan province (Kazakhstan)**. Turkestan province has a 723 km hard-surface pavement road, of which 421 km is category I (four-lane traffic), and 282 km is category II-III (two-lane traffic). The Government of Kazakhstan continues to upgrade road infrastructure and expand the road network in Turkestan to facilitate the movement of goods in the STKEC region. Major ongoing infrastructural projects include (i) 48 km of the south-western bypass of Shymkent city, (ii) 30 km of the eastern bypass of Turkestan city, (iii) 102 km of the bypass road near the Sarygash city, (iv) expansion of the Sarygash-Keles road, (v)11 km of the M-32 Samara-Shymkent Highway, (vi) 77 km of the A-15 Zhizak Zhetysay-Zhibek Zholy Highway and (vii) Saryagash railway station expansion project.

35. There are around 11 industrial zones and 2 special economic zones in Turkestan province. The Maktaaral district has one industrial zone located at about 30 km from the proposed ICIC site. This zone has cotton processing and food processing as its main industrial activities. There are multiple agro-industrial projects ongoing in the nearby region under the state development program. These include the establishment of an agricultural industrial complex for industrial processing of vegetables to canned products in the administrative center of the region i.e., Zhetysay (28.5 km from the ICIC site) and construction of deep processing of grain in industrial zone “Tyulkubas” (about 300 km from the ICIC site).

36. **Tashkent province (Uzbekistan).** Tashkent province and Tashkent city are strategically located within the East-West and North-South growth corridors of Uzbekistan, 130 km from Shymkent city and 167 km from Khujand city. It has a well-developed road and rail infrastructure. Tashkent province has a radial-ring structure with several outbound routes with immediate access to all international highways of the country such as I-39, AH7, A373A, M-34, M-39, etc. Freight flows are largely concentrated around Tashkent city—the country's strategic network, its agglomeration, and the highly urbanized areas such as the Samarkand–Tashkent–Andijan corridor. Intensive freight flows are observed on the outbound destinations toward Shymkent city.

37. **Syrdarya province (Uzbekistan)**. The Syrdarya province is an area of intensive agricultural land utilization with a well-developed irrigation system for cotton cultivation. There is an established free economic zone (FEZ) located around 10 km from the proposed ICIC site where key industries are light engineering, food processing, construction materials production, and pharmaceuticals. The extensive road and railway network of Tashkent province proceeds to the Syrdarya region as well, linking its industrial sites with Jizzakh, Samarkand, Navoi and other provinces' key urban centers.

38. **Transport connectivity**. The proposed ICIC site is connected to a dense road network of the two countries including both national and international highways (e.g., Asian Highways M 39 and M 34). It links to CAREC Corridor 1B (about 200 km), connecting Europe to East Asia and CAREC Corridor 6B (80 km) connecting Europe, the Middle East and South Asia at Shymkent and Tashkent respectively. Furthermore, the ICIC site is located near well-developed main national railway lines in Turkestan province and is about 80 kms from the international airport. This will be detailed in chapter V.

39. **Availability of skilled labor**. As far as talent acquisition is concerned, it was found that there is an under-developed skill ecosystem on Kazakhstan side, as the identified site is significantly away from urban clusters in Kazakhstan. On the Uzbekistan side, since the site is located near the national capital of Tashkent city and a local settlement, there is a good opportunity of supply of skilled workforce in the sectors of light engineering, textiles, pharmaceuticals, etc.[18]

B. Target Industries

40. Target industries for the ICIC are proposed using a sector shortlisting framework which focuses on the relatively growing and regionally relevant manufacturing sectors (Appendix 2). The shortlisting framework helps in understanding the current development status of various manufacturing sectors and in analyzing the scope for further integration of technology and resources between Kazakhstan and Uzbekistan in each sector. Key elements considered include:

- **Sector attractiveness** which includes future potential of the sector and products within the sector based on the shift in import trends, global R&D spend, shifts in consumer market behaviors and governance structures. These are highly aspirational sectors and product classes with high technological advancements.
- **Comparative advantage** which includes sectors with a neutral-to-high presence in the region and have an existing production capacity base for the sectors. These sectors can be further diversified to advanced manufacturing and upward/downstream integration.

41. A total of 19 sectors were evaluated under the shortlisting framework. Priority considerations are given to those sectors that have comparative advantages in Kazakhstan

[18] Information was obtained during a field visit to the Syrdarya Free Economic Zone on 13 September 2023, while interview with an Uzbek-Chinese joint venture was conducted.

and Uzbekistan, their attractiveness, the complexity of industry-specific trade procedures and the time sensitivity of goods. As per the scoring on parameters mentioned in the framework, sectors such as basic metals, textiles and wearing apparel, food processing, automobile and component manufacturing, pharmaceuticals, chemical products, and non-metallic mineral products have been shortlisted for ICIC (see Table 7).

Table 7: Shortlisted Sectors for ICIC

Sector	Total Score for Kazakhstan	Total Score for Uzbekistan	Average score*
Basic Metals	1.0	0.8	**0.9**
Textiles	0.1	1.0	**0.6**
Food Products	0.4	0.5	**0.5**
Other Non-Metallic Mineral Products	0.3	0.4	**0.4**
Motor Vehicles, Trailers and Semi-Trailers	0.4	0.3	**0.4**
Chemicals and Chemical Products	0.3	0.4	**0.3**
Pharmaceuticals	0.4	0.3	**0.3**
Wearing Apparel	0.2	0.5	**0.3**
Fabricated Metal Products	0.1	0.4	**0.3**
Computer, Electronic and Optical Products	0.1	0.4	**0.2**
Other Transport Equipment	-	0.5	**0.2**
Electrical Equipment	0.2	0.2	**0.2**
Machinery and Equipment N.E.C.	0.2	0.2	**0.2**
Beverages	0.4	-	**0.2**
Paper and Paper Products	0.2	0.1	**0.1**
Rubber and Plastics Products	0.2	0.1	**0.1**
Furniture	0.1	0.1	**0.1**
Leather & Related Products	0.0	0.1	**0.1**
Wood and of Products of wood and cork	0.1	0.0	**0.1**

*Relative scoring of each sector on sector-attractiveness and relative comparative advantage.
Source: Study team analysis based on the scores received from sector shortlisting framework for ICIC.

42. As a result, six target industries/sectors are proposed for the initial phase of ICIC development. These are (i) food processing (meat, dairy, tomato), (ii) pharmaceuticals; (iii) textile and apparel; (iv) fast moving consumer goods (FMCG) and other chemicals, (v) motor vehicles and parts, and (vi) basic metals and advanced manufacturing.[19] (see Table 8).

Table 8: Shortlisted Sectors for ICIC Development

Sector	Remarks
Food Processing	The sector is sensitive to time and requires high management control. Meat, dairy and tomato processing to be prioritized.
Pharmaceuticals	Both Kazakhstan and Uzbekistan are heavily import dependent for their pharmaceutical needs.
Textile and Wearing Apparel	Uzbekistan is a large producer of cotton yarn and exports majority of its produce to neighboring countries
FMCG and other chemicals	Consumer goods such as detergents, soaps, cream etc. under specialty chemicals to be prioritized
Motor vehicles and parts	Value – added manufacturing and ancillary manufacturing development of metals sector
Basic metals and advanced manufacturing	Scope to develop advanced manufacturing capabilities by Kazakhstan and Uzbekistan thereby leveraging raw material supply from Kazakhstan

Source: Study team analysis based on the findings of sector-wise procedural requirements and time sensitivity from secondary sources.

[19] Fast-moving consumer goods (FMCG) are nondurable products that sell quickly at relatively low costs. FMCGs have low profit margins and high-volume sales. Examples of FMCGs include detergents, toiletries, home cleaning products, cosmetics, etc.

43. These shortlisted sectors are largely congruous with the list of priority industries for the ICIC that the governments of Kazakhstan and Uzbekistan agreed on. During the stakeholder consultations conducted with Government of Kazakhstan and Uzbekistan it was observed that industry focus for ICIC is towards advanced and value-added manufacturing sectors such as automobile, and advanced metallurgy. Impetus must also be given to light manufacturing sectors such as food processing, textiles and wearing apparels, pharmaceuticals and FMCG as these sectors have higher relative comparative advantage.[20]

44. The sub-sectors shortlisting has been conducted keeping in view the end objectives for ICIC development to develop a transboundary industrial hub, and to encourage manufacturers from both countries to leverage raw materials and technology from the other country and expand their market reach. Hence, the sub-sectors shortlisting follows these principles:

- **Trade complementarity between Kazakhstan and Uzbekistan**: Kazakhstan and Uzbekistan have a current trade of about US$3.9 billion which is expected to rise to US$10 billion in the coming years. It is thus important to look at the products which are heavily traded between Kazakhstan and Uzbekistan as these products are the major opportunity areas for ICIC.
- **Leverage raw material and technology**: Both countries are mineral–rich with large deposits of metal, non-metallic minerals, and oil reserves. This gives rise to large opportunities for value-added manufacturing, thereby encouraging downstream and ancillary production from such raw materials.
- **Overlap with existing manufacturing ecosystem in Atameken-Gulistan region**: The sub-sectors in ICIC which have no higher industrial footprint in the Maktaaral and Syrdarya region, but equally important to achieve the stated development objectives shall be further encouraged within ICIC.

45. Furthermore, the availability of certain factors of production for these shortlisted sectors have been assessed such as availability of raw material, existing industrial ecosystem, environmental consideration, skill and technology availability, availability of utilities, and market access. Availability of these factors of production have been further used to assess and shortlist the sub-sectors and products for ICIC.

46. Turkestan is the production hub for fresh fruits and vegetables, so food processing is a feasible sector for prioritization in the ICIC. Confectionary and wheat processing are two categories that could be encouraged. Given that Uzbekistan and Afghanistan are large buyers of Kazakh wheat grains and flour, the ICIC could facilitate processed foods to the markets in the south such as Afghanistan, Tajikistan, and the Middle East. Although tomato ketchup and puree have a high potential, the Gulistan region surrounding ICIC location has presence of vegetable processing and preparations industries.

47. Both Kazakhstan and Uzbekistan are import dependent in case of pharmaceuticals where 86% and 74% of the total drugs consumed by the two countries are imported respectively. Approximately 70% of the imports are medicaments and vaccines. As part of phase-1 of development in this sector, the two countries can focus on formulation of biosimilar drugs which essentially involves API sourcing from partner countries, mixing, blending, tableting, and packaging for domestic consumption and exports.

48. Textiles and wearing apparel is another sector with higher opportunity within ICIC. Uzbekistan currently produces 675,000 MT of cotton per annum and is the 2nd largest cotton exporter in the world. Despite a high supply of raw material, the country imports fabrics, man-made textiles, wearing apparels, knitted fabrics, etc. Kazakhstan has a smaller textiles industry

[20] These are the sectors which have a neutral-to- high presence in the region with an existing production capacity base. These sectors can be further diversified to advanced manufacturing and upward/downstream integration.

in terms of output and GVA, mainly relying on imports from PRC, Russian Federation for wearing apparels and fabrics. Hence, in order to create an import substitution opportunity, ICIC can attract sub-sectors such as polyester yarn, man-made fibers, ready-made garment factories and zip-fasteners so that the two countries can operate and control the entire value chain of garments within their own region. Processing of leather and wool and further production of apparels and accessories also has a huge potential due to availability of raw material and skills. However, due to environmental considerations and the potential impact on existing food and pharma clusters proposed in ICIC, the production of final products such as bags, belts and other such accessories can be explored.

49. Uzbekistan and Kazakhstan have a large raw material base for chemicals and allied products. Government of Uzbekistan and Kazakhstan are setting up production plants for polyethylene pipes and polypropylene with expected capacity of 500,000 tonnes per year. The regions are expecting to domestically produce these polymer pipes not only as import substitution but also to enhance exports in the neighboring countries. Other raw materials such as petrochemical byproducts, soda ash, sulfate compounds, etc. are available in the region. Uzbekistan imports chemical products such as soap, surfactants, soap bars and other such FMCG products from Kazakhstan. The production of these products within ICIC will reduce the lead time to market for Kazakhstan manufacturers to reach the Uzbek market and will optimize the supply chain. Thus, potential opportunities are identified in product segments such as paints, varnish and coatings, plastic and PE products, and FMCG products such as detergents, shampoo, surfactants, etc.

50. Kazakhstan and Uzbekistan have rich metal and minerals reserves. Kazakhstan is among the largest exporter of raw metals (about US$10 billion) whereas Uzbekistan exports US$1.6 billion worth basic metals (as of 2021). The major products exported from the two countries include raw materials such as copper, copper alloys, iron ores and concentrates, unwrought aluminum, and zinc. The two countries rely heavily on imports of semi-finished and finished metal products such as flat rolled products of iron and steel, articles of iron and steel and articles of copper, aluminum, and zinc worth US$6.4 billion as of 2021. Furthermore, Uzbekistan imports a sizeable quantity of semi-finished products of iron or non-alloy steel, copper ores and concentrates, zinc ores and concentrates from Kazakhstan. A joint production unit in ICIC can thus be setup where Kazakhstan can supply the raw material and Uzbekistan can provide the necessary technology support in value added products. These include construction materials (such as TMT bars), rolled sheets, copper and iron wires and coils used further by automobile industry, steel bars (SBQ), etc. Production of parts, components, sub-assemblies, tools, intermediaries for heavy machinery sector can be possible ancillary and downstream activity from metals which can be explored as well.

51. Automobile sector in Uzbekistan comprises state-owned joint ventures (JVs) with automobile OEMs such as MAN, ISUZU, Peugeot Citroen, Volkswagen, and General Motors where the global OEMs provide semi-knocked down units (SKD) to the units in Uzbekistan which in turn have setup assembly lines for passenger cars and buses. However, given the increasing demand of road transport and the presence of assembly OEMs in the Syrdarya region, ICIC can create automobile components and parts supplier ecosystem for achieving higher degree of localization. This will also give an impetus to the metals sector of Kazakhstan. Hence, the sub-sectors identified for ICIC include chassis and engine parts, brakes and gears, and body cabin parts (see

52. Table 9 for the complete list of shortlisted sub-sectors for ICIC).

Table 9: Shortlisted Sub-sectors for ICIC

Sector	Priority Sub-sectors and Products	Key Requirements for ICIC

Food Processing	Wheat processing, meat products	• Availability of clean water • Temperature controlled warehousing • Uninterrupted power supply
Pharmaceuticals	Formulation of biosimilar drugs	• Clean water supply • Cold storage facility
Textile and Wearing Apparel	Man-made fibers, ready-made garment factories and zip-fasteners	• Uninterrupted power supply • Covered storage facility
FMCG and Chemicals industry	Paints, varnish, coatings, plastics, surfactants and other FMCG products	• HT power lines • ETP and CEPT • Recycling units for wastewater
Basic Metals and advanced manufacturing	TMT bars, rolled steel products, copper wires, aircraft engine and body parts	• Captive power generation • Cargo handling terminal • ETP, STP measures
Motor Vehicles and parts	Chassis and engine parts, brakes and gears, and body cabin parts	• High tension power supply

Source: Study team analysis derived from Value Chain Assessments conducted for all the shortlisted sectors

C. Incentive Structure

53. The ICIC is a proposed industrial cluster located at the border of Kazakhstan and Uzbekistan. ICIC aims to fulfil objectives such as achieving import substitution, improving self-reliance, especially in highly traded commodities, minimizing job loss, and promoting value-added manufacturing for both countries. Kazakhstan and Uzbekistan both have an established industrial and manufacturing base, for domestic and export-oriented units (SEZ clusters). Additionally, the two countries also provide sector-wise fiscal incentives and adopt ease of doing business (EoDB) measures to attract foreign investment and increase the quantum of direct participation by multinational companies in manufacturing and services sector. In this section, the current incentives which are provided by both the countries under different scenarios have been mapped alongside the ease of implementation of these schemes and policies. Also, a modern–day incentives structure is proposed for ICIC which can enhance shared benefits for both countries by benchmarking against global best practices in incentives structure.

Incentives in Kazakhstan

54. The Kazakhstan Government offers both fiscal and non-fiscal incentives for investors conducting business in Kazakhstan. The state support for investments consists of granting incentives under two categories of investment projects and investment priority projects.

55. The investment projects are provided tax exemptions on value-added tax (VAT) on import of raw and intermediary material, on custom duties for imports on machinery, technological equipment, and spares (up to 5 yrs.), and are given grant (in kind) by means of land parcels, buildings and facilities owned by the government.

56. The investment priority projects in addition get investment grants by up to 30% reimbursement on cost of construction, installation works, equipment purchase cost (for MCI > 5,000,000).

57. Apart from the fiscal benefits offered on a project–to–project basis, the government also offers benefits to participants of the SEZs and Industrial Zones. There are 13 SEZs in Kazakhstan receiving offers of tax exemptions, customs privileges, and other incentives to participants. The benefits passed onto SEZ participants are as follows (see Figure 3):

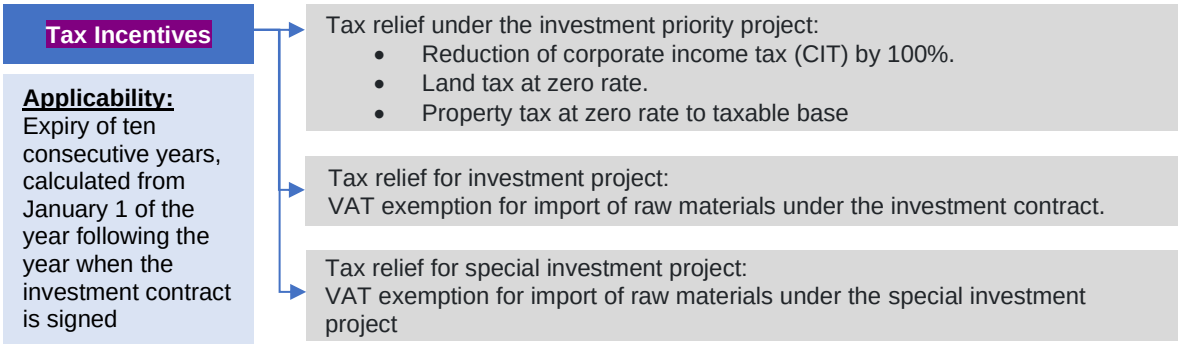
a) Tax Exemptions:

- 100% CIT exemption
- 100% land tax exemption
- 100% property tax exemption
- No value added tax (VAT) levied on sales of goods on SEZ territory, which are fully consumed in the production process

b) Customs Privileges
- Exemption from custom duties for goods imported in SEZ area

c) Other incentives:
- Infrastructure availability
- Free Land allotment for up to 1x0 years
- SEZ management body that coordinates and ensures provision of land, internal infrastructure and utilities, engineering network, permissions for operations / establishment, etc.

Figure 3: Fiscal Incentives Offered to Investors in Kazakhstan



Sample benefits of Priority Investment Project (Metallurgical manufacturing sector)	
New industries (the investment amount >2 million MCI)	**Extension/updating of existing facilities (>5 million MCI)**
• CIT (10 years) • Land tax (10 years) • Proper tax (8 years) • Exemption from custom duties (5 years) • Government grant (30% of total investments) • Investment subsidy: Provided by compensation of up to 30% of the cost of construction and installation works and purchase of equipment, excluding VAT and excise taxes	• CPN (3 years) • Exemption from customs duties (5 years) • Government grant (30 % of total investments)

Source: Kazakhstan Investment Portal

Incentives in Uzbekistan

58. The Uzbekistan government offers benefits and preferences to foreign investors in the form of tax incentives, and trade incentives. Preference in incentives disbursement is provided to upcoming units in less developed regions of the country (see Figure 4).

59. The preference for incentives is also given to foreign investors holding a minimum of 33% shares in the authorized fund and minimum of 15% in joint stock company. Also, the Uzbekistan government states that at least 50% of the earnings should be re-invested for further development of the enterprises.

Figure 4: Incentives Offered to Investors in Uzbekistan

Source: Uzbekistan Investment Portal

Framework for Incentives for ICIC

60. As ICIC shall be a joint manufacturing facility between Kazakhstan and Uzbekistan, it shall aim to attract investors from both sides of the border and from outside the two countries as well. Therefore, a strong incentives policy needs to be in place to make ICIC an attractive destination for investors. The framework for incentives, as followed by many other developing nations, is to make the manufacturing ecosystem more cost competitive vis-à-vis its competitors and/or import partners. The "Cost to Serve" assessment has been conducted to analyze the key areas where ICIC can improve to make investments more attractive.[21]

61. "Cost to Serve" has been conducted between four countries—Kazakhstan, Uzbekistan, PRC, and India—on six major parameters: upstream logistics cost, land, labour, water, power cost, downstream logistics. The cost to serve in this case has been conducted for automobile components and parts manufacturing sector.

62. The assessment indicates that transportation is one of the highest contributors (above 80%) to per ton cost of production in Kazakhstan and Uzbekistan. Moreover, the governments of Kazakhstan and Uzbekistan provide a no-cost land to their investors in designated industrial parks. A suitable incentive package should be designed for ICIC which can reduce the operating expenses and make manufacturing in the region more competitive than importing products. Table 10 shows the different costs incurred for production of 1 ton of automobile components.

Table 10: Manufacturing Cost to Serve for Automobile Component Industry

Cost Built Up (per ton in US$)				
Items	**Kazakhstan**	**Uzbekistan**	**PRC**	**India**
Upstream logistics	**1100**	**1900**	**37**	**73**
Power	3	3	5	6
Labor	35	38	43	37
Water	9	26	18	31
Land	0	0	283	197

[21] Manufacturing Cost to Serve is a methodology to compare region-wise total cost taken to serve / deliver the products in the market right from raw material to finished product stage.

Downstream logistics	75	55	7	61
Total cost	**1222**	**2022**	**393**	**405**
Export Cost (Central Asia)	-	-	400	400
Total Cost to Serve	**1222**	**2022**	**793**	**805**
Sample Incentives Impact on cost:				
Transport incentive (at 30%)	330	570	-	-
Water incentive (at 20%)	-	5	-	-
Operating expense (at 10%)	122	202	-	-
Effective cost (per ton)	**770**	**1244**	**793**	**805**

Source: Study team analysis based on data on transport cost and existing manufacturing ecosystem collected from CEIC database and other secondary research

63. The analysis shows that production and transport of products from PRC or India to Kazakhstan and Uzbekistan are effectively cheaper than production within the region despite of no land cost to be paid upfront. The cost for road transport is significantly higher (US$0.7-1 per ton per km) as compared to other regions (US$0.04-0.06 per ton per km). Hence, if the upstream cost is reduced by 30% as part of the incentives structure, the total cost of production will be reduced. Further, if other operating expense heads are given a blanket 10% subsidy, the production cost will be at par or even lower than importing from PRC or other southeast Asian countries.

64. Thus, the incentive structure for ICIC can include a combination of (i) fiscal incentives; (ii) incentives for infrastructure development; and (iii) incentives for business opportunities, with an objective to reduce the overall cost of production as highlighted above. The different categories of incentives are outlined below. The incentives framework should be developed with reference to the criticality of various factors of production and availability of these factors in Kazakhstan and Uzbekistan, with an aim to reduce the overall operating cost for the investor.

65. Fiscal incentives:

- Direct tax benefits
- Property tax benefits
- Land cost and registration duties
- Sector-wise production linked incentives
- Rebates on utilities cost
- Capital subsidies for creation of new units
- Employment generation subsidy
- Logistics cost reduction

66. Incentives for infrastructure development:

- Utilities and internal infrastructure
- Labor housing facilities
- Warehousing infrastructure
- Incentives for introduction of new technology/infrastructure for R&D
- Single window clearance for setting up of new units
- Inhouse quality certification and documentation

67. Incentives for business opportunities:

- Automatic clearance for access to countries under FTA with Kazakhstan and Uzbekistan
- Ability to transact in foreign currency
- Joint investment desk between Kazakhstan and Uzbekistan

68. Appropriate fiscal incentives can also be provided to investors on capital and/or operating expenditure. The capital incentives can include a one-time subsidy on the land cost or subsidy on the total fixed capital investment subject to the size of investment and period of operations. Other such incentives may include exemption on land registration charges, one-time installation of machinery, exemption of import duties on the new machinery imported for production, and subsidy on any sustainable measure adopted by the investor. These incentives are dependent on the actual cost incurred by the investor and not on the production or turnover earned. Two types of incentives—performance linked incentives and overhead linked incentives can be applied:

- Performance linked incentives or the tax-based incentives are dependent on the turnover and revenue performance of investors. This type of incentive is currently provided by both the governments of Kazakhstan and Uzbekistan.

- Overhead linked incentives include providing employment generation subsidy for local residents to reduce the cost of salaries and utilities.

D. Institutional Models

69. The cross-border industrial cooperation zones such as ICIC require formal institutionalization to facilitate close coordination and collaboration between authorities on each side of the border. Such institutional models can ensure efficient decision making in implementing infrastructure projects and policy implementation, minimizing the associated risks.

70. Kazakhstan and Uzbekistan have agreed to adopt individual jurisdiction governing the operations on their respective sides. This means that operators on both sides of Kazakhstan and Uzbekistan will comply with their national laws, regulations, and standards respectively. This is a right approach because in the short term, harmonization of the laws and regulations would be administratively impractical. Besides the bilateral efforts, the EAEU charter would also deter a single unified ICIC since Uzbekistan is not a member. However, it is strongly proposed that some form of a unified law be developed and ratified to ensure that the ICIC be jointly managed in future to realize the full potential and efficiency, to be implemented through an intergovernmental agreement. For example, having a separate set of compliance standards hinders the free movement of goods within the center, and there will be duplication of resources and shipments subject to repeated border and customs controls despite the transboundary nature of the ICIC.

71. Development and governance of transboundary industrial centers has followed various institutional models in different parts of the world. Drawing these experiences, two institutional models are proposed for ICIC, namely, the dual entity model and the single entity model (see Table 11).

Table 11: Proposed Models for ICIC Development

Particulars	Option A: Dual-entity Development	Option B: Single-entity Development
Placement of assets	- Either side to have all sorts of processing and non-processing elements	- A combined Free Economic Zone consisting of both processing and non-processing areas spread across Kazakhstan and Uzbekistan
Ownership	- Either side to have a controlling right to their respective region	- Both the countries to have ownership rights as per the invested amount

Particulars	Option A: Dual-entity Development	Option B: Single-entity Development
Institutional Framework	- Incorporation of separate companies by both countries for development of either side of the border within ICIC - The companies to be guided by a steering committee with equal representation from either side - Steering committee to be constituted basis inter-governmental agreement	- Intergovernmental agreement to act as the instrument to guide the operations and implementation of ICIC - The agreement to have alignment on incentives, customs, clearance procedures, quality specifications, etc. - Constitution of a single entity with equal representation from Kazakhstan and Uzbekistan - Ownership for the company to be decided as per the shareholding pattern of both the countries
Investment	- Investment made in terms of land and development cost by the two countries for their respective regions	- Investment made in terms of land and development cost by both countries for joint development of ICIC
Management Committee	- Independent management committees to run operations for either side of ICIC, reporting to a unified board of directors	- A single management committee handling operations and maintenance for entire ICIC on both sides of the border
Profit Sharing and earnings	- Each side of the border responsible for their respective business opportunity development	- Profits shared equally by the SPV formed between both the countries or as per the ownership pattern in the SPV
Major Benefits	- No change required in policies and regulations for both countries	- Optimized utilization of land area - Higher opportunity to gain benefits from shared resources
Major Challenges	- The model shall promote dual ownership on the border with independent control by either side of the country on their respective territory, thus compromising the aim to harmonize the trade and manufacturing between Kazakhstan and Uzbekistan - Requirement of larger area of land on both sides of the ICIC border to place processing and non-processing zones on either side	- Policies and regulations pertaining to customs, rules of origin, incentives, tax beneficiary, PPP laws, company incorporation and other such regulations need to be modified for both countries - Need stringent laws to enforce and ensure that both the countries adhere to the operating guidelines as agreed upon by the two countries

Source: Study team analysis based on case studies on the management practices of industrial zones

72. **Dual entity model.** In this model, the two participating countries shall own their respective asset i.e., the part of ICIC built on Kazakhstan land can be owned by Kazakhstan side forming a Kazakhstan state owned company and similarly the part built on Uzbekistan side can be owned and managed by Uzbekistan state owned company. The state-owned enterprises on either side shall be managed by a board of directors with day-to-day management being carried out by a full-time chairperson.

73. The board of directors shall constitute various committees to carry out important functions such as audit committee, working committee for either side of the enterprise. To

jointly support the development of ICIC, a steering committee or an intergovernmental supervisory board consisting of senior officials of the relevant ministries from both countries shall be established to provide strategic guidance and recommendations for the development and operations of ICIC. The steering committee shall have equal representation from the key ministries (also part of board) of each participating country as well as the representation of provincial or state administrative councils.

74. Since the ownership of the assets on each side in dual ownership model shall be retained by the respective government, the government shall retain rights of operations while they can choose to hire third party developers for engineering, procurement, and construction of ICIC.

75. **Single entity model**. Under this model, the ICIC shall be set up as a joint venture between Kazakhstan and Uzbekistan. Each government shall be shareholders depending on the amount of land provided by each country to develop the ICIC. Both governments shall be party to a bilateral intergovernmental agreement that shall describe the terms of management of the joint venture created and be responsible for developing the legal basis for it.

76. To implement the single entity model for ICIC, each country can first set up a consortium (a temporary partnership based on the agreements between two or more entities) comprising of different state-owned major enterprises as the investors to perform shareholding obligations in the company. The resultant joint venture shall have an intergovernmental supervisory board led by the chairman/senior official of one of the relevant ministries elected depending on the equity share of the ministry in the joint venture. In case of equal shareholding, the chairman can be nominated from either country on a rotational basis followed by two-vice chairmen (one from each country) and then the executive team containing heads of various departments. The list of functions that can be carried out by resultant joint venture is as follows:

- Interaction with central and local government entities on the functioning of the industrial zone
- Provide for secondary land use or sublease of land plots and infrastructure to the tenants of the industrial zone
- Conclusion and termination of lease agreements
- Investment promotion and developing a marketing strategy for industrial zone
- Monitoring the implementation of the terms of agreements on the implementation activities of industrial zone

77. **Pros and cons of proposed entity models**. Developing ICIC through dual entity model can facilitate operation and implementation by avoiding the need to change current trade and investment laws as both countries can freely apply their respective laws related to ICIC. However, this model has associated disadvantages such as unharmonized trade laws which would be a significant impediment for the successful implementation of ICIC.

78. It is well observed that the state-owned enterprise ownership model is a dominant mode in Central Asian countries. Most joint stock companies operating in these countries have some degree of ownership and control by the government. Therefore, considering the maturity of such ownership model prevalent in both Kazakhstan and Uzbekistan, developing ICIC with state ownership can have advantages in ICIC's operation and implementation. However, the downsides are low efficiency due to low private participation, cost overruns and fiscal burden on the government.

79. As highlighted earlier, there are various operational hindrances due to unharmonized trade procedures at the border. Therefore, the single entity model for ICIC jointly invested by both countries can solve such issues by developing a single set of norms applicable for ICIC and followed by both countries. This model also gives further room for improvement after

ICIC's establishment as there will be a single entity in charge of all assets, making coordination easier among the stakeholders. The single entity model also reduces the chances of mismanagement arising out of coordination issues. However, possible misalignment of objectives of multiple stakeholders from the two countries pose risks and should be considered and mitigated.

E. Components

80. The ICIC is likely to include multiple internal components such as office building, manufacturing zone, access to modern border crossing point (BCP) for movement of cargo and people, and logistics center, etc. In addition, other supportive measures such as a favorable legal and regulatory framework for grievance and dispute settlement, along with good utilities infrastructure is critical for ICIC.

81. A framework consisting of two broad parameters (economic rationale and attractiveness to investors) has been developed to identify and shortlist components for ICIC. These parameters are further subdivided into three sub-parameters to determine the specific components of ICIC (see Appendix 2 for details).

82. Using the methodology and taking into consideration the limited available land (total of 100 ha), four components with key functions for ICIC are identified for the initial/first phase of ICIC under the single entity model.

i. **A manufacturing zone**. A manufacturing facility within the ICIC will allow the industries from both Kazakhstan and Uzbekistan to conduct value-added processing and get access to a shared resource base and gain access to a larger market.

ii. **An office building.** The office building will provide a working environment for primary administrative and managerial staff working for the ICIC.

iii. **A utilities zone**. A utilities zone will manage the supply of essential utilities such as water, modern power storage, waste management, and other necessary facilities to ensure the operation of ICIC.

iv. **A logistics zone**. A logistics zone with warehouse facility inside ICIC will enable industries to manage their inventories more efficiently by bridging the gap between production and utilization of the products. Facility with storage hubs including cold storage for perishable goods, cargo handling centers, distribution centers and packaging facilities will enhance the competitiveness of the ICIC in terms of cost and reducing lead time to market.

83. These components should be included in each side of the ICIC if the dual entity model is selected for ICIC. Depending on which institutional model to be implemented, several additional components can be included in the ICIC during subsequent phase/s of its development if Kazakhstan and Uzbekistan allocate additional land area to the ICIC. These include:

i. **A custom clearance zone** to provide the service for customs clearance and facilitate the goods produced in the ICIC and elsewhere passing through the BCP.

ii. **A border crossing point (BCP)** will serve for goods used or produced in the ICIC and for people working in ICIC, facilitating the faster movement of goods produced within the ICIC.

iii. **One or several laboratories** that can carry out food safety, veterinary, phytosanitary and/or pharmaceutical quality tests that are essential for goods used or produced in the ICIC.

iv. **A training center** will conduct training and facilitate the development of businesses including small scale enterprises in the ICIC. The training center can offer specialized

training programs to businesses to upskill the workforce to meet business needs. The presence of such training institutes shall also enhance the competitiveness of the businesses in regional and international markets.

v. **Trade facilitation center (exhibition center)** will facilitate trade between Kazakhstan and Uzbekistan and beyond by connecting buyer-seller needs, conducting meetings and exhibitions for products, thus expanding the business-to-business network for domestic manufacturers.

vi. **A wholesale market** will help manufacturers to have better market access and traders to have better access to customers, thus, shortening the supply chain.

F. Zoning Plans

84. Zoning plans for ICIC in the prefeasibility study phase aim to provide an overview of the possible layout for ICIC and its internal components. Zoning plans are based on two phases of ICIC development: (i) the first/initial phase with 100 ha of land that the two countries have so far allocated to the ICIC, with four components included in ICIC (see para 53); and (ii) the subsequent phase/s for the expansion of ICIC if additional land are allocated by both governments at a later stage, with additional six components included in ICIC (see para 54). Further, zoning plans for ICIC have taken into consideration following elements, some elements are for consideration in the subsequent phase/s:

i. Utilize the existing space and infrastructure of the Maktaaral district

ii. Create movement and inspection space for heavy cargo trucks, including movement of cargo from warehouse to customs checkpoint

iii. Form a dense stack-up warehousing facility to create more ground space for ancillary development

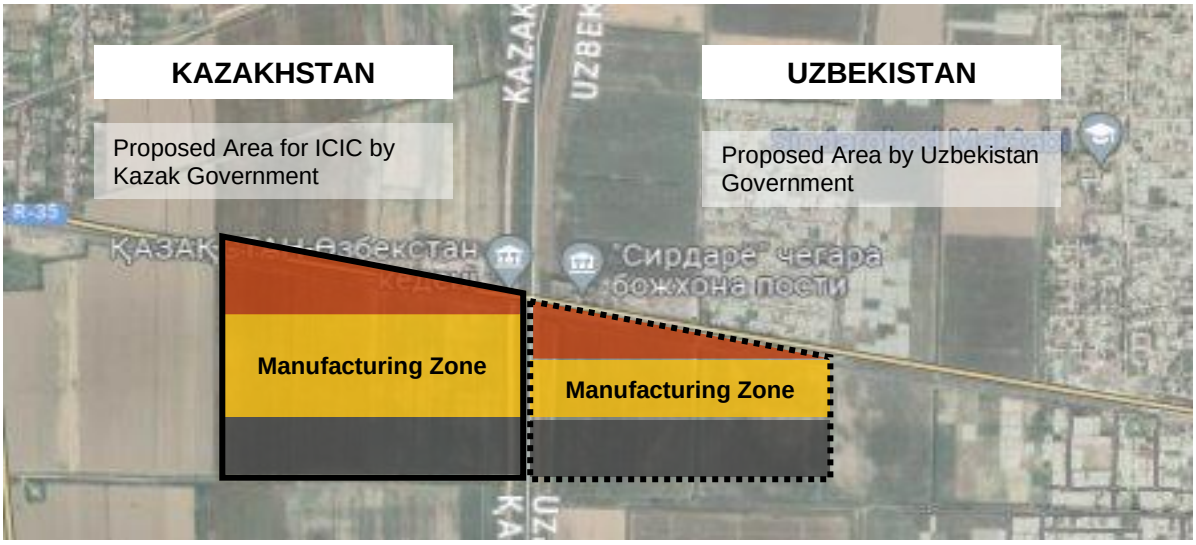
iv. Create a manufacturing facility as per the prescribed buildings code for Turkestan and Syrdarya provinces which should be well connected with the non-processing zone for seamless movement of cargo and people

v. Create internal routes and connecting infrastructure for easy movement of cargo from security checkpoint (gate-in)–warehouse–value-added services facility–trucking and weighbridge–customs clearance zone

vi. Place wholesale market, duty-free shops, and other support infrastructure in a separate zone.

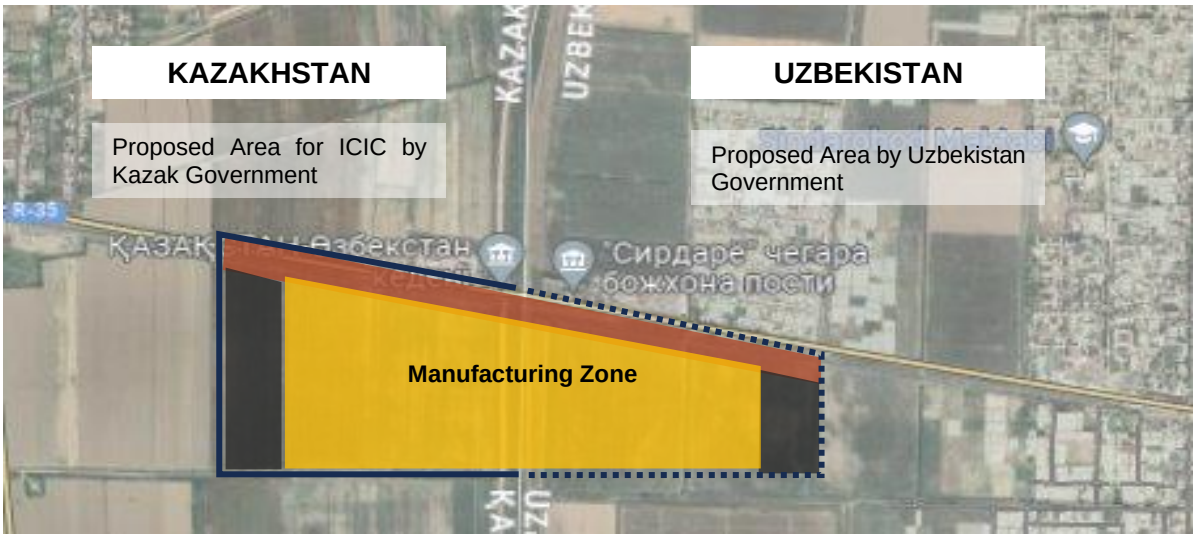
85. As discussed above, the ICIC can be built based on two entity models: a dual entity model and a single entity model. The zoning will be different under each entity model. Figures 5 and 6 demonstrate the zoning of ICIC under initial/first phase of development with 100 ha land allocation, under the proposed two entity models. Under the dual entity model, each side will have (i) a manufacturing zone, (ii) an office building, (iii) a utilities zone which will include modern power storage and waste management facilities and (iv) a logistics zone which will include a modern warehouse, a cold storage facility, parking lots, a loading/unloading yard (Figure 5). Under the single entity model, the ICIC shall be combined into one single entity without demarcation on either side of the border. The model shall feature shared facilities of the four components (Figure 6).

Figure 5: Zoning of ICIC under Dual Entity Model



Source: Study team analysis based on information provided by the government stakeholders

Figure 6 : Zoning for ICIC under Single Entity Model



Source: Study team analysis based on information provided by the government stakeholder

G. Digital Technology Application

86. Applying digital technology will facilitate the operation of ICIC efficiently and transparently. The following measures are suggested to create a robust management ecosystem for ICIC:

i. Digitization of business processes to restrict informal trade including incorporating measures such as implementation of electronic filing of application for services provided by the SEZ management company.

ii. Digitization of land plots and real-time visibility of land allotment, acquisition status etc. This will include complete and reliable information about the size of the plot, the

availability of infrastructure and other facilities, the legal status of the plot, etc. This will allow potential investors to see land plots, determine for themselves a free and suitable plot and, as a result, apply for it for the implementation of an investment project.

iii. Installation and implementation of electronic ticketing system for parking, entry into ICIC duty free store, wholesale market, etc.

iv. Digitization of payments in ICIC to simplify the procedures for payment and for keeping an electronic tally of the same.

v. Improve surveillance at border crossing areas and across the ICIC perimeter.

IV. FINANCIAL ANALYSIS

87. A comprehensive financial analysis has been conducted to determine the financial viability of the ICIC. The analysis includes forecasts of revenue, expenses, and cash flow, through an examination of various market sources. Market research, analysis of similar companies, industry reports, and regulatory guidelines have been considered in the development of the financial model. This chapter presents a condensed version of the methodology and results of the analysis.

A. General Assumptions

88. The financial viability of the project was analyzed using the discounted cash-flow model for calculation of the net present value (NPV) of the future cash flows and the internal rate of return (IRR). In order to have a higher utilization of the capital investments, the financial analysis timeline is divided into two phases (two decades) that correspond to the anticipated demand levels in the region. The analysis takes into account the time needed to complete the relevant documentation, such as feasibility study, approval from the appropriate government representatives, etc. and anticipates that operating period will not start until 2027.

89. ICIC would receive revenue from renting out commercial spaces and leasing land for future manufacturing development and construction. The operating expenses (OPEX) are derived from the median value of OPEX to Revenue ratio of 75.2% based on the market analysis of comparable companies and other publicly available data. The ratio is reasonable as it was compared with comparable foreign companies with the same operating activity.

90. Capital expenditures (CAPEX) are divided into two phases based on the project timeline. The total project CAPEX amounts to $35.2 million, with most of the expenditures allocated towards buildings (40.0%), utilities (23.7%) and infrastructure development (18.9%). The cost estimates of analyzed comparable industrial zones in Kazakhstan were used for analytical and benchmarking purposes considering any potential structural differences. Analysis of the current state of the existing property and support facilities was not performed and revalued. Further CAPEX updates or adjustments are needed in the case of inadequacy or nonconformance of the current existing facilities.

91. The two financing scenarios are assumed for the investment period–Scenario 1 with 100% multilateral loan and Scenario 2 with a hybrid capital structure based on the market terms. Additionally, Scenario 2 has a different option with tax benefits and a Viability Gap Funding (VGF). The table below describes the key assumptions undertaken during financial analysis.

Table 12: Description of Assumptions

	Components	Description
1	Timing assumptions	• Construction period: 2024-2026 • Operating period: 2027-2046
2	Macroeconomic assumptions	• The macroeconomic assumptions were based on the forecast provided by the IHS Markit agency for the Republic of Kazakhstan. The two key macroeconomic indicators that were considered in this analysis were the consumer price index and the exchange rate.
3	Rental rates	• Rental rates are based on the available market data on real estate in Kazakhstan and Uzbekistan, data of comparable special economic zones and logistic centers. • As part of the financial analysis, market rental rates are as follows: i. Warehouse rental rate – 1.5 per m^2 ii. Rental rate for industry support facilities – $3.4 per m^2

	Components	Description
4	Volumes	• The ICIC area (100 ha) was functionally divided into 78% for processing zone, and 22% for non-processing zone including allocation of social infrastructure, and customs office, open space and etc. • Revenue from long-term lease of land was assumed as the payment received for a long-term leasing of a specific area within the processing zone of ICIC (192 acres or 78 ha) to potential investors at the start of its operation for further construction and development of manufacturing objects. The amount of land available for leasing each year from 2027 to 2036 has been determined in the Demand Assessment. • According to the Land Code of Kazakhstan, the state-owned land plots for special economic zones or industrial zones are provided for temporary fee-based land use (rent). Since the legal status of ICIC is not yet defined, the land leasing price is calculated as the average of cadastral and market value of land. The cadastral value is determined based on the normative cost of one square meter of land by the land-offtake and specific indices, which are dependent on location of the land parcel, settlement type, and duration of the lease, in accordance with Land Code of Kazakhstan. The market value of land was determined by examining publicly available sale offerings. • Based on the market analysis, the average occupancy rate for warehouses was applied at the level of 80%. The occupancy rates of commercial and office spaces during the start of operation were set at 60% and gradually increasing to 80% over the next 10 years of operation to align with market levels.
5	OPEX	• OPEX to Revenue ratio is based on the median value of comparable companies that specialize in development and management of industrial parks, industrial estates, and zones at the level of 75.2% (See Table A2. 2).
6	CAPEX	• The total CAPEX for all categories was determined by multiplying the unit costs by the estimated ICIC area and the unit costs from publicly available information and local authorities. • The estimated project CAPEX per ha for ICIC is $325.4 thousand (CAPEX details in Table A2. 3). We have analyzed industrial zones of Kazakhstan with publicly available financial information and comparable operational activities. Potential structural differences between the companies have been adjusted to correctly analyze on a per hectare basis.
7	Financing	• Financing Scenario 1–100% multilateral loan. Financing Scenario 2A–capital structure with respective shares of 48% and 52% for equity and debt based on the market loan terms and with the involvement of a private partner (see Table A2. 4). • The interest rate of 6% for multilateral loan is determined as multilateral organizations mark-up (2%) and the risk-free rate (4%) based on the official information sources. The interest rate for scenario 2 is based on the average weighted long-term interest rate on loans issued by commercial banks in US$ (12.1%) according to the National Bank of Kazakhstan. The repayment terms were applied for financing scenarios in accordance with the market analysis of infrastructure projects with the repayment from international financing institutions in the region. • The project's operation period begins only three years after the initial loan is issued, we consider a short-term loan to cover cash gaps. According to the National Bank of Kazakhstan, the interest rate is based on the average weighted interest rate on commercial loans in US$ with less than a year maturity (5.1%). In the absence of these financing options, it is assumed that more funding from the investor or attracting additional loans and grants from the government will be required.

	Components	Description
7	Financing	• For financing Scenario 2B, it is assumed that ICIC will receive VGF in the form of tax benefits and government subsidies. The financial viability of the ICIC would be improved by VGF in the amount of $24.1 million, which could cover the CAPEX for site preparation, utilities, roads, logistics, open space, and part of the social infrastructure facilities.
8	Discount rate	• The discount rate for Scenario 1 is assumed at 6% at the level of the debt. • The discount rate for Scenarios 2A and 2B is based on a build-up approach considering the market capital structure of the real estate building industry according to A. Damodaran. The CAPM method was used to determine the cost of equity, which included all relevant components and resulted in discount rate of 14.3%.
9	Tax	• Corporate income tax rate of 20% was applied in accordance with the Tax Code of the Republic of Kazakhstan.
10	Working capital	• The turnover period of 30 days for accounts receivable and 60 days for accounts payable was assumed based on the industry indicators (see Table A2. 6**Error! Reference source not found.**).

Source: Study team analysis

B. Financial Analysis Results

92. It is important to consider uncertainties and risks related to an investment project while examining its financial viability. The results of the financial analysis are only meaningful based on the assumptions made during the analysis. Moreover, considering the stage, specifics of the project and lack of observable data it is important to consider the results below along with the sensitivity of results to key components. Table 13 below displays the financial outcomes of the model for financing scenarios. Cash flows projections for 2024-2046 are presented in Appendix (see Table A2. 7). Based on the derived results, the project would be viable and have a positive NPV in the case of Scenario 2B that involves a VGF in the form of tax preferences and subsidies from the government.

Table 13: Results of Financial Analysis ($'000)

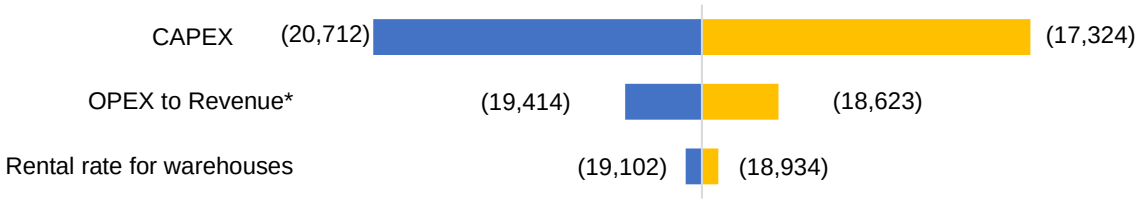
Indicators	Scenario 1	Scenario 2A	Scenario 2B
Project NPV	(20,241)	(19,018)	4
Project IRR	N/A	N/A	14.3%
Payback period	-	-	10

Source: Study team analysis

C. Sensitivity Analysis

93. Sensitivity analysis was executed for the results of the financial analysis and showed the effects of changes in its key assumptions. For illustrative purposes, the results of the sensitivity analysis of the project NPV under Scenario 2A are demonstrated below in tornado charts with increments (+10%/-10%). Detailed results of the sensitivity analysis are presented in Appendix 3.

Figure 7: Sensitivity Analysis for Project NPV (Scenario 2A) ($'000)



Note: *OPEX to Revenue (+5%/-5%)
Source: Study team analysis

94. The tornado chart shows that the CAPEX and OPEX have the largest impact on financial analysis results. Therefore, to maintain profitability of the project, stakeholders should pay close attention to costs management and optimize the process of maintaining an OPEX at the financially feasible at the stable and feasible level. The stakeholders should conduct a thorough review of the revenue assumptions to improve investment performance and project viability.

D. Conclusion

95. The expected funding conditions have a significant impact on the project's financial feasibility. Without VGF, the project is not financially attractive for potential investment from a private partner. Government support in the form of tax preferences (setting corporate profit tax payable zero) and additional subsidies that would cover CAPEX for site preparation, utilities, logistic, open space, and part of the internal roads in the amount of US$24.1 million could improve project indicators to 14.3% of IRR and result in positive NPV.

96. It is important to consider the potential effect of changes in financial model assumptions in sensitivity analysis with financial analysis results, especially for OPEX and CAPEX. For example, an increase in CAPEX by 10% would potentially make the project results more unprofitable. Cost optimization will improve financial viability accordingly.

97. The analysis results may be subject to changes if there are any changes in the assumptions or if new additional information becomes available. The results are only valid within the context of the assumptions made during the analysis. Any modifications or updates to the assumptions or new information could result in adjustments or changes to the analysis results.

V. KEY EXTERNAL ENABLERS

98. As mentioned above, the Governments of Kazakhstan and Uzbekistan decided to locate the ICIC near the Atameken-Gulistan multilateral BCP. These land plots meet the interest of parties and have the necessary infrastructure (primarily railway) to launch the project. It also has the potential for further expansion and development as needed. Such location of ICIC can facilitate economic growth in backward and remote settlements of both countries by creating new job opportunities through the development of ICIC. It can improve urban-rural connectivity by bringing closer more developed markets like Shymkent with less-served interior markets in Turkestan and Syrdarya provinces through improved transport connectivity. To achieve these objectives, both countries need to address infrastructure gaps and improve policy environment.

99. In terms of infrastructure connectivity, the ICIC site is located approximately 220 km and 90 km from the large consumer markets of Shymkent and Tashkent cities respectively. The railway branch line runs right along the ICIC site leading to the Maktaaral railway station (3 km). However, the Maktaaral railway station is not linked with Kazakhstan's main railway network, with the nearest station of the network (Darbaza railway station) located over 100 km away. Further, the ICIC site is not well connected with airports. The nearest airport to the Kazakh side of the ICIC is the Shymkent International Airport (about 230 km away), to the Uzbek side of the ICIC is the Tashkent International Airport (about 83 km away). Kazakhstan and Uzbekistan continue to experience problems with existing transport and infrastructure constraints such as single-track and non-electrified rail sections which limit the throughput of the main railway network. These factors impede the competitiveness of freight transportation services and connectivity by rail.

100. Several key external enablers are desired to ensure smooth functioning of the ICIC, and make it more attractive for businesses, increase its economic benefits and achieve its objectives. These key external enablers include legal and regulatory framework, transport connectivity, development of logistics services, facilitation of border crossing, and support for development of industrial parks and logistics centers, which are detailed below.

A. Legal and Regulatory Frameworks

101. The ICIC aims to bring both partnering countries on a common platform to increase trade and industrial cooperation. The development and operations for ICIC will require a set of both infrastructure and policy enablers based on the proposed institutional framework to coordinate policies and regulations. The policy and regulatory interventions for ICIC should be considered taking into account the existing policies governing operations in Kazakhstan and Uzbekistan, such as PPP laws and structuring, BCP movement, customs, SPS certifications, and visa permits.

102. **Under the dual entity modality,** Kazakhstan and Uzbekistan shall both have facilities to promote high value-added manufacturing in ICIC. The taxation on the territory of the FEZ shall be regulated by the respective tax legislations of Kazakhstan and Uzbekistan. The customs procedure of the FEZ shall be applied within the FEZ, where priority activities will be carried out.

103. Goods intended for placement and (or) use by persons carrying out priority activities in the territory of the FEZ in accordance with the agreement on the implementation of activities as a participant in the FEZ shall be placed under the customs procedure of the free customs zone.

104. Temporary storages shall be created on either side of the ICIC as determined by the customs codes of Kazakhstan and Uzbekistan. Customs operations related to temporary storage, customs declaration, customs clearance, and release of goods, as well as customs

control on the territory of the SEZ, shall be carried out as per the customs legislation of the EAEU, Kazakhstan and Uzbekistan.

105. The customs regulations shall be carried out in accordance with the provisions of customs legislation of Kazakhstan, EAEU on the Kazakhstan side and Uzbekistan Customs Code on the Uzbek side of ICIC.

106. Goods imported into the territory of the ICIC and placed under the customs procedure of the FEZ are considered as being outside the customs territory of the EAEU for the purposes of applying customs duties, taxes, as well as non-tariff regulation measures.

107. The ICIC provides a platform for creating seamless flow of goods which will increase overall trade flows between Kazakhstan and Uzbekistan. The facility should attract anchor projects for manufacturing which can then develop small and medium-sized manufacturing ecosystems in the area, hence increasing the overall economic growth of the region. The management committee may also need to work upon increasing the overall investment attractiveness of the region including:

- Create provisions to legalize the hiring of foreign labor in ICIC, including allowing swapping of labor between the Kazak side and Uzbek side.

- Create and/or extend incentive structure to attract foreign investment and encourage participation in manufacturing within ICIC in its respective side.

108. **Under the single entity model**, the conclusion of an inter-governmental agreement will govern all aspects of the ICIC development and operations. The agreement shall set forth the jurisdiction, formation of company law, country of origin, customs territory,

109. **Customs legislation**. Kazakhstan is a member of the WTO and EAEU. Kazakhstan applies EAEU customs code, which is aligned with WTO requirements, and its national customs code, which is aligned with the EAEU customs code. Uzbekistan applies its national customs code which is partly aligned with WTO requirements. As a result, there are observed differences and points of consideration on the customs code, and the regulations that should be followed by both countries unanimously in case of ICIC.

110. **Customs duties.** The ICIC facility shall plan to invite high value-adding manufacturing sectors from both Kazakhstan and Uzbekistan. The two countries, however, have very different customs duties for import and export of goods. For instance, import tariff for fish products, ready-to-eat edible preparations, processed food products from vegetables/fruits/nuts, and FMCG products such as soaps, detergents and essential oils is about 80% higher in Uzbekistan than in Kazakhstan. Import tariff of FMCG products in Uzbekistan from PRC and East-Asia Pacific nations is as high as 35% as compared to about 5% in Kazakhstan. Uzbekistan also has higher import tariff on dairy produce and processed foods from EU nations than Kazakhstan. Kazakhstan on the contrary has a higher import tariff on cereals and its products, and processed meat products.

111. The Most Favored Nation (MFN) import tariff from Uzbekistan in product categories like beverages, coffee, tea, oil seeds and fruits are about 80% higher than the imports from Kazakhstan. Import of fruits, meat preparations, and FMCG products (soaps and detergents) attract higher import duties when imported from Kazakhstan than Uzbekistan. Cereals and vegetables for instance attract 22% tariff when imported from Kazakhstan in PRC as opposed to 3-4% from Uzbekistan. This clearly shows how certain category of products and destination country mix may be more favored to be exported from Kazakhstan over Uzbekistan and vice-versa.

112. Further, Kazakhstan has a common market with the other EAEU member countries. It also has a free trade agreement with more countries than Uzbekistan has. This gives Kazakhstan a wider market acceptance and eases trade barriers compared to Uzbekistan. The traders and manufacturers from Uzbekistan may gain higher benefits from gaining direct access to a larger market from ICIC, without compromising the current tariff benefits directed to Uzbekistan. Hence, there is a need to gain clarity on determining Country of Origin for the products manufactured and exported from ICIC to other countries outside ICIC. The Country of Origin should be Kazakhstan in case the end destination is in Kazakhstan and the country of origin should be Uzbekistan if the products move in Uzbek territory for free circulation.

113. **Rules of origin.** The determination of origin of goods constitutes an important step towards customs clearance as this determines the tariff and non-tariff measures applicable when importing goods into the country. Kazakhstan and Uzbekistan recognize the origin of goods as the country where the goods were wholly produced and/or manufactured and a significant value addition was conducted (i.e., a change in the goods classification code according to the economic activity commodity nomenclature at the level of any of the first four digits, due to processing or significant increase in the goods value post processing). Both the governments allow the authorities to levy twice the amount of customs duty on the imports in case a certificate of origin is not provided. Kazakhstan provides an additional grant tariff preference in case of 'Direct Purchase' i.e., delivery of goods from the country of origin to Kazakhstan without them transiting through the territory of another country, provided that these goods remain under customs control in the transit countries. The treatment of direct shipment and purchases in case of deciding tariffs needs to be revised for ICIC.

114. The processing of goods under customs territory places the imported goods which help in further processing and manufacturing processes without attracting customs duties. In case of ICIC, the intergovernmental treaty should recognize and demarcate the goods from Kazakhstan and Uzbekistan vs other countries outside the two countries. Proper identification of imported vs domestic products should be specified as per the customs code of both countries.

115. The intergovernmental agreement should also specify the treatment of machinery and processing equipment imported from outside the customs territory of Kazakhstan and Uzbekistan. The equipment against which the import duties are paid off earlier (second-hand machinery) and the machinery re-allocated from Kazakhstan or Uzbekistan side to ICIC should not be subject to any further import duties.

116. **Investment laws.** Kazakhstan and Uzbekistan have existing laws on investment but not for a transboundary center. As an operator inside a FEZ or an Industrial Zone, the business has to adhere to production of one or more products under an approved list for the specific zone. If a business likes to produce products outside the approved list, the list needs to be approved by the government and this can take weeks or even months. The delay will be detrimental to businesses in making timely commercial decisions. In terms of investor protection, the ICIC will benefit from a more comprehensive and globally recognized set of rules. During the field visits, it is observed that most foreign businesses in manufacturing are from the PRC, the Russian Federation and Türkiye. The absence of major corporations such as European or American companies suggest that more could be done to attract firms from those firms. Kazakhstan made a notable progress in the establishment of the Astana International Financial Center (AIFC) which adopts international standards and uses English as the primary medium of communication. Mediation and arbitration are key aspects in investors protection, so the ICIC can have a branch office of the AIFC to function as an arbitration center.

117. Since ICIC is envisaged as a transboundary development, it may be necessary to address customs and immigration controls to deal with possible shuttle trade. Shuttle trade used to be rampant at the Ak Zhol-Kordai border between the Kyrgyz Republic and

Kazakhstan before the EAEU and is observed to be active at high traffic BCPs such as Dostuk between the Kyrgyz Republic and Uzbekistan. Known as “mardikory” in the Uzbek language, these shuttlers typically carry merchandise duty free across borders to escape duties and taxes, under a complex network of distribution points and channels organized by intermediaries. To avoid heavy congestion at the border, it is necessary to limit the amount of goods classified as personal belongings. A reference can be taken from how Kazakhstan tackles the retail purchase at Khorgos, by reducing the limit of 50 kg/Euros 1500 to 25 kg/Euros 500. It is also important to establish terminals for passengers and cargo and segregate the two traffic.

B. Transport Connectivity

118. **Construct new railway lines.** To decrease transit time for regional trade, reduce transport costs and improve the logistics infrastructure of border stations, Kazakhstan intends to build a new Darbaza–Maktaaral railway line, which will help redistribute the traffic flow and partially relieve the pressure at the Saryagash-Keles line (currently operating at full capacity of 27million tons per annum). It also increases corridor capacity and provides job opportunities for local residents, thus, contributing to the development of Turkestan’s border region. The length of the new railway line with 135 km through Kazakhstan and 77 km through Uzbekistan (rehabilitation and reconstruction) will lead towards Zhetysai–Jizzakh, and will be highly desirable to bridge the capacity gaps in the Sarygash-Keles checkpoint, especially during peak periods of seasonal freight loading. The completion of a missing railway link between the Gagarin (Uzbekistan)and Zhetysay (Kazakhstan) railway stations with length of 12 km will unify the two countries’ railway branches, thus contributing to ICIC development.

119. **Rehabilitate M-39 road.** Tashkent region’s national road M-39 which works as a feeder and distributor to international corridors and connects Tashkent province with the south part of Uzbekistan should receive more attention. M-39 road runs south and is connected with the ICIC site. The scale of congestion problem was observed during the site visit on 13 September 2023. The road constraints will be a growing issue considering the fast economic development of Uzbekistan. Given the current and expected traffic flows along the road section, it is desirable to rehabilitate M-39 section towards Samarkand or construct a new highway in the direction of Tashkent-Samarkand section to meet the growing demand of cargo flows to ICIC.

120. **Modernize border crossing points (BCPs)**. The checkpoints “Zhibek Zholy-Gisht Kuprik”, “Syrdarya-Malik” and “Tselinniy-Ak Altyn” focus on serving passengers, while checkpoints “Kazygurt-Najimov”, “Atameken-Gulistan”, “Kaplanbek-Zangiota” and “Konysbayev-Yallama” serve mostly international freight transport. The three BCPs (“Atameken-Gulistan”, “Kaplanbek-Zangiota” and “Konysbayev-Yallama”) are located in densely populated areas without free land for further expansion. Kazygurt has a suitable location close to the main arterial road A-2 Highway and Tashkent city, but carriers do not use it regularly, due to the lack of adequate services for international transport operators. Table 14 lists the BCPs in Kazakhstan and Uzbekistan related to the ICIC site. Considering the increasing cargo turnover from Central and South Asian countries, it is necessary to modernize the trade and logistics infrastructure at the border. Kazakhstan and Uzbekistan have already been modernizing BCPs on their common border in accordance with the road map that they agreed in 2017. The modernization of the Konysbayev-Yallama BCP was completed in 2017. In particular, the Kaplanbek-Zangiota (aka Kaplanbek-Navoi) BCP was closed for modernization in December 2022. The Atameken-Gulistan and Kazygurt-Najimov BCPs were partially closed for modernization in February 2023.

Table 14: Border Crossing Points between Kazakhstan and Uzbekistan related to ICIC

Name of Kazakh Side of BCP	Name of Uzbek Side of BCP	Mode of Transport

Atameken	Gulistan	Road
Konysbayev	Yallama	Road
Kaplanbek	Zangiota (Navoi)	Road
Syrdarya	Malik	Road
Kazygurt	Najimov	Road
Saryagash	Keles	Railway
Zhibek Zholy	Gisht Kuprik	Road (passenger traffic only)
Tselinniy	Ak Altyn	Road

Source: The study team

121. **Rehabilitate the A-2 and A-15 roads**. Based on the field trip study in October 2022 and secondary data analysis,[22] volume-distance histograms have been calculated. It is concluded that most passenger car trips and the freight trips in the study area are between distances of 50 to 200 km. The trend line shows increased rates of long-distance trips of more than 300 km. For bus trips, the traveled distances are between 100 and 250 km, showing a tendency for longer distance passenger trips with buses than with private cars. Given this, it is desirable to rehabilitate A-2 and A-15 roads to support the ICIC.

C. Facilitation of Border Crossing

122. Being landlocked, the shippers in Central Asia face elevated challenges in shipping their goods to and from the region since there is no direct access to seaports. The transit of goods relies on effective and efficient border crossing. To lower barriers for cross-border movement of goods, services and labor, the measures below are recommended at facilitating border crossing for goods, vehicles and people both inside and outside the ICIC.

123. **Segregation of traffic**. A principal reason for the inefficient border-crossing is non segregation of traffic flows into the BCP. Passenger cars and cargo vehicles are not segregated and crowd at the entrance of the BCP forming long queues. For cargo traffic, border authorities do prioritize time sensitive shipments for processing within the BCP, but the trucks must join in the long queue with other non-urgent shipments outside the BCP. An effective solution is to segregate the traffic at some distance (a few kms) before the vehicles converge at the BCP entry point. Signages that display the different types of traffic can be installed so that drivers can move to the correct lanes. Different lanes should be demarcated so that the vehicles can then join the correct queue to the entry point.

124. **Adoption of integrated border management**. As a usual practice, a cargo vehicle undergoes a series of procedures (inspection and controls) crossing a BCP. Generally, the order is going through border control, immigration control, SPS and veterinary control, transport control, and customs control. A more effective way is to adopt an integrated border management system. This means that a cargo vehicle goes through a one-stop-shop station where all relevant documents are checked. For shipments that require more inspection due to missing documents or incorrect data, the vehicles can be diverted to another station. Under effective risk-based management with pre-arrival document processing, most shipments are assigned to the green channel for border crossing. Box 2 features Georgia's integrated border management system.

[22] ADB. 2020. *2019 CAREC Transport Sector Annual Review*. Manila

Box 2: Integrated Border Management in Georgia

Georgia has implemented a series of reforms since mid-2000s that led to significant simplification of border procedures which greatly facilitate cross-border trade. At present, a single window platform is used for clearance of cargoes crossing land borders, including customs clearance, taxation, passport control, and sanitary and phytosanitary (SPS) services. The average border clearance time for cargoes is around 5 minutes, about 97% of shipments are released through "green corridor", with 3% of cargoes are subject to documentary or physical examination. This fast clearance service is contributed by the effective use of information system, risk management, and introduction of pre-arrival declaration and post clearance audit, which significantly expedites the processing at the BCP. The system integrates 8 state agencies which issue about 38 permits that are exchanged electronically with the State Revenue Service.

Source: Georgia State Revenue Service

125. **Smart queue management and parking center**. Facilitating the expedited cross-border movement of goods will be an important function of ICIC. Thus, one key task is managing the long queues of trucks waiting to pass through the BCP. To avoid congestion at the entry and exit gates of the ICIC, it is proposed to implement a smart queuing system and parking center. The use of the parking center can incur a small fee, decided by the operator of the parking center, and regulated by the local authority. This will ensure that border-crossing becomes more organized and faster. This concept can be integrated with existing apps such as the CargoRuqsat in Kazakhstan or the E-Navbat in Uzbekistan. Kazakhstan and Uzbekistan are applying smart queueing system in selected BCPs (Box 3).

Box 3: Queue Management in Kazakhstan and Uzbekistan

Kazakhstan launched a mobile app called CargoRuqsat, an initiative by the State Revenue Committee. This allows carriers to book a queue number when crossing the border to save time. The app was launched in March 2023 and is currently applicable only at Maykapchagay, a checkpoint at the border with PRC. Details of the shipment and the driver are sent in advance to the border services.

Uzbekistan implements an electronic queuing system "E-Navbat", an app implemented by Uzbek Customs Committee. The customs brokers login into the E-Navbat system to lodge the declaration and apply for a queue number to cross the border. The queue ticket only has a ticket number and specific time period for the driver to cross the BCP. At peak season, drivers often arrive late resulting in disputes among the drivers over who to go first. This is an area which needs improvement.

Sources: State Revenue Committee of Kazakhstan, https://www.gov.kz/memleket/entities/kgd-vko/press/news/details/528346?lang=en, accessed on 8 May 2023.; Uzbekistan Customs Committee, https://e-navbat.customs.uz/navbat, accessed on 8 May 2023

126. **Smart gate management.** Many BCPs in Central Asia have poor gate management, which is a reason for long wait time in border-crossing. The ICIC should have multiple gates with an intelligent signal system to direct the type of traffic (passenger and cargo) to the specific gate. Cargo flow can be subdivided into a green lane, over-sized vehicles, and normal vehicles. Depending on the actual situation, the number of gates that serve each type of traffic flow can vary according to demand. Smart gate management is practiced in the Sarpi (Georgia)-Sarp (Türkiye) BCP, a very busy BCP with high traffic volume between Georgia and Türkiye. A display is installed above each gate, connected to a central information system. The gate displays a "green" vehicle when operational, or a "red" stop sign when not operational, and a "TIR" sign when the shipments are under a TIR operation. This smart management of the gates facilitates cargoes to use green lane for time sensitive products, or TIR shipments to move through the center rapidly.

127. Using the above generic strategies, a specific process to facilitate border-crossing at the ICIC is proposed. Given that two separate jurisdictions exist depending on which side a

business is located, a special “green pass” regime is advocated. Companies operating in the ICIC will enjoy such a green lane which is operational physically in a systematic way. Physically, the smart gate will provide one dedicated green lane to facilitate cross-border movements of merchandise produced within the ICIC. Advanced transit declaration will also be made by companies so that customs can review the shipment details and assign the shipment to green, yellow or red channel before the shipment arrives physically. The shippers are also encouraged to apply for the national AEO to expedite border-crossing.

D. Development of Logistics Services

128. Kazakhstan and Uzbekistan rank relatively low on key logistics indicators, such as the Logistics Performance Index (LPI), which measures the quality of logistics services including trucking, forwarding, and customs brokerage. In the LPI 2023, among 160 participating countries, Kazakhstan stands at 79th place, down by 8 positions from 2018, and Uzbekistan ranked 88th, up from 99th in 2018. The development of logistics services both within and outside ICIC will be important to improve the logistics performance of Kazakhstan and Uzbekistan, and help attract increased cargoes going through the ICIC.

129. The past decade has seen notable improvement in the logistics sector development in Kazakhstan and Uzbekistan. The Kazakhstan government took steps to improve the efficiency of logistics services by designing new distribution networks and optimizing existing road and rail networks. The government is strengthening customs services, including expansion of BCPs, reducing border crossing time and documents requirements to facilitate the flow of cargo through the BCPs. Uzbekistan has 7 logistics centers and 29 commodity-transport based distribution centers for fresh and processed fruits and vegetables. All logistics centers are equipped with parking lots for heavy vehicles and six of them are equipped with access to railway tracks.

130. Logistics services need improvement to meet the growing demand in both countries. In Uzbekistan, for example, no “A” class warehouse exists at present, which is hard to meet the demand of exports of products from 5 free economic zones and more than 50 small industrial zones in Tashkent province.

131. Earlier in December 2022, an important bilateral agreement was signed to construct a modern logistics center at Yangiyul district in the Tashkent region, 10 km from Tashkent City. Estimated to cost $300 million, the center will have a total storage area of 24.8 hectares, railways capacity to serve 1,240m wagons and 11,100 container units. In the demand analysis, impact of the proposed project is not considered as the given project is in early concept phase and the capacity of the project is not defined.

E. Support for Development of Industrial Parks and Logistics Centers

132. To attract private investment, a series of investment grants and funds can be provided to the ICIC developer/s. A special assistance to setup manufacturing hubs and industrial parks can be simultaneously launched to attract private developers to build, invest and operate logistics centers in the shortlisted regions of Kazakhstan and Uzbekistan. Those regions gaining higher demand for manufacturing due to increased cargo movement, increase in manufacturing and other economic activities can be the shortlisted regions for gaining incentive benefits. The special financial assistance should be provided to the eligible developers meeting the set criteria of quality and land acquisition standard for the region. The incentives can be given under the following categories:

- Capital Subsidy: Range of percentage reimbursement on fixed capital investment undertaken by the investor in plant and machinery (provide higher incentive in less developed regions)

- Land Cost Subsidy: Range of percentage reimbursement on land cost (in case of acquisition) undertaken by the investor (provide higher incentive in less developed regions)

- Infrastructure Development Assistance: All eligible manufacturing and warehousing parks can be provided with infrastructure development assistance with a set percentage assistance up to a predefined maximum limit against the expenses for development of the external road/rail infrastructure (access to the project site).

VI. CONCLUSION

133. Kazakhstan and Uzbekistan are participants of the Shymkent-Tashkent-Khujand Economic Corridor (STKEC) initiative. Both countries recorded strong economic growth during the past decade. Although manufacturing expanded at a fast pace, it remains relatively underdeveloped in both countries. Partly for this reason, exports of both countries are highly concentrated in a few primary commodities, such as oil, gas, metals, and ores. This makes Kazakhstan and Uzbekistan's economies vulnerable to fluctuations in world prices of the primary commodities. Furthermore, both countries are heavily dependent on imports of many essential manufactured goods, including processed food products and pharmaceuticals. This makes the countries vulnerable to disruptions in global supply chains for these goods. Notably, manufacturing is less developed in both countries, particularly employment opportunities are fewer and living standards are lower in remote provinces (including Turkestan province of Kazakhstan and Syrdarya province of Uzbekistan) than in big cities (such as Almaty in Kazakhstan and Tashkent in Uzbekistan).

134. Kazakhstan and Uzbekistan have close historical, ethnic, cultural and economic ties and collaborate in many areas, including trade, transport and tourism. Although both countries have made considerable progress lowering trade barriers in recent years, multiple non-tariff barriers still constrain their bilateral trade. These include the differences in trade-related standards and technical regulations, comparatively high cost (especially the high time cost) of border crossing for freight shipments by road and rail, and the quantitative restrictions that Kazakhstan and Uzbekistan occasionally impose on exports of essential goods.

135. The ICIC is intended to serve multiple economic objectives of the Governments of Kazakhstan and Uzbekistan by increasing industrial cooperation between the two countries, attracting more FDI and know-how into manufacturing, lowering trade costs, and utilizing industrial symbiosis and economies of scale. In particular, the ICIC is expected to (i) spur the development of manufacturing, (ii) expand exports of manufactured goods, (iii) diversify the composition of exports away from primary commodities, (iv) reduce supply chain risks for essential manufactured goods, (v) foster innovation, and (vi) promote spatially balanced economic development. Our analysis indicates that the project is expected to produce an annual output of US$ 1700 million, generate tax revenue of US$ 300-350 million, have an economic impact of about US$ 1700 million and shall create 2200-3000 jobs.

136. Taking into consideration the objectives of the ICIC, Kazakhstan and Uzbekistan's comparative advantages, the sector attractiveness, the complexity of industry-specific trade procedures and the time sensitivity of goods, six target industries are proposed for the initial phase of ICIC development. These are (i) food processing, (ii) pharmaceuticals, (iii) apparel, (iv) fast moving consumer goods, (v) basic metals and (vi) automobile and components. This list is largely congruous with the list of ICIC priority industries that the Governments of Kazakhstan and Uzbekistan have recently agreed on.

137. Two alternative institutional models are proposed for the ICIC: (ii) a single entity model and (ii) a dual entity model. Under the first model, the ICIC will be set up as a joint venture between Kazakhstan and Uzbekistan. It will have a single management body. Under the second model, the Kazakh and Uzbek sides of the ICIC will be set up as separate legal entities and will have separate management bodies. Both models have their advantages and disadvantages. Notably, the single-management model is likely to be more effective in achieving the objectives of the ICIC. However, it will be more difficult to implement due to the need for an intergovernmental agreement. By contrast, the dual-management model will be relatively easy to implement. But it is likely to be less conducive to cross-border movement of goods, services, capital, and labor. Accordingly, it is also likely to be less effective in achieving the objectives of the ICIC.

138. Given the size of the land area (total of 100 ha) that Kazakhstan and Uzbekistan have thus far allocated for the ICIC and taking into consideration the ICIC objectives, target/priority industries and incentive structure, four components are proposed during the initial phase of ICIC development: (i) a manufacturing zone, (ii) an office building, (iii) a utilities zone and (iv) a logistics zone. Additional components can be included during subsequent phases of the ICIC development if Kazakhstan and/or Uzbekistan allocate additional land area to the ICIC.

139. The overall capital expenditure on the ICIC is estimated at US$32.5 million. Three financing scenarios have been considered. Scenario 1 entails full financing of the ICIC with a multilateral loan. Scenarios 2A and 2B involve hybrid (equity-and-debt) financing without VGF (Scenario 2A) or with VGF (Scenario 2B). The ICIC is expected to receive revenue from renting out commercial spaces and leasing land for manufacturing and related activities. The results of the computations indicate that the ICIC is not financially viable under Scenarios 1 and 2B. It is financially viable with VGF of at least US$24 million under Scenario 2B. The sensitivity analysis shows that the results are heavily dependent on the underlying assumptions. Still, the preliminary conclusion is that the ICIC will require low-cost financing and/or sizable VGF to be financially viable.

140. As mentioned above, an intergovernmental agreement on the ICIC will be needed if the single-entity institutional model is implemented. The agreement may necessitate amendments in Kazakhstan and Uzbekistan's existing laws and regulations, including the customs codes and regulations on border crossing. Irrespective of which institutional model is implemented, a number of additional external enablers are needed to ensure smooth functioning of the ICIC, make it more attractive for businesses, increase its economic benefits and achieve its objectives. These include an enabling legal and regulatory framework, good transport connectivity, well-developed logistics services, low trade barriers, modern quality infrastructure, availability of skilled labor, and a strong innovation ecosystem.

141. To ensure good transport connectivity of the ICIC, several transport infrastructure projects should be implemented. These are (i) the construction of the Darbaza-Maktaaral railway, (ii) the refurbishment of the A-2 and A-15 roads, (iii) the construction of a new bypass road at A-15, (iv) the construction of a rail link between the Gagarin (Uzbekistan) and Zhetysay railway stations in Kazakhstan and rehabilitation of M-39 road section toward Samarkand. To lower barriers to cross-border movement of goods, services and labor both inside and outside the ICIC, a number of measures aimed at facilitating border crossing for goods, vehicles and people are recommended. These include (i) segregation of the cargo and passenger flows, (ii) establishment of smart electronic queuing, gate management and parking systems, and (iii) transition to integrated border management.

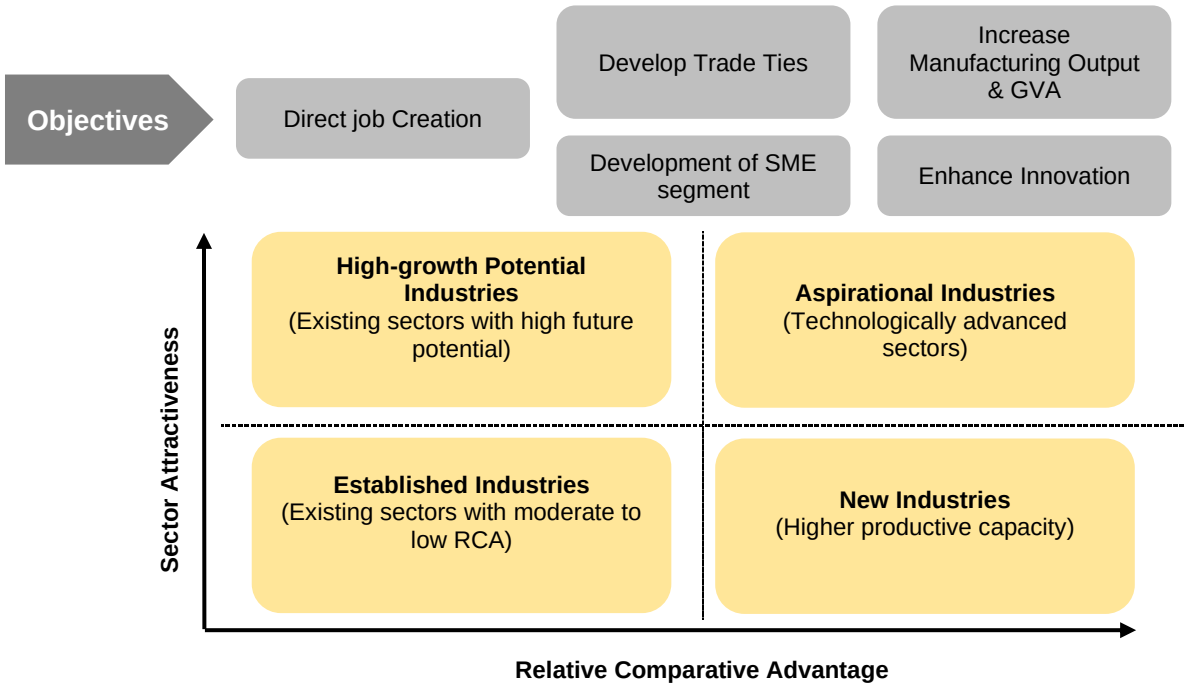
142. The implementation of ICIC will create a larger economic impact with respect to boosting the regional economy and development of a manufacturing ecosystem. However, the financial assessment suggests that the project will be viable only with VGF funding support extended by both governments. Also, the development of key external enablers such as ensuring logistics connectivity, harmonization of cross border movement and policy changes for easier implementation of the project should be undertaken.

APPENDIX 1: METHODOLOGY OF CONCEPT PLAN

A. Sector Shortlisting Framework

1. The methodology considers the current advantages and future potential for each sector (Figure A1. 1). The shortlisted sectors have been further validated by stakeholder consultations conducted with the private sector in the STKEC countries.

Figure A1. 1: Sector Shortlisting Framework for ICIC



Source: Study team analysis

- **Sector Attractiveness:** Future potential of the sector and products within the sector based on the shift in import trends, global R&D spend, shifts in consumer market behaviors and governance structures. These are highly aspirational sectors and product classes with high technological advancements.

- **Comparative Advantage:** The sectors which have a neutral-to-high presence in the region and have an existing production capacity base for the sectors. These sectors can be further diversified to advanced manufacturing and upward/downstream integration.

- **Trade procedures and necessary certificates**: the product import limitations based on necessary documentation, certifications, declarations for the product to be presented on the market.

- **Time sensitivity of goods**: the time which is necessary for the product to go through production, transportation of product, average time to purchase, household lifetime and general expiration time of product.

2. From the research conducted, it was realized that the product trade compliance differs from sector to sector with various limitations and technical requirements. Multiple obligatory certifications lead to a longer process of trade and create barriers for efficient import or export of products. To illustrate the time sensitivity of goods, the product categories were divided by

three columillions: time for production, shipping, average shelf life before being bought by consumer and average consumption time in the household. The ICIC sector suitability framework is elucidated below in Table A1. 1.

Table A1. 1: ICIC Sector Suitability Framework

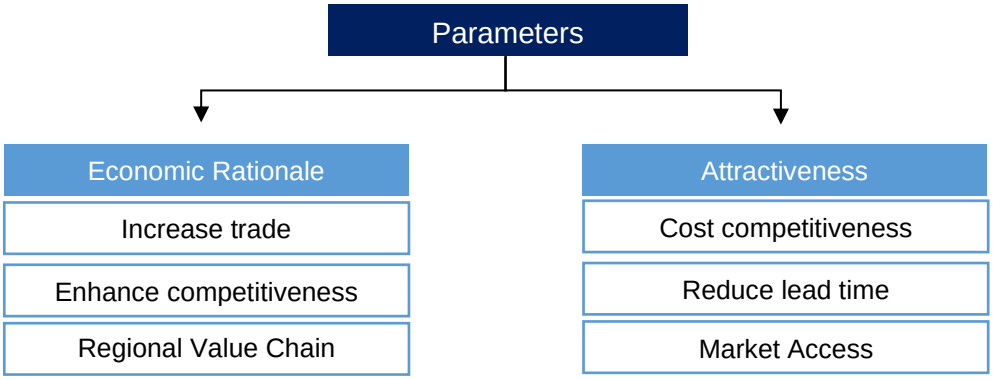
Basic metals	**Electrical equipment**	**Copper wires**	**Trade Procedures** (Certifications)	**Time sensitivity**
Basic metals	Construction materials	Semi-finished products of iron & steel/ aluminum/ copper: metal castings	8	40 years
	Aircraft Components	Engine Parts such Fan blades, fan case: blisk (part consisting of a case and blades)	8	31 years
Textile and Wearing apparel	Textile	Polyester Yarn	7	7 months
	Wearing apparel	Leather apparel: leather jacket	7	31 years
Food processing	Ready to eat products	Tomato Ketchup	5	2 months
	Meat products	Meat products: sausages	5	24 days
Non-Metallic Minerals	Fertilizers	Phosphorous fertilizers	11	Not time sensitive
	Gypsum Derivative Products	Light construction material (gypsum plaster boards)	11	50 years
Automobile	Parts and Accessories	Chassis and Engine: chassis	12	20 years
		Brakes, gears, clutches: brake disc	12	3 years
		Transmission, driveline, and powertrain	12	12 years
		Cabin body	12	12 years
		Lubricant oil and Coolant parts: engine coolant systems	12	2 years
Chemicals	Surfactants	Detergents, liquid soaps	11	1 year
	Dyes, pigments, and other coloring matter	Paints, varnish, coatings	11	2 years
	Plastics	PE pipes, packaging	11	Not time sensitive
Pharmaceuticals	Formulation	Formulation Drugs	8	5 years

Source: Study team analysis based on the findings of sector-wise procedural requirements and time sensitivity from secondary sources.

B. Components Shortlisting Framework.

3. The components shortlisting framework considers two broad parameters i.e., economic rationale and attractiveness (to investors), to identify and shortlist components for ICIC. These parameters are further sub divided into three sub-parameters each as shown in the Figure A1. 2.

Figure A1. 2: Classification of Parameters for ICIC Component Selection



Source: Study team analysis

4. Parameter-1: economic rationale represents set of objectives that respective governments aim to achieve by implementing ICIC such as trade expansion, enhancing competitiveness and developing regional value chain.

5. Parameter-2: attractiveness (to investors) of ICIC are the set of goals that reduces the trade barriers for investors such as higher processing time at borders, higher requirement for documentation, better market access thereby making ICIC as the most preferred choice among the investors. The framework for developing infrastructure at ICIC, derived from the above parameters is described further.

6. Each of sub parameters under the two broad parameters are assigned weightage which is done by using a mathematical tool known as Analytic Hierarchy Process (AHP). The final weightages obtained are shown below in Table A1. 2.

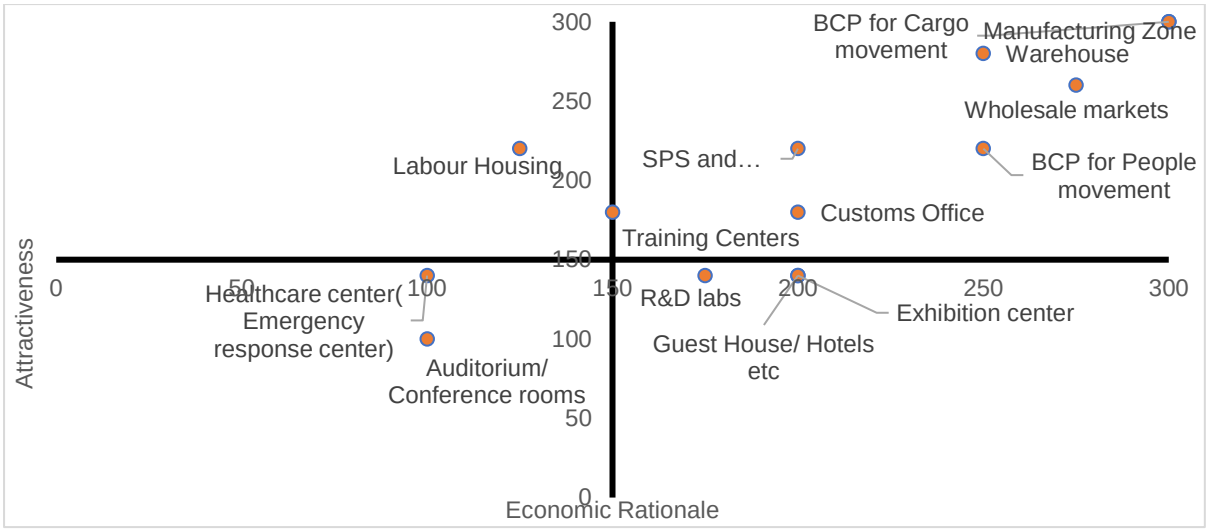
Table A1. 2: Weightages to be obtained for each sub-parameter

Economic Rationale		**Attractiveness**	
Increase Trade	50%	Cost Competitiveness	40%
Enhance Competitiveness	25%	Reduce lead time	40%
Regional Value Chain Development	25%	Market Access	20%

Source: Study team analysis based on AHP model

7. Shortlisted components under first/initial phase and subsequent phase/s of ICIC are shown in the Figure A1. 3.

Figure A1. 3: Shortlisting of Internal Components for ICIC



Source: Study team analysis based on the component shortlisting and scoring for ICIC

APPENDIX 2: DETAILED FINANCIAL ANALYSIS

A. Operational Expenses Market Analysis

1. The amount of land available for leasing each year from 2027 to 2036 has been determined in the Demand Assessment and is shown in Table A2. 1 below.

Table A2. 1: Land-offtake of ICIC (ha)

Zone	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Industrial (ICIC)	3.6	5.4	14.2	18.8	27.0	25.2	21.6	21.6	21.6	21.6

Source: Study team analysis based on the land demand and offtake assessment

2. To conduct a peer analysis, comparable companies were selected and analyzed using S&P Capital IQ data, companies' websites, and other public sources of information. To determine the appropriate companies for comparison, the following criteria were applied during the selection process:

i. Operating activity – the main activity of the selected companies is development and management of industrial parks and zones.

ii. Availability of financial data in open sources.

3. The financial model assumed the value of OPEX to Revenue ratio based on market median of comparable foreign companies (75.2%) that were analyzed during the peer analysis (see Table A2. 2).

Table A2. 2: Comparable Companies' OPEX / Revenue Analysis

Market Comparable Companies	Country	OPEX / Revenue
Hubei Science Technology Investment Group	China	75.2%
Rojana Industrial Park	Thailand	78.0%
WHA Corporation	Thailand	60.8%
Pinthong Industrial Park	Thailand	62.9%
Median		**75.2%**

Source: Study team analysis

B. Capital Expenditure

4. The CAPEX includes expenses on infrastructure development, building construction, utilities, pre-operating expenses and contingency. The costs for construction and development were calculated on a per-unit cost basis (per ha). CAPEX for the project amounts to $32.5 million, with most of the CAPEX allocated towards buildings (36.5%), utilities (25.6%) and infrastructure development (20.5%). It was estimated that the pre-operating expenses would account for 10% of the construction CAPEX and the contingency costs would be 10% of the total CAPEX. As a result, the total project CAPEX for ICIC is $325.4 thousand per ha.

Table A2. 3: CAPEX Breakdown ($'000)

CAPEX Breakdown	Total CAPEX	CAPEX per hectare	Weight (%)
Land Cost	**16**	**0.2**	**0.0%**
Infrastructure development	**6,658**	**66.6**	**20.5%**
Site development incl. land filling	2,455	24.6	7.5%
Site fencing and compound wall	3	0.0	0.0%
Internal roads	2,963	29.6	9.1%
Open space	1,236	12.4	3.8%
Buildings	**11,877**	**118.8**	**36.5%**
Logistics warehouses	5,298	53.0	16.3%
Social Infrastructure	2,678	26.8	8.2%
Expo center	3,901	39.0	12.0%
Utilities	**8,339**	**83.4**	**25.6%**
Electricity	3,814	38.1	11.7%
Potable water supply	766	7.7	2.4%
Non-potable water supply	165	1.6	0.5%
Sewage treatment and network	1,900	19.0	5.8%
Effluent collection network	142	1.4	0.4%
Storm water drain facilities	1,551	15.5	4.8%
Pre-operating expenses	**2,689**	**26.9**	**8.3%**
Contingency	**2,958**	**29.6**	**9.1%**
Total	**32,536**	**325.4**	**100.0%**

Source: Stakeholder consultations, Study team analysis

C. Financial Terms

Table A2. 4: Financing Structure

Capital Structure	Scenario 1	Scenarios 2A and 2B
Debt	100%	52%
Equity	0%	48%
Total	**100%**	**100%**

Source: Study team analysis

Table A2. 5: Repayment Terms

Capital structure	Scenario 1	Scenarios 2A and 2B
Interest rate	6.0%	12.1%
Grace period	2	2
Repayment period	10	5

Source: Study team analysis

D. Forecast under the Financial Analysis

Table A2. 6: Net Working Capital ($ million)

Indicator	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Receivables	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.4	0.4	0.4
Payables	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.6	0.7
NWC	**(0.03)**	**(0.03)**	**(0.1)**	**(0.1)**	**(0.1)**	**(0.2)**	**(0.2)**	**(0.2)**	**(0.2)**	**(0.2)**

Indicator	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Receivables	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Payables	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
NWC	**(0.05)**	**(0.05)**	**(0.05)**	**(0.05)**	**(0.1)**	**(0.1)**	**(0.1)**	**(0.1)**	**(0.1)**	**(0.1)**

Source: Study team analysis

Table A2. 7: Cash Flows Forecast ($'000)

Cash Flows	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Project Cash Flows												
Revenue	-	-	-	0.6	0.8	1.4	2.1	3.3	3.7	3.8	4.3	4.8
Operating expenses	-	-	-	(0.5)	(0.6)	(1.0)	(1.6)	(2.5)	(2.8)	(2.8)	(3.2)	(3.6)
EBITDA	**-**	**-**	**-**	**0.2**	**0.2**	**0.3**	**0.5**	**0.8**	**0.9**	**0.9**	**1.1**	**1.2**
Total changes in WC	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CAPEX	(3.0)	(13.7)	(12.0)	-	-	-	-	-	-	-	-	-
Tax Paid	-	-	-	-	-	-	-	(0.3)	(0.1)	(0.1)	(0.1)	(0.2)
FCFF	**(3.0)**	**(13.7)**	**(12.0)**	**0.2**	**0.2**	**0.4**	**0.5**	**0.5**	**0.8**	**0.8**	**0.9**	**1.0**
Discount rate	*14.3%*											
Discounted FCFF	**(2.4)**	**(9.8)**	**(7.5)**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**

Cash Flows	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Project Cash Flows											
Revenue	5.3	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4
Operating expenses	(4.0)	(0.8)	(0.8)	(0.9)	(0.9)	(0.9)	(0.9)	(1.0)	(1.0)	(1.0)	(1.0)
EBITDA	**1.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**
Total changes in WC	0.0	(0)	0	0	0	0	0	0	0	0	0
CAPEX	-	-	-	-	-	-	-	-	-	-	-
Tax Paid	(0.2)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.1)
FCFF	**1.1**	**0.1**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**
Discount rate	*14.3%*										
Discounted FCFF	**0.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Project NPV	**(19.0)**										
Project IRR	***N/A***										

Source: Study team analysis

E. Sensitivity Analysis

Sensitivity analysis for financing scenario 2A

6. The effects of changes in operational assumptions were demonstrated by selecting the most significant indicators: OPEX to Revenue ratio and CAPEX. In order to account for the wide range of OPEX to Revenue among comparable companies selected for the OPEX to Revenue ratio, the analysis incorporated the minimum and maximum values (for analysis purposes, the value for maximum of 90% ratio was taken), as well as the 1st and 3rd quartiles. Sensitivity analysis was performed to reflect the potential effects (see Table A2. 8).

Table A2. 8: Sensitivity Analysis on OPEX to Revenue Ratio and CAPEX for NPV ($'000)

		OPEX to Revenue					
		60.8%	**62.9%**	**75.2%**	**77.4%**	**78.0%**	**90.0%**
CAPEX	**(20%)**	(15,629)	(15,629)	(15,629)	(15,629)	(15,629)	(15,629)
	(10%)	(17,324)	(17,324)	(17,324)	(17,324)	(17,324)	(17,324)
	0%	(19,018)	(19,018)	**(19,018)**	(19,018)	(19,018)	(19,018)
	10%	(20,712)	(20,712)	(20,712)	(20,712)	(20,712)	(20,712)
	20%	(22,407)	(22,407)	(22,407)	(22,407)	(22,407)	(22,407)

Source: Study team analysis

7. The effects of changes in financial assumptions were demonstrated by two significant indicators: financing structure and terms. To account for the potential variations of financial terms and rates sensitivity analysis was performed.

Table A2. 9: Sensitivity Analysis on Financial Terms for NPV ($'000)

		Loan Repayment Years					
		5	**7**	**9**	**11**	**13**	**15**
Loan rate, %	**8.4%**	(19,007)	(18,950)	(18,922)	(18,908)	(18,902)	(18,897)
	9.6%	(19,011)	(18,949)	(18,920)	(18,904)	(18,899)	(18,893)
	12.1%	**(19,018)**	(18,948)	(18,915)	(18,898)	(18,893)	(18,888)
	14.5%	(19,025)	(18,946)	(18,910)	(18,891)	(18,888)	(18,883)
	15.7%	(19,029)	(18,945)	(18,907)	(18,888)	(18,885)	(18,880)
	16.9%	(19,032)	(18,945)	(18,905)	(18,884)	(18,882)	(18,878)

Source: Study team analysis