



Technical Assistance Consultant's Report

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# 6058-REG: Trade Facilitation and Customs Cooperation

## PRC-Xinjiang Uygur Autonomous Region: Logistics Development Strategy

(Financed by the Asian Development Bank)

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For the Asian Development Bank

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*Asian Development Bank*

## **I. EXECUTIVE SUMMARY**

1. This technical assistance project was commissioned by the Asian Development Bank (ADB) and sponsored by the Development and Reform Commission in Xinjiang Uygur Autonomous Region. The project is part of the Trade Facilitation Program of Central Asia Regional Economic Cooperation (CAREC) which promotes trade facilitation and regional cooperation to remove non-tariff barriers and behind-border constraints. This particular study was initiated by the Secretariat in response to a request by the PRC delegation to promote the development of logistics services in Xinjiang.

2. This project was carried out through the summer and fall of 2005. The discovery process relied on industry consultations with government officials, transport and logistics providers, and industrial enterprises at large, in other words the users of transport and logistics services. The local practices were evaluated against the more developed parts of China (mainly coastal regions) as well as global best-practices. The recommended strategy elements and recommended action items reflect the findings of local consultation process as well as bench-mark comparisons with other regions.

3. The focus of this project is on the logistics sector, which unfortunately does not lend itself to a universally accepted definition. In a broader context, logistics has become a generic label for all sorts of manufacturing and distribution activities – ranging from purchasing to marketing – outsourced to third-parties. In this project we confine the scope of logistics to the more traditional domain of “physical distribution”, including transportation and facility operations, as well as the associated planning and management functions. The functioning of the logistics industry in any one region is highly dependent on transport infrastructure and operations – for this reason in this project we also pay attention to the transport sector.

4. Xinjiang has a rich and diverse resource base which offers promising development opportunities. Production costs are low; in addition to low wages and land costs, the region offers plenty of local energy sources to facilitate industrial development. The labor force is well educated and trained to support further development in both industrial and service sectors. Moreover, the regional government (with the support of the central government) places utmost priority to human resource development through both education and vocational training. Also, the region's basic infrastructure is as good as anywhere in China. The principal problem that is holding the region back stems from its geography, the vast distances that have to be overcome to reach major markets.

5. Rail transport plays a vital role in the Xinjiang economy; some 3000-3500 km inland from the coast, the region's resource-based economy could not possibly function without rail services. Although there is still spare track capacity, Xinjiang faces rail-car capacity shortages that limit the volume of eastbound shipments from the region. These shortages are due to a severe directional imbalance – in order to accommodate eastbound demand, rail-cars have to be repositioned empty over long distances. While every effort must be made to increase car capacity, in the mean time available capacity must be rationed (by price or quota) to yield maximum benefit to the local economy, by moving the most worthy traffic.

6. Container supply also poses a problem for the region. Although the railway provides limited supplies of domestic containers, international containers are not available to facilitate direct import-export shipments. Containerization is also important in opening up the “land-bridge” over Asia to Europe – this is the only way to facilitate through shipments.

Improvements in container supply and introduction of dedicated container train services are crucial for promoting export oriented industrialization in the region.

7. Though rail is of great strategic importance, the dominant mode of transport in Xinjiang is still highway transport. The trucking industry in Xinjiang is still going through an evolution following deregulation – dominated by owner-operators but slowly giving rise to larger fleets. Supply adjustments have been slow (particularly among state-owned companies) and the market is plagued with overcapacity (particularly old, inefficient trucks). Structural problems (mainly directional imbalances, both intra and inter regional) further exasperate overcapacity and undermine efficient capacity utilization. Industry conditions can be improved through orderly fleet retirement and consolidation, as well as through better use of information systems.

8. Given the long distances from major markets and the perishable nature of key export products, air transport already plays an important role in Xinjiang. The scope of air cargo services can be expanded even further to serve the regional economic interests – not only in promoting the shipment of perishable products but also helping other manufacturing industries with both inbound and outbound shipments. To this end, it would be in the public interest to promote dedicated air cargo services to/from Urumqi, to serve existing export staples as well as newly emerging industries. This is worthy of government support, not necessarily through ongoing financial subsidies but efforts to attract suitable operators with appropriate incentives.

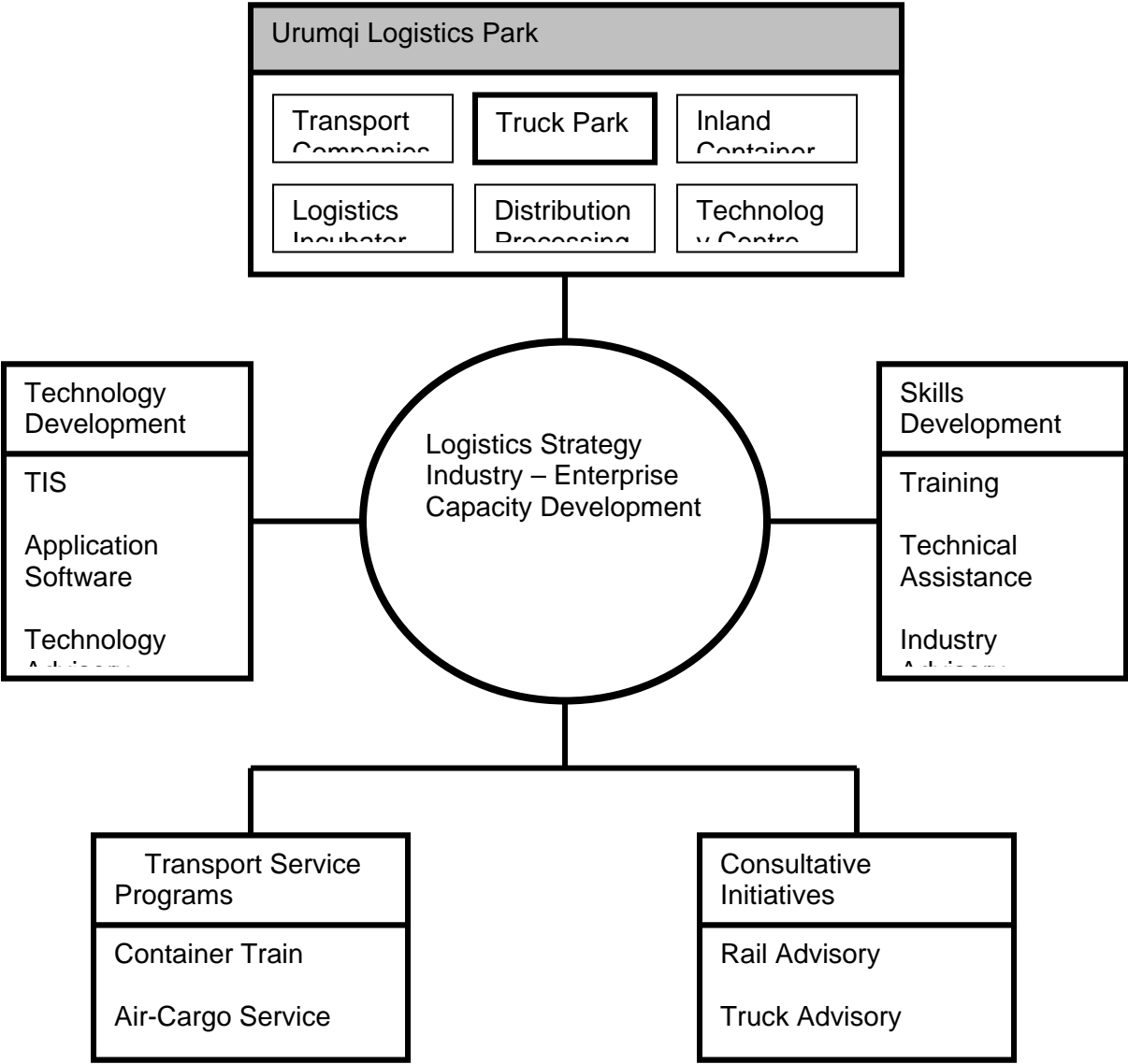
9. As in most parts of China's interior, the logistics industry in Xinjiang is at its very early stages of development. There is a lot of reference to logistics and third-party services being offered, but in fact, there is very little activity that can be regarded as modern logistics functions being performed by *bona fide* third-party providers. As in most other parts of the world, there are a number of transport operators presenting themselves as logistics providers, but many of their offerings are in-name-only – they offer very little more than traditional transport service. Also, there are a number of large diversified distribution centers; though they are primarily merchandising operations, they do provide distribution and logistics functions. In addition to the capacity of local companies, terminals, facilities and distribution centers, large national and international logistics providers also have some local presence.

10. Expansion of the local logistics industry's capacity is a critical prerequisite to the region's further industrialization. There are various aspects to capacity development in the logistics industry, involving both "hard" and "soft" elements. The principal obstacles holding the region's industrial base from developing is not necessarily infrastructure but inadequate logistics facilities. An equally important part of the challenge is to overcome operational problems and develop the sector's knowledge base, professional expertise, and management capacity, together with the necessary information systems. This calls for a development strategy emphasizing "soft elements" – training programs, technical assistance, information dissemination, cooperative efforts, as well as new policy initiatives.

11. The logistics sector development strategy recommended in this study is aimed at improving facility conditions, enhancing operational capacity and promoting modern logistics practices. The core of the strategy is *industry capacity development* with a focus on assisting logistics service providers to build their own *enterprise capacity*. Although the emphasis is on "soft elements", an important recommendation involves the development of *Urumqi Logistics Park*. This is a show-case project for the government to promote the development of modern facilities in a new industrial cluster – including a major truck-park, transportation terminals, distribution centers, processing facilities, a logistics incubator, and a technology center.

12. This facility initiative is complemented by further recommendations with respect to *technology development, training programs, transport services and advisory initiatives*. The technology recommendations include a Transportation Information System initiative, application software development efforts, and a technical advisory service. The proposed skills development initiatives include training programs, technical assistance, and an industry advisory. The proposed transport programs involve rail-container and air-cargo services. The two consultative initiatives involve advisory programs focusing on rail and truck transport.

Xinjiang Logistics Strategy



## I. INTRODUCTION

1. This technical assistance project was commissioned by the Asian Development Bank (ADB) and sponsored by the Development and Reform Commission in Xinjiang Uygur Autonomous Region. The project is part of the Trade Facilitation Program of Central Asia Regional Economic Cooperation (CAREC) which promotes trade facilitation and regional cooperation to remove non-tariff barriers and behind-border constraints.

2. The overall purpose of the program is to leverage transit trade for development, and transform Central Asia and the inland provinces of People's Republic of China (PRC) into "land-bridges" connecting East Asia with Europe. Towards this end several measures have already been taken under the CAREC Program. This particular study was initiated by the Secretariat in response to a request by the PRC delegation to promote the development of logistics services in Xinjiang Uygur Autonomous Region. The purpose of this initiative is "to promote regional transit roles of the CAREC member countries and reduce economic disparity between PRC's inland regions and coastal areas through logistics development". To this end, the study was designed to identify logistics impediments, formulate project proposals to remove those impediments and provide recommendations to improve the policy and regulatory environment for the logistics sector.

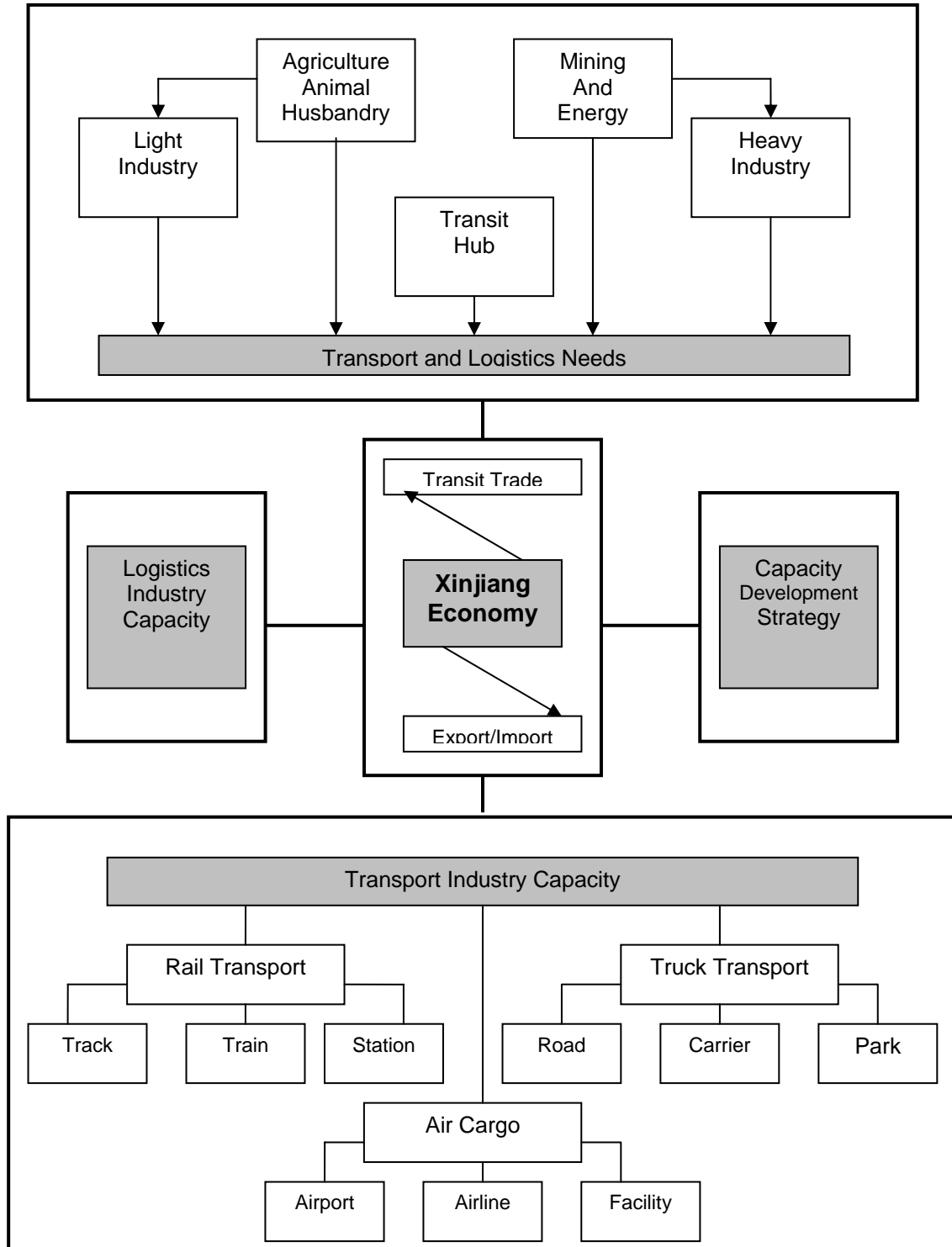
3. The project was carried out through the summer and fall of 2005, involving three missions to Xinjiang. The discovery process relied on industry consultations with government officials, transport and logistics providers, and industrial enterprises at large, in other words the users of transport and logistics services. The local practices were evaluated against the more developed parts of China (mainly coastal regions) as well as global best-practices.

4. The recommended strategy elements and the proposed action plan reflect the findings of local consultations as well as bench-mark comparisons with other regions. We summarize the project findings and recommendations below in three sections: Regional Overview, Logistics Industry Capacity, and Development Strategy Elements. The scope of the project is illustrated through the exhibits displayed on the next two pages.

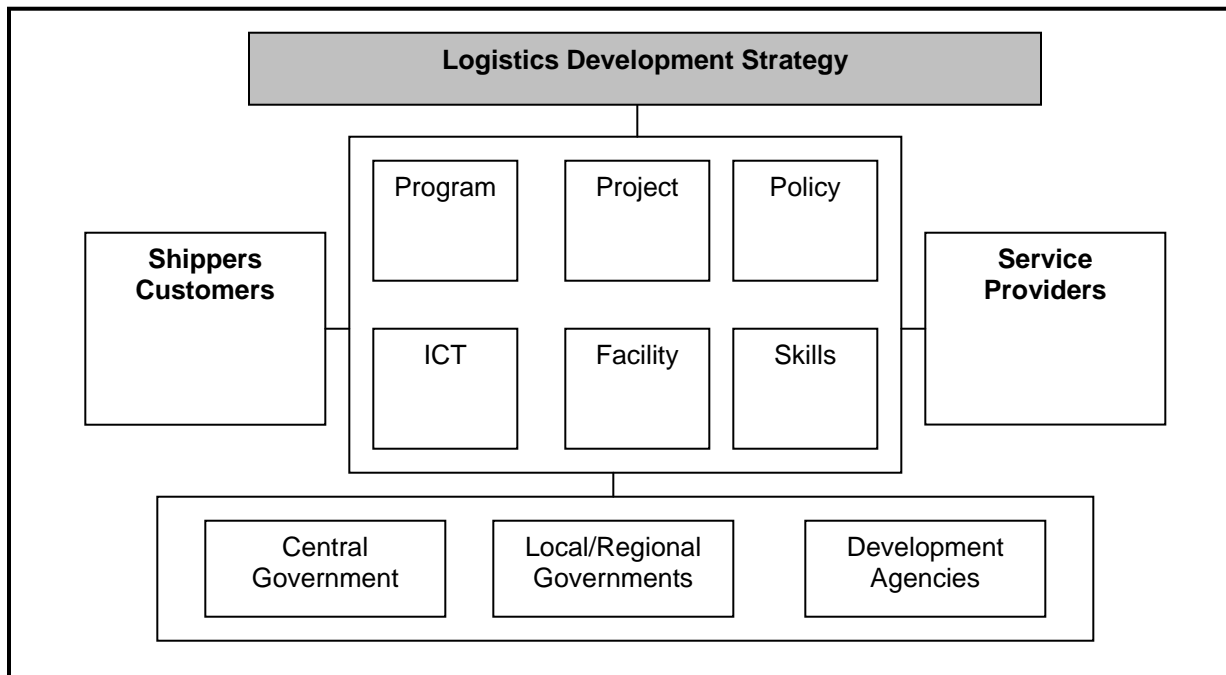
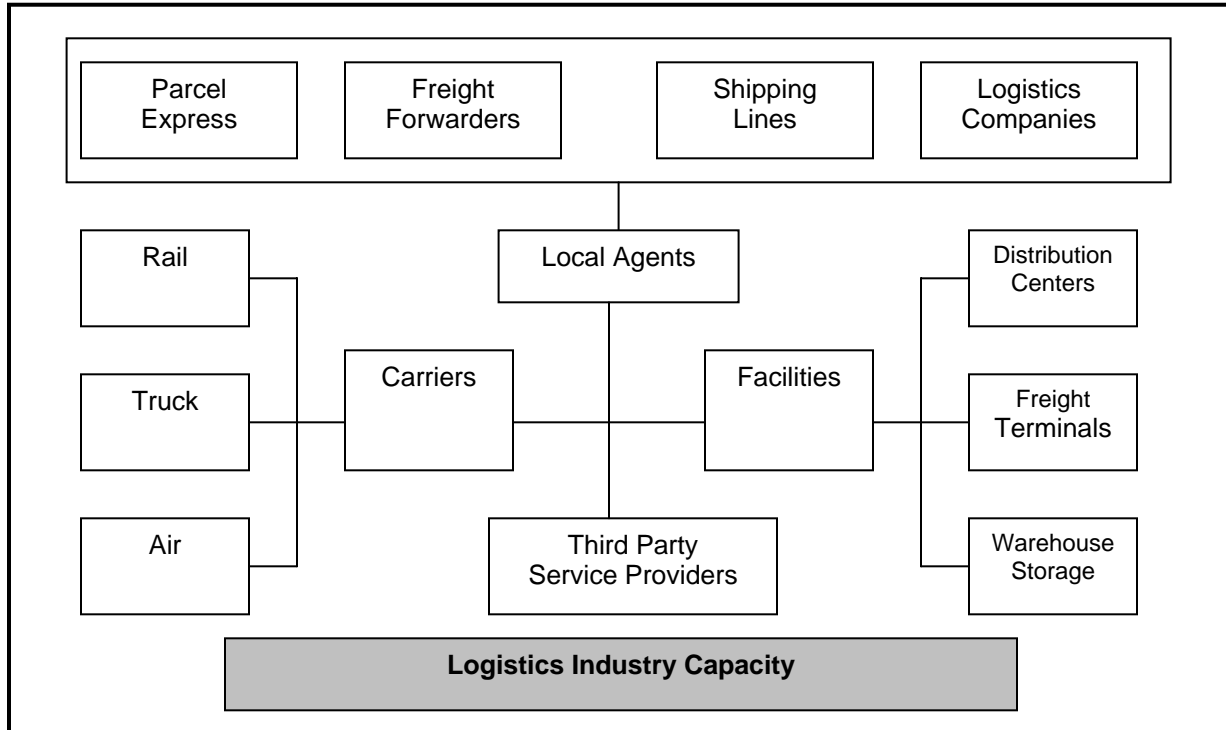
5. The general scope of the study is illustrated in the exhibit below. The region's transport and logistics requirements are determined based on an assessment of the agricultural and resource sectors, and the light and heavy industries associated with those sectors. Special attention is given to Xinjiang's role as a "transit-hub" but domestic trade with the rest of China is also given due consideration. The transport industry's capacity is based on a review of rail, truck and air modes – each playing a crucial role in meeting the regional economy's requirements. The purpose of this review is naturally to determine to what extent the local industry's needs are being met.

6. The second exhibit below provides a more detailed scope of the logistics industry, identifying the different segments of the industry including service providers with an international scope (parcel express companies, freight forwarders, shipping lines and contract logistics companies) as well as local transport operators, terminal facilities and distribution centers that all play roles in the logistics industry. The proposed development strategy is based on an assessment of the local logistics industry's existing capacity in meeting the needs of the regional economy.

## Xinjiang Logistics Development Strategy Study Scope I



## Xinjiang Logistics Development Strategy Study Scope II



## II. REGIONAL OVERVIEW

7. Xinjiang is situated in the northwest corner of China, representing one-sixth of the country's land but little more than 1% of its total population. The Region's geography naturally poses unique challenges – Xinjiang is not only land-locked but as far as 3500 to 4000 km inland from the east coast. Even within China, Xinjiang is situated far from other population centers – Urumqi is 1200 km from Xining and 1800 from Lanzhou, two closest provincial capitals (of Qinghai and Gansu). While Xinjiang is geographically isolated from the rest of China, it derives certain advantages from bordering on 8 other countries – Mongolia, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan, Pakistan, and India. Being part of Central Asia opens up other trade opportunities, not only direct trade for the local economy but also transit trade between Central Asia and China.

8. The region has a rich and diverse resource base which offers promising development opportunities. Production costs are low; in addition to low wages and land costs, the region offers plenty of local energy sources to facilitate industrial development. The labor force is well educated and trained to support further development in both industrial and service sectors. Moreover, the regional government (with the support of the central government) places utmost priority to human resource development through both education and vocational training. Also, the region's basic infrastructure is as good as anywhere in China. The principal problem that is holding the region back stems from its geography, the vast distances that have to be overcome to reach major markets.

### A. Regional Resource Base

9. Although Xinjiang is known for its mountainous terrain and vast deserts – particularly the Taklamakan basin – the region has 50 million hectares of grasslands which support a large animal husbandry base, with an estimated livestock population of 35 million. Agriculture is the single largest source of livelihood in the region, but still less than 10% of the region's grasslands are under cultivation. There is ample opportunity to expand agricultural production, but of course, water resources pose constraints. While the per capita water availability is above the national average, annual precipitation is very low. There remains further scope for expanding the region's irrigation capacity, but water still remains a scarce resource that has to be managed responsibly.

10. Currently 1.3 million hectares of land is engaged in grain production, with annual output of 8 million tons. The second largest crop in Xinjiang is cotton, approximately 1 million hectares producing 1.6 million tons annually. Over the last few years, there has been a steady shift from grain to cotton production (at a rate of approximately 10% per year) – a trend that yields economic benefits but further strains water supply. Sugar beet production is in decline but still constitutes an important crop. Oil bearing crops, on the other hand, have been expanding. Xinjiang is also known for its rich staple of fruits and vegetables, with a combined annual volume of almost 10 million tons, and growing at a rate of more 10% per year. The fastest rate of expansion in Xinjiang agriculture is observed in alfalfas/lucerms – last year's growth alone exceeded 25%.

11. Agriculture and animal husbandry also create downstream industrial activities. The region's sheep stock gives rise to large scale wool production and steady expansion in related



economic activities – local weaving and spinning as well as a slowly emerging textile and garment industries. Similarly, agriculture gives rise to a variety of food processing industries, which are growing in capacity and offer much greater potential in the future. Grains create local opportunities for flour and other processing activities, while there is already established sugar refining capacity using locally produced beets. Fruit juice, tomato paste and wine production are growing, while new production capacity is being established for many kinds of dried or canned fruits.

12. Aside from its land-based wealth in agriculture and husbandry, Xinjiang is also very rich in energy resources and mineral deposits. The region has the largest reserves of coal, oil and natural gas in the country. Coal reserves represent 40% of the national total, but the share of annual production remains significantly lower (less than 10%), constrained mainly by long distances to major markets and limited local industrial base. With the oil and gas reserves discovered in Tarim, Junggar and Turpan-Hami basins, Xinjiang accounts for one-fourth of total oil reserves and one-third of gas reserves in the country. Last year Xinjiang ranked second in natural gas and third in crude oil production, but as the new fields enter production the region will become the nation's top producer.

13. The region has vast and very diverse mineral resources – 122 kinds of minerals have been discovered, with 67 of them with proven deposits. These include large deposits of silver, copper, lead, nitrates, gold, zinc, and iron ore. Mica and beryllium reserves are the largest in the country – other deposits include muscovite, natron saltpeter, pottery clay, serpentine and salt. There are 100 different locations and a total of more than 1 billion cubic meters of proven granite reserves. Some of the region's granite products such as Xinjiang Red, Tianshan White, and Snowflower Black are among the most famous brands in the country. As in agriculture and husbandry, primary activities in the mining and energy sectors give rise to related industries – refineries, smelters, ironworks, steelworks, and chemical plants.

## **B. Economic Output and Trade**

14. Over the last decade the Xinjiang economy expanded steadily at a rate of about 8% per annum, but below the national average. In 2003 the Region experienced a sudden spurt of growth, recording 17.5% growth in one year but slowing down to 11% to 12% range in the last two years – based on 2004 statistics the GDP in Xinjiang was 220 billion RMB. Per capita GDP is now estimated at about 12,000 RMB, still considerably below the national average. Over the years the share of the primary sector has declined, from 42% in 1980 to 20% in 2004. Over the same period the share of the secondary sector increased from 40% to 46%, while the tertiary sector expanded from 19% to 34%.

15. The primary sector (agriculture, animal husbandry, forestry and fisheries) output in 2004 totaled 70.6 billion RMB, up only 6.4% from the year before (compared to 11.1% for the economy as a whole). Agriculture contributed 51.5 billion (up 4.5%) while animal husbandry another 18.7 billion (up 12%). The contributions of forestry and fisheries are modest, but the former is expanding rapidly. The value added in industry reached 75 billion in 2004 – after expanding 20% in 2002, industrial growth slowed down somewhat to 15% both in 2003 and 2004. Last year both crude oil and natural gas output grew by 15% while electricity generation by 12% – growth of output in steel products was also 15%.

16. The industrial economy in Xinjiang is largely dominated by heavy industries. Of the total industrial output light industries represent only about 15%. Farm and non-staple food processing is the largest light industry grouping, representing a 5% share while the remaining 10% is made up of various other industry groups – including textiles and garment, leather processing, paper production, and carpet weaving. Heavy industries, on the other hand, account for about 85% of total industrial output. Also, in recent years heavy industries have been experiencing more rapid growth – in fact in 2003 when the economy was expanding rapidly, light industry's output actually declined.

17. By far the largest industry segment in Xinjiang is energy. Petroleum and natural gas extraction account for 30% of total industrial output. Oil processing, coking and nuclear fuel processing represent another 20%. Together with electric and thermal power production and supply – which account for another 6% share – the energy related industry groups represent more than 57% of the regional economy's total industrial output. The next two largest heavy industry groupings – “smelting and pressing of ferrous metals” and “nonmetal mineral products” – each represent a 5% share of industrial output.

18. Total value of exports from Xinjiang was \$1.2 billion in 2001, increasing less than 10% to \$1.3 billion in 2002, but then almost doubling to \$2.5 billion in 2003, and by another almost 20% to over \$3 billion in 2004. Imports also increased over this period but more moderately, from \$1.1 billion in 2001 to \$1.4 billion in 2002, and then by about 60% in one year to \$2.2 billion in 2003, and a further 16% to \$2.6 billion in 2004. In 2001 Xinjiang had a modest trade surplus which then turned into a deficit in 2002, but in 2003 the balance was restored to a healthy surplus of \$300 million (12% of total exports). The trade surplus grew to \$450 million in 2004 (15% of total exports). Total foreign trade in 2004 (exports plus imports) was \$5.6 billion – 20% of total GDP, significantly lower than the 75% for China as a whole.

19. Major export goods from Xinjiang include tomato jam, raw cotton, cotton yarn, leather shoes, and television sets. Major imports include rolled steel, machinery equipment crude oil, oil products, and fertilizers. Manufactured goods account for more than 85% of Xinjiang's exports and 80% of its imports. Principal export destinations are Kazakhstan, Pakistan, Kyrgyzstan, Azerbaijan, Italy and Hong Kong. Imports originate principally from Kazakhstan, Russia, Japan, Kyrgyzstan, Italy and Germany. Thus, overall Kazakhstan is Xinjiang's most important trading partner, while among the other neighboring countries trade volumes with Kyrgyzstan are also significant.

20. The volume of transit-trade through Xinjiang is much larger than direct imports to and exports from the region. Although reliable statistics on these trading patterns are not available, the current annual volume can be conservatively estimated at \$8 to \$10 billion range, and annual growth rates are clearly in double digits, probably around 15%. The merchandise is brought to large trade-distribution centers (four of which in Urumqi are reviewed in more detail later in this report) from all across China. The bulk of the trade at these centers is sales to Central Asia – buyers come to Xinjiang to purchase goods and make arrangements to ship them back home. There is also significant volume of wholesale trades negotiated in Xinjiang (in show rooms or through local agents) – these goods may be shipped from local warehouses or directly from their supplier sources.

### C. Strategic Role of Transport

21. The development of PRC's coastal regions faced little transport resistance since economic activity located around major ports, where readily available maritime transport could take care of import-export logistics at affordable costs. In the interior, on the other hand, industry must rely on inland transport, but the systems are not as yet developed and transport costs are a lot higher. There are definite infrastructure constraints but more importantly transport industry's capacity is limited. Moreover, intermodal services to/from the coastal regions are mostly lacking, or at best poorly coordinated. Also, expanded logistics services, that modern industry has learned to rely on, are still in their very early stages of development.

22. Naturally these conditions are prevalent in Xinjiang, but are far more serious due to extremely long distances from the coast – e.g. almost double the distance further inland than Lanzhou (in Gansu) which itself is considered to be severely handicapped due to high transportation costs. Thus, transport improvements and logistics developments are essential to the realization of Xinjiang's economic potential. Moreover, distinct from most other inland locations, there is an added dimension to the strategic importance of logistics in the future development of Xinjiang. Logistics plays a strategic role in Xinjiang's development as a regional transit-hub for China's trade with Central Asia – improvements are necessary to protect the region's role in the transit trade and expand its scope.

23. The region is rich with energy sources and mineral deposits. These sectors already play an important role in Xinjiang's economy but the yet untapped potential is vast. Also, agriculture plays a central role in the region – large volumes of grain and cotton production, as well as a diverse range of fruits and vegetables. These presently constitute Xinjiang's export staples, but full economic value associated with this rich resource base is not captured in the regional economy due to limited processing and manufacturing activities. This potential can not be realized unless the capacity of the local logistics industry is fully developed and transport costs to final markets are reduced. Vast distances will always remain a challenge to Xinjiang's exports – as well as the internal efficiency of the regional economy – but a great deal can be done through transport and logistics improvements to reduce supply-chain costs.

24. There are two ways to overcome the transport handicap heavy, resource-based industries face in Xinjiang. The first is the direct approach of improving transport efficiency and thus lowering unit transport costs (particularly line-haul railway costs which the region is so dependent on, both inbound and outbound). The second approach is to encourage more local processing so that rather than raw materials more processed products are shipped – with higher value, thus lower transport cost burden (transport cost to GDP ratio). Naturally, transportation of raw materials involves less value and larger volumes – thus, higher transport costs which are a function of distance and volume. As raw materials are processed and smelted, the value-to-volume ratios increase, thus transport costs become less significant. Further down the industrial chain – from smelting to metal production and further to manufacturing – these ratios become higher and incidence of transport costs even lower.

25. Many agricultural products – grains, silk, wool, etc. – are produced locally and shipped for further processing outside the region. The essence of promoting further processing of these products is to capture more value locally. Moreover, by adding more value to the products to be shipped from the region, the burden of transport costs can be reduced, as in the case of heavy

industries. For example, processing of cotton into textiles or clothing has two benefits. First, the additional industrial activity benefits the local economy by generating more output, thus local value-added. Second, the transport costs relative to product value (or over all GDP) are much lower when textiles or clothing are shipped out of the region, instead of raw cotton (which happens to be one of the worst commodities to ship over long distances due its light weight).

26. The two basic arguments raised here – system efficiency to reduce absolute, and product value to reduce relative transport costs – apply to all lines of industrial activity, heavy and light alike. In the case of many of the light industries logistics associated with both inbound supplies and outbound distribution pose additional challenges. These products tend to be consumption items requiring more elaborate distribution arrangements and more difficult logistics challenges that are not easy to tackle in the absence of a well developed logistics sector in Xinjiang.

#### **D. Alternative Modes of Transport**

27. Rail transport plays a vital role in the Xinjiang economy. The region, some 3000-3500 km inland from the coast and 1000-1500 km from the nearest provincial capitals, could not possibly function without rail services. For most types of freight over 1000 km (sometimes even over shorter distances), especially for bulk commodities, rail is the least cost mode of ground transport. Rail transport already plays a crucial role in the regional economy, but there are formidable challenges that have to be overcome before the region's full economic potential can be realized. In particular, we note the following:

- Although there is still spare track capacity, Xinjiang faces rail-car capacity shortages that limit the volume of eastbound shipments from the region.
- These shortages are due to a severe directional imbalance – large volumes of bulk commodities move east, with limited volumes coming back into the region.
- In order to accommodate eastbound demand, rail-cars have to be repositioned empty over long distances – a difficult problem for China's saturated rail system.
- The fundamental solution lies with more local processing to reduce commodity volumes, but in the short run every effort must be made to increase car capacity.
- At the same, available capacity must be rationed (by price or quota allocation) to yield maximum benefit to the local economy, by moving the most worthy traffic.
- In order to facilitate further industrialization and promote exports, container supply (especially international boxes) and service levels have to be improved.
- The westbound rail routes constitute the backbone of the Asia-Europe land bridge, a concept that has to be actively promoted to become a reality.
- In the short term, there are more immediate improvements that must be achieved to promote regional trade – e.g. service coordination, container availability, etc.

28. Not denying the railway's strategic importance, the dominant mode of transport in Xinjiang is still trucking. Highway transport plays an important role in facilitating interregional as well as international trade; in spite of the long distances many products to and from the coastal areas move in trucks. Also, trucking share of the international flows to Central Asia is larger than rail. Although the trucking industry plays a vital role in the region, it is plagued with some serious difficulties:

- The trucking industry in Xinjiang is still going through an evolution following deregulation – dominated by owner-operators but newly emerging large fleets.
- Supply adjustments have been slow (particularly among state-owned companies) and the market is plagued with overcapacity (particularly old, inefficient trucks).
- Structural problems (mainly directional imbalances, both intra and inter regional) further exasperate overcapacity and undermine efficient capacity utilization.
- Rather than regulatory intervention (price or supply control), industry stabilization should be promoted through fleet retirement, consolidation, and renewal.
- Structural traffic imbalances cannot easily be corrected, but asset utilization can be improved through effective deployment and sharing of information systems.
- Further development of large fleets (still using owner-operators) should be encouraged to improve dispatch efficiency, vehicle utilization and service levels.
- Truck-parks play a key role in the functioning of the industry – their further development and diversification into ancillary services should be encouraged.

29. Given the distance from major markets and the perishable nature of key export products, air transport already plays an important role in Xinjiang. The scope of air cargo services can be expanded even further to serve the regional economic interests – not only in promoting the shipment of perishable products but also helping other manufacturing industries with both inbound and outbound shipments. The following should be noted:

- Most of the domestic outbound demand for air cargo services in Xinjiang is from fresh fruits and vegetables. Among inbound cargos – much lower in volume than outbound – are mostly high-value consumption goods and electronics.
- There is potential for growth in existing flows (particularly outbound perishables) as well as others (both inbound supplies and outbound shipments) as the local economy diversifies into more processing and manufacturing sectors.
- Currently the major problem is price, which at present levels will continue to stifle economic opportunities that may depend on reliable air freight services. The main problem is the dependency on belly-capacity of passenger aircraft.
- The key to lowering the cost of air cargo services is to attract dedicated cargo carriers. This is of course common practice on international routes, but domestic cargo services in China have received only limited attention to date.

- At this stage of Xinjiang's development it would certainly be in the public interest to promote dedicated air cargo services to/from Urumqi – some of the region's export staples as well as newly emerging industries depend on air cargo services.
- The cause is definitely worthy of government support, not necessarily in ongoing subsidies but in being instrumental to attract suitable operators – including international freight-forwarding companies or domestic cargo operators.

### **III. LOGISTICS INDUSTRY CAPACITY**

30. Over the years the scope of transport services – offered by trucking companies, railways, and shipping lines – expanded to include broader logistics functions. The origins of this trend can be traced back to a combination of both demand and supply driven factors. On the one hand, customers (i.e. shippers) needed to integrate storage, warehousing, distribution and inventory management functions together with transport activities – they started looking for more complete service packages. On the other hand, transport service providers (i.e. carriers) were trying to expand beyond their intensely competitive (thus, not very profitable) business domain, to offer more value-added services that might yield higher margins.

31. In this section we review the development of these logistics trends in Xinjiang and assess the local logistics industry's capacity to accommodate them. Since the industry is in its very early stages of development, it is difficult to provide a conventional structural review – what we generally regard to be the logistics industry's constituent elements have not yet emerged in Xinjiang. Our analysis of the local industry conditions here focuses on: presence of external service providers, logistics functions of local trucking companies, transport terminal and facility operations, and the role of trade and distribution centers.

#### **A. Logistics Needs and Requirements**

32. Before examining the logistics industry's capacity and exploring alternate development models, it is useful to briefly consider the nature of demand for logistics services in Xinjiang. The local economy is dominated by the resource sector and agricultural staples. Bulk commodities constitute a large share of shipments out of the region. Although "bulk logistics" is a rapidly changing and growing business in many parts of the world, out-sourcing practices are not as prevalent as in manufacturing. Producers tend to perform their own logistics management functions and rely on transport companies to provide the truck or rail capacity they require. However, there is scope for change and the future of bulk logistics business in Xinjiang should not be ignored, particularly in view of the sector's importance in the regional economy.

33. There is greater potential for the development of out-sourced logistics in heavy industries but current practices are still limited in scope. For example, the large steel complex near Urumqi performs logistics functions in-house; it runs its own fleet for certain types of carriage but also hires substantial transport capacity from commercial carriers. As the local logistics industry develops, these practices may gradually shift in favor of qualified third-parties performing a broader scope of logistics services. Currently, the food industries are riper for third-party practices. For example, the leading tomato producer in the region (second largest in

the world) may be open to more third-party involvement as the capacity of the local logistics industry develops. Similarly, other food and beverage industries offer potential for contract logistics opportunities.

34. Perhaps the region's needs from the logistics sector can best be demonstrated through the experience of a leading manufacturer in Urumqi. The company is a national leader in the wind energy sector, with four manufacturing plants and installation sites all across China. It produces three different types of windmills which require different parts and components, 10% of which are imported while the rest procured from 50 different domestic suppliers. Recently the company made an effort to improve its supply-chain activities currently managed centrally from Urumqi – buying and delivering parts to its manufacturing facilities and sourcing components to support its installation sites on an ongoing basis.

35. The company was prepared to outsource its transport and logistics functions, but failed to find a qualified service provider that could take on the project in Urumqi and manage it across the country. The logistics provider the company was looking for is precisely what is missing in Xinjiang. There are a number of local transport companies who recognize this need and are attempting to position themselves as third-party service providers in the hope of responding to the needs of local industrial companies. However, they need considerable support in developing their service capacity with professional expertise and information systems – as well as their network of service partners across the country.

36. Shifting from user needs to the logistics industry's actual capacity, it can be clearly observed that as in most parts of China's interior, the industry in Xinjiang is at its very early stages of development. There is a lot of reference to logistics and third-party services being offered, but in fact, there is very little activity that can be regarded as modern logistics functions being performed by *bona fide* third-party providers. As it has become fashionable in most parts of the world, there are a number of transport operators presenting themselves as logistics providers, but many of their offerings are in-name-only – they offer very little more than traditional transport service. Also, there are a number of large diversified distribution centers; though they are primarily merchandising operations, they do provide distribution and logistics functions. In addition to the capacity of local companies, terminals, facilities and distribution centers, large national and international logistics providers have some local presence.

## **B. International Logistics Networks**

37. All of the major international parcel-express companies – including UPS, FedEx, DHL, and TNT – are in the midst of a competitive drive to expand the scope of their global networks. China constitutes the largest expansion market for them. Some of these major players already have a local presence in Urumqi; FedEx together with their China partner Datian Express probably with the most prominent market position. Others can be expected to arrive in due course. Whether major players will choose to work through local agents or establish a direct presence of their own will depend on the size of the local market, as well as their respective priorities in expanding into China's interior.

38. The services offered by international companies are complimented by China Post, which already has a large distribution center near the Urumqi airport, offering both ground and air services. The ground services are provided by rail, through the East Terminal, where China Post has a small terminal to handle their own railcars that are moved by regular train services.

The air services are provided through China Southern, the dominant air cargo operator in Urumqi, which in addition to the China Post business also handles other providers like FedEx, as well as its own service offerings.

39. While the local representation of the industry's top tier may be quite thin, there are smaller international freight-forwarders with a focus on Xinjiang. For example, Safetrans is a Hong Kong based forwarder with seven offices across China, including one in Urumqi – the company also has representative offices in Kazakhstan and Russia. The company's business focus is on rail movements across Asia, with demonstrable expertise in dealing with logistics problems that confront shippers relying on Central Asian railways. The company also places a great deal of emphasis on securing rail-car capacity (both eastbound and westbound) to become the shippers' agent of choice. While the company's focus in Urumqi may be on Central Asia, it also handles exports to Russia and other parts of Europe through China's eastern ports, recognizing that "land bridge" costs are still too high to be competitive with the much longer eastern route.

40. The logistics divisions of major express companies are more difficult to attract to smaller markets. The same applies to international freight forwarders (e.g. Panalpina), logistics divisions of shipping lines (e.g. Maersk Sealand), and dedicated contract logistics firms (e.g. Exel). However, China's own leaders – COSCO and Sinotrans which are among the largest transport and logistics companies in the world – may be more willing to expand into Xinjiang. For example, Sinotrans is already working on contract logistics opportunities into Central Asia. In time COSCO is likely to play a more active role in Xinjiang, particularly as the "land-bridge" concept materializes across China. Also, China Post has started to play an increasingly active role in all domestic markets as its subsidiary EMS expands logistics and forwarding services, following the examples of the Dutch and German through TNT and DHL respectively.

41. There is, of course, scope for government action to encourage more logistics companies, both domestic and international, to increase their profile in Xinjiang, directly or through partnerships. Influence through "moral suasion" is always helpful but not very effective unless market conditions justify. A more effective remedy is to work through influential shippers with large exports volumes that warrant sophisticated contract logistics arrangements. Although it is difficult to entice large logistics companies through direct financial inducements, they are very responsive to customer needs. In fact, financial support offered to shippers is more effective and locally beneficial than providing subsidies to carriers or service providers.

42. Other worthy developmental instruments that can be deployed are "enterprise capacity" programs directed at local logistics firms, so that they can mature their contract service offerings and partner with their international counterparts. Strongest inducement for large logistics companies to come to markets where they cannot justify their own presence is through strong local partners – which in time they often acquire and integrate into their own corporate networks. International logistics companies guard their reputation; customer satisfaction is their strongest reference and marketing tool. They always expect their partners to meet certain service quality standards; moreover, they expect their partners to adopt their own contract management practices and integrate (or at least interface) with their own information technology platforms and systems. We deal with some of these "enterprise capacity development" issues in more detail below.



### C. Local Transport Companies

43. Among the ranks of the trucking industry in Urumqi two of the largest companies – Xin-Da-Di and Afanti – are promising candidates who can offer not only more efficient transport services, but also more diversified logistics functions. Both rely on owner operators but provide their own terminals and control customer service. Xin-Da-Di is a recently privatized state-owned-enterprise with a good performance record (both service and financial), while Afanti is a fairly new start-up which has experienced tremendous growth and expanded its reach to most other parts of China. While they are currently focusing on different market segments, their aims and goals as well as capacity development requirements are fairly similar.

44. These two established trucking companies clearly recognize the importance of logistics services – they both have the vision to expand into this domain. At the same time, however, they are fully cognizant of their own limitations in executing this vision. They lack the necessary professional expertise and the management capacity, and they have difficulty recruiting the “talent” they need locally. Solutions to these problems lie with training, through both educational and on-the-job training. Educational training courses take time to yield results – the benefits cannot be realized immediately to meet the pressing needs of the emerging logistics industry in Xinjiang. In the short term there are more effective means of responding to the industry’s needs through targeted enterprise capacity development programs. These programs are supported by international development agencies, and can be tailored to meet the needs of specific enterprises – both in scope and timing. The contents generally cover four key aspects.

- Logistics is largely a knowledge-based business – companies entering this business must possess the necessary professional expertise in logistics
- Logistics companies have to develop the necessary capacity for service planning and performance management – through contract specific operational plans.
- Effective contract management practices are key success factors – logistics contracts involve not only diverse service elements but also multiple parties.
- Information and communications systems have become essential elements of modern logistics – all aspects of the logistics business rely on ICT platforms.

45. Effective delivery of enterprise capacity development programs requires considerable effort, and has to be carried out by professionals with strong logistics background and actual implementation experience in delivering such programs. The material described above is fairly generic and apply to most logistics enterprises at different stages of their development. In order to be effective, however, the particular needs of the targeted companies have to be carefully reviewed and understood. The program contents and delivery methods have to be tailored to specific enterprise needs, and suitable to local market conditions. Generally, these programs are delivered in stages typically over a period of few months, but leaving behind a continuous training process which may require periodic expert input. Sometimes it also becomes necessary for an expert-in-residence to work with the company over a longer period of time.

## **D. Transport Terminals and Facilities**

46. One of the market responses to the trucking industry's transformation following deregulation was the emergence of truck-parks, facilities where independent operators started to congregate to find loads. These facilities started to serve as open trucking markets where agents could post loads to specific destinations, and independent truckers looking for revenue opportunities could bid for those loads. These facilities are now wide-spread in most cities throughout China, initially located near city-centers then moving further out to the outskirts. They accommodate local operators using them as their home-base, as well as outsiders looking for backhauls to return to their own home-base. The parks basically serve as clearing houses for supply and demand for freight services. The shipper interests are taken care of at the lowest possible price, while truckers receive the highest price the market can bear – true market dynamics at work.

47. From the perspective of the logistics industry in Xinjiang, or any where else in China for that matter, truck-parks present important opportunities. In fact, they provide a primitive form of logistics parks; freight agents provide a valuable third-party function between shippers and independent operators. Other than the load-brokerage function, the existing range of services is fairly limited – primitive storage and warehousing facilities, as well as basic driver services. However, there is plenty of scope to expand on the range of services to provide a variety of logistics functions. In general the physical facilities are lacking and not very conducive to modern logistics practices; they need to be improved and modernized. Also, there is plenty of scope to develop information systems for common use at these facilities by all parties concerned – shippers, agents, truckers and other service providers.

48. Some of these service concepts are currently being pursued at the largest truck-park in Urumqi but the facilities are still inadequate, requiring considerable investment for further modernization. There is a facility built to house an information center but the systems are not yet functional. With initiatives like this truck-parks can function as “incubators” breeding and nurturing the development of third-party providers that can diversify into more sophisticated logistics services, while performing their transport service functions more efficiently. Once they reach a certain size, these service providers can move to their own premises, at the same truck-park or elsewhere in the city.

49. Similar opportunities exist at railway terminals, particularly the Eastern Station where a fairly primitive third-party logistics facility already exists. The railway provides cross-docking and storage facilities that are rented out to shippers and independent service providers. There are a number of small service providers currently performing loading, unloading, storage and some distribution functions. The railway itself also provides consolidation and certain logistics services using the same facilities. However, there remains considerable scope for improvement, both in physical facilities and information systems conducive to modern third-party logistics practices. As in truck-parks, specific initiatives that are worthy of support include the development of information system platforms to facilitate more efficient dispatching, scheduling and planning functions, as well as the provision of modern logistics facilities for storage, warehousing, packaging and other processing purposes.

## **E. Trade and Distribution Centers**

50. The trading and distribution centers in Urumqi which are indeed impressive in size, diversity and functionality – among the largest are Hualing, Guanghui, Huo-Che-Tou, and Bian Jiang (specializing in building supplies, furniture, appliances, home furnishings, toys, clothing, footwear, etc.). Although the merchandising trade has proven to be enormously successful in the last few years, steps have to be taken to ensure the future viability of Xinjiang as a transit trade hub. To this end, the transit trade centers have to establish strategic advantages by strengthening merchandising and logistics practices – otherwise they may be vulnerable to newly emerging distribution patterns within Central Asia, as well as direct buying practices from Eastern China. Before Xinjiang can add value to the transit trade, it has to become the least cost route from all parts of China to Central Asia by reducing transport and logistics costs along the way.

51. Although the logistics practices of these centers may be among the most advanced in the region, there is still room for improvement, in managing both inbound supplies and outbound distribution. In fact best-practices in logistics can be leveraged to consolidate Xinjiang's position as a natural "merchandising center", selling and distributing products made all over China to markets in Central Asia. Improved logistics practices at the major trade centers in Urumqi will also help the logistics industry's development at large, thus benefit the region as a whole. The desired logistics improvements can be achieved in-house under the centers' direct control, or through third-party logistics providers.

52. In considering improvements in logistics practices in the transit trade, a clear distinction must be drawn between outbound deliveries and inbound supplies. Although the buyers always have the option of arranging for their own deliveries, all the major distribution centers in Urumqi offer these arrangements as value-add services. They use these services to gain competitive advantages over each other, but they still appear to be making healthy profit margins from outbound logistics. The common delivery practices involve either independent operators or larger trucking companies that specialize in cross-border trucking. Only one of the large trade centers manages its own fleet of owner-operators, but if the buyers wish, all of them assume responsibility for custom clearance and transportation arrangements through other parties they deem suitable.

53. Inbound logistics practices are more varied – those with a bigger stake in merchandising (e.g. Guanghui) are more directly involved, while others operating more as property-managers (e.g. Hualing) leave inbound supply logistics in the hands of resident merchants. In the long run, however, it is a strategic mistake to remain passive with respect to inbound logistics – trade centers have to take charge of their supply-chains right from the supplier sources throughout China, all the way to end markets. This calls for a much more active involvement in making intermodal arrangements, securing container supply, and managing the carriers. In this remote location, even the largest centers cannot afford to rely on their suppliers to manage their shipments, since these suppliers have little at stake with limited volumes shipped to Xinjiang. The entire supply-chain along the transit route, together with local value-added and merchandising activities, has to be managed in an integrated manner to ensure that all efficiencies are realized and the associated productivity improvements captured.

54. In order to maintain their competitiveness in the transit trade, merchandising centers have two basic choices with respect to supply-chain management: they can try to develop the expertise in-house and implement their own logistics strategies, or go through third-parties

whose expertise can be shared by all trade centers (as well as other industries in Xinjiang). The idea of cooperative action among them without third-party involvement may be difficult since they see each other as competitors. Only if they could be convinced to cooperate, or collectively rely on selected logistics service providers, third-party expertise is likely to develop more quickly and effectively.

55. The difficulty with third-party approach in the short run, however, may stem from the fact that no other logistics provider in the region is likely to have as much expertise as these major centers currently have within their own organizations. If they could be convinced of the virtues of cooperation by overcoming the competitive perceptions they have of each other, the best possible strategy is for them to pool their logistics resources in a new entity. They can then draw on this entity for services in a third-party capacity, while the same resources would be available to other industries to utilize as well. A venture of this nature would deserve all the government support that can be mobilized, directly as well as through international agencies.

56. Once a development candidate is selected – at-arm's-length third-party or a joint-venture entity – the required development resources are the same as those discussed above pertaining to enterprise capacity development in general. The basic ingredients of a modern logistics organization are three-fold: professional expertise, information systems and good management. All these elements can be developed through an effective “enterprise capacity” building program, involving training and technical assistance. Once the organization's core capacity is in place, its success hinges on developing good relationships with both customers and suppliers (primarily transport providers). In order to execute its mandate, the new logistics organization will also need proper terminal facilities as well as effective operational and performance management practices.

#### IV. DEVELOPMENT STRATEGY ELEMENTS

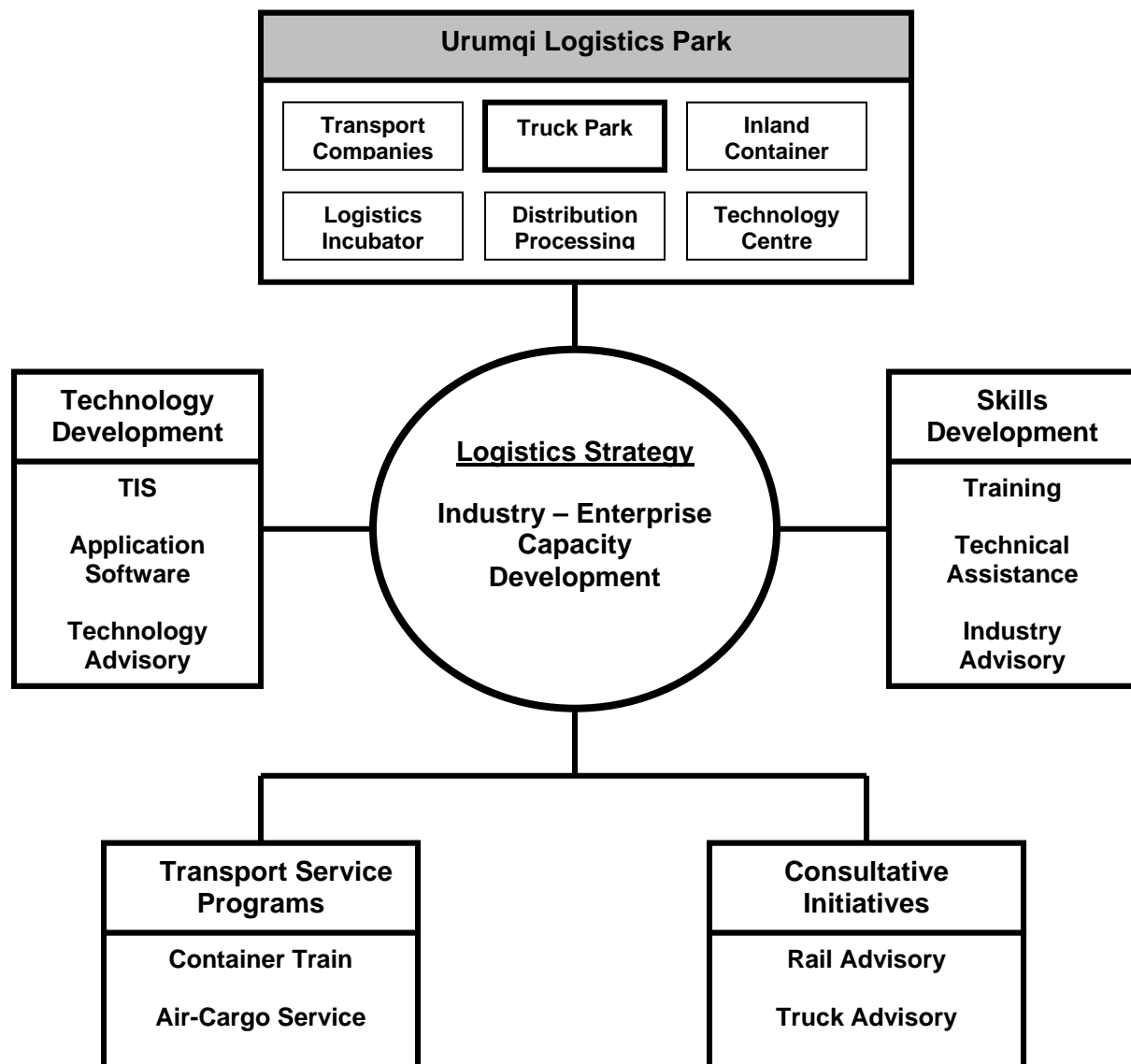
57. Given the region's location, at considerable distance from major markets, as well as its resource-based economy, transport and logistics play a very important strategic role in Xinjiang. The region's economy is adversely affected by the current problems encountered in the transport industry – capacity problems due to insufficient rail-car supply and instability caused by overcapacity in the trucking industry. More importantly, shortcomings of the logistics industry, still in its infancy in Xinjiang, hold the region back from realizing its full industrial development potential. A viable development strategy for the transport and logistics sector is vital to the region's continued economic growth.

58. The obvious transport problem stems from the fact that costs are high and the required capacity is not always available, particularly in rail transport which is essential for moving raw materials and bulk commodities produced in the region to eastern markets. Outbound commodities are low value and high volume while inbound traffic is in limited quantity, giving rise to a structural imbalance. It is difficult to position sufficient rail-car capacity to meet eastbound demand without empty westbound movements – presenting an operational problem for the railway and high costs to shippers. The real solution lies with more local processing to add value to the region's resource base, which in turn will tend to reduce volumes and increase the value goods, thus reducing transport costs in relation to GDP. The key to this is further industrialization which has to be supported by appropriate logistics practices, both for inbound supplies and outbound shipments.

59. Development strategies in the transport sector tend to focus on capital investments in infrastructure and terminal projects. This tendency is now evident in the logistics sector as well; there is a great deal of interest in facility investments, and increasingly more attention paid to large logistics-park projects. Undoubtedly these are essential elements of the transport and logistics sector in emerging economies. However, the exclusive focus on their development often comes at the expense of “softer” investments that are equally necessary in developing the capacity of the transport and logistics sector.

60. The temptation to focus on large capital investments is also evident in Xinjiang. The principal obstacles holding the region's industrial base from developing may not be infrastructure capacity shortages, but the logistics industry does indeed lack adequate facilities. An equally important part of the challenge is to overcome operational problems and develop the sector's knowledge base, professional expertise, and management capacity, together with the necessary information systems. This calls for a development strategy emphasizing “soft elements” – training, technical assistance, information dissemination, cooperative programs, as well as new policy initiatives. In this report we present a development strategy for the logistics sector in Xinjiang, aimed at improving facility conditions, enhancing operational capacity and promoting modern logistics practices. The core of our proposed logistics strategy is *industry capacity development* with a focus on assisting logistics service providers to build their *enterprise capacity*.

## Xinjiang Logistics Strategy



## **A. Facilities: Urumqi Logistics Park**

61. The logistics industry in Urumqi is quite fragmented and scattered throughout the city in substandard facilities. The industry would benefit greatly from a specially designed logistics zone that could bring various elements of physical distribution and logistics functions together in one location. To facilitate this we recommend the development of a modern Logistics Park in Urumqi, which will provide the following principal benefits:

- Provide a physical environment conducive to advanced logistics, and modern facilities that can accommodate efficient and high-quality logistics operations;
- Promote synergies among a diverse base of logistics service providers that would benefit from being in close proximity to each other in one industrial zone;
- Realize all the scale and scope economies inherent in an integrated cluster of logistics, as well as related commercial and industrial, activities in one location;
- Establish a focal point for the government to assist in the provision of land, infrastructure and support services to all the tenants of the logistics park; and
- Create a high-profile image that would attract quality service providers as well as industrial activities that would benefit from being close to logistics services.

62. Modern logistics parks are multi user facilities attracting tenants from different segments of the logistics industry as well as firms engaged in related commercial and industrial activities. These parks also attract users (manufacturing or merchandising companies) with distribution operations that can be separated from core facilities (manufacturing plants or retail stores), operated by themselves or by third-parties. By its very nature, logistics parks have different types of buildings and facilities of varying sizes (single or multi-user) designed for particular functionality or specific customer needs.

63. The Urumqi Logistics Park should strive to become a zone with a diverse tenant-base engaged in a variety of logistics and distribution functions, as well as related commercial and industrial activities. The Park should incorporate a number of different functional elements, accommodating a broad scope of activities associated with each element – including truck-park facilities, transport companies, inland container depot, logistics incubator, technology center, and distribution/processing functions. Due to their multi-user and multi-purpose nature logistics parks require comprehensive planning and detailed design to accommodate the required functional diversity, as well as the flexibility to meet future needs. The development follows a five-step process: planning, infrastructure, marketing, design-build, and property management.

64. We recommend that the Regional government in partnership with City of Urumqi take the lead in the development of Urumqi Logistics Park. Towards this end, we identify the following immediate action items which constitute the initial tasks in project development:

- Establish a stock-holding company for property development and management
- Find suitable development land, and sell/transfer to stock-holding company
- Seek funding from development agencies to fund preliminary studies

- Retain qualified consultants to prepare master plan and develop business plan
- Negotiate with anchor tenants: truck-park operator, major transport companies

65. The above tasks can be accomplished through the stock-holding company under government ownership. Beyond this initial stage, however, it is highly desirable to find one or more private sector partners who are qualified to manage the project and make the necessary financing arrangements for infrastructure development as well as the design-and-build process that will ensue. The latter may attract partial financing from the occupants, but the lead developer has to be positioned with proper capitalization. Once these preliminary steps are underway, the following actions can proceed:

- Restructure the stock-holding company to reflect the interest of new investors
- Finalize negotiations with the initial anchor tenants to build their facilities
- Conduct more detailed feasibility studies for the remaining project components
- Embark on a marketing program to reach out to both domestic and foreign prospects
- Develop a detailed design-and-build program to attract other major tenants
- Design and construct selected multi-user buildings for general occupancy

## **B. Technology: Systems Development**

66. Information and communication technologies (ICT) have become extremely important elements of global logistics systems. Service providers require state-of-the-art technologies to improve operational efficiency – tracking and tracing systems to monitor service performance, as well as internal systems for management purposes. Also, ICT channels have become the standard links with customers as well as between service providers working together to provide seamlessly integrated service packages. The logistics industry in Xinjiang is lagging behind in technology applications. A concerted effort is required to develop ICT platforms, for industry-wide usage as well by individual enterprises. This requires the leadership of local and regional governments, and the financial support of development agencies. We recommend a three-prong strategy.

67. *(i) Transport Information System:* A database system should be developed to provide basic capacity and vehicle availability information over the Internet. Truck owners (in Xinjiang as well as from outside the region) can register and report information on their availability at specific times at given locations, ready to carry loads to designated destinations. With the availability of this information over the Internet, logistics service providers (or individual shippers) can secure the capacity they require. A system like this can link transporters and shippers electronically, facilitating vehicle bookings and price negotiations, and also help reduce the region's persistent traffic imbalances and capacity utilization problems. *We strongly believe that the design and implementation of a system suitable to particular local needs will greatly benefit the Xinjiang industry.*



68. *(ii) Application development capacity:* Both shippers and service providers in Xinjiang are in need of software applications to address their operational planning, performance monitoring, and business management needs. There are plenty of logistics software packages available from global as well as local vendors in China. However, they tend to be expensive and beyond the capabilities of most start-up logistics companies to implement and utilize effectively. At early stages of development, service providers require more simple applications which often give rise to custom development efforts using simple software tools. Also, as their service scope expands, software applications have to evolve with their changing needs, at least until they reach the maturity to use standard off-the-shelf packages. *Creation of a local resource pool for application software development will greatly benefit the emerging logistics providers in Xinjiang.*

69. *(iii) System implementation and management:* Many logistics service providers in Xinjiang lack the most basic computing platforms (e.g. PCs, local networks, internet connectivity). Others may possess the basics but need to upgrade their systems (e.g. larger servers, wide-area networks, web-based solutions). Also, some operators feel the need for tracking systems and mobile computing applications. Regardless of their current state of development, most companies cannot turn to a reliable technical source for sound advice and implementation help – they become too dependent on vendor advice that is not always objective. Emerging logistics companies in Xinjiang would greatly benefit from a reliable advisory source and dependable implementation assistance. *The region needs a reliable technology service provider specializing in logistics, offering advisory, implementation, and on-going management services.*

70. The recommendations made above with respect to information technology development initiatives are easy to justify but difficult to implement. Adequate technical resources are scarce, not only within government agencies themselves but also among the ranks of private industry at large. In order to implement the recommendations made above, there will be considerable challenges in mobilizing and training technical resources – initially it may be necessary to recruit additional technical resources from elsewhere in China or abroad.

71. In order to provide a suitable structure the regional government should take the lead to form a new stock-holding company. This should be established with initial seed capital from the regional government, preparing it to attract funding from international development agencies as well as further investment capital from private sources. In this respect, ADB's assistance should be sought to provide project financing. Once established, the new stock-holding company should tackle the following tasks:

- Utilize project financing to prepare a business plan, drawing on technical expertise in information technology and systems applications in the logistics field.
- Design a suitable development platform for the Transport Information System recommended earlier; prepare the system for prototype implementation.
- Make the necessary system modifications and changes, and launch the TIS for commercial applications using a web-based user subscription model.
- Attract additional financing to develop the professional resources required for software application and system management objectives proposed earlier.

### C. Training: Skills Development

72. It is clearly recognized that the region is lacking logistics and supply-chain management expertise, not only in the transport sector but among the ranks of industrial enterprises at large. Almost all of the transport and logistics enterprises consulted in the course of this project identified lack of logistics “talent” as the major obstacle holding back their development and further growth. They would welcome any form of technical assistance to help them develop their professional skills and management capacity.

73. *We recommend that government initiatives in Xinjiang give utmost priority to technical and professional training aimed at developing the “enterprise capacity” of transport companies who wish and are prepared to invest to expand their logistics services.* This could be achieved through training courses as well as targeted advisory services offered to select companies, with a view to develop their professional expertise and knowledge in modern logistics practices. International development agencies (ADB, World Bank) are generally very supportive of such initiatives and often prepared to provide funding.

74. *(i) Training programs:* Although there are other institutions providing general business education and management training in Xinjiang, the only accredited organization in the logistics field is the Agricultural University, which offers a diploma program as well as certificate examinations. The program currently can not meet all the local requirements – neither in volume nor in scope. At this stage, the region needs many more graduates than the University can produce, and with greater depth and breadth of logistics knowledge. Also, the industry requires more resources devoted to continuing education for its current staff, which the Agricultural University can provide with more financial support and expanded staff resources. *Additional funding should be mobilized – from central and regional governments as well as international development agencies – to recruit logistics expertise on a visiting basis from other parts of China or overseas.*

75. *(ii) Enterprise capacity:* Leading transport companies have to enhance their professional expertise in order to expand the scope of their logistics services and contracting practices. More training and educational programs will go along way to serve the needs of the local industry, but the results of these efforts may not be observed immediately. To achieve direct results in the short term, more targeted enterprise training is required. With the help of international agencies, who are often very keen to fund such programs, Xinjiang government should embark on a rigorous enterprise capacity development program. *In addition to general training open to all industry participants, the efforts must also incorporate advisory services – technical assistance to selected companies – preferably on a cost sharing basis to ensure corporate commitment.*

76. *(iii) Industry training:* Development of third-party logistics practices also require changes among commercial enterprises, where transport and logistics are internalized along conventional lines. Reluctance to engage in third-party practices is holding back the logistics industry in China. Training efforts have to be extended to industry at large to promote modern logistics practices, and the virtues of third-party contracting practices to take advantage of specialized expertise offered by logistics companies. Once the service providers can demonstrate their ability to execute contracts, the customers have to be convinced of the benefits of contracting out. *This requires a great deal of industry training, an area where the government should take the lead through seminars, conferences, training courses, and technical assistance to companies.*

77. The training and skills development initiatives recommended above are of crucial importance for the logistics industry's capacity development in Xinjiang. To facilitate the implementation of these recommendations, the Xinjiang government should designate a lead educational institute with the necessary qualifications and accreditation in the logistics field. All training program and technical assistance activities should be coordinated through the designated institution. The Xinjiang government – with the assistance of ADB and other international development agencies – should provide the necessary funding for the execution of the following tasks we recommend:

- Enhance the curriculum and expand the capacity of the existing diploma and certificate programs offered in Urumqi and elsewhere in the region.
- Develop curricula and offer continuing education programs in logistics – open to all the interest participants from the logistics industry.
- Draw on the project funding provided by ADB and other agencies to develop a comprehensive technical assistance program for enterprise capacity building.
- Coordinate the efforts of domestic and international experts (funded by external sources) to deliver the technical assistance program to logistics enterprises.
- Assist in the preparation and delivery of seminars and conferences aimed at raising awareness of modern logistics practices – particularly outsourcing.

#### **D. Service: Transport Programs**

78. While the focus of this development strategy is clearly on the logistics sector, our recommendations must address some of the basic transportation problems in the region. Logistics providers rely on transport capacity to serve their customers. Their principal focus may be on service coordination and integration (as well as direct provision of warehousing and distribution functions), but they are still dependent on transport operators to fulfill their contractual obligations. Thus, the scope of our recommendations must deal with the most pressing transport service deficiencies.

79. *(i) Container Train Service:* Modern industry needs access to containerized transport, both domestically and internationally. In China's operating environment the only way to introduce reliable container services is through fixed-schedule trains. A regular container train service between Urumqi and a major east coast port can run weekly or bi-weekly with a capacity of 100-120 containers per departure (requiring dedicated train sets consisting of flat-cars, and a pool of containers).

80. To this end, a project implementation committee should be appointed, consisting of representatives from the Xinjiang government, local railway bureau, and NDRC in Beijing. The second step is securing the necessary project financing (from ADB or World Bank) to fund the technical analysis and planning efforts, as well as other costs associated with the project launch. The time frame for these efforts is estimated to be about six months. If activities can commence before mid-2005, a fixed-schedule train can be introduced under the management of the local railway bureau before the end of 2006.

81. *(ii) Air-cargo services:* Air transport provides the fastest but most expensive means of moving freight. Despite the higher costs involved, many industries rely on air-cargo services to meet their particular requirements. The current constrain is price, which tends to be high due to

the dependency on passenger airlines that limit their services to aircraft belly-capacity. The key to lower cost air cargo services is to attract dedicated cargo carriers. The regional government should actively work to attract cargo operators (domestic carriers or international forwarders) to provide regular cargo service from Urumqi to one or more of the major eastern gateways.

82. The viability of air-cargo services to/from Urumqi requires further investigation. To establish a case for such services, more detailed market potential and financial feasibility studies have to be conducted. If the results of these studies are promising and a strong economic case can be established, more detailed operational planning efforts can proceed. International development agencies should be approached to arrange for the necessary project funding. Before suitable operators can be selected, there may also be certain regulatory issues to be resolved – requiring cooperation between central and regional governments.

## **E. Advisory: Consultative Initiatives**

83. In addition to the specific facility, technology, skills development, and service initiatives we recommended above, there are a number of areas that have to be approached in an advisory capacity. These include initiatives to embark on new policies, achieve institutional improvements, and implement regulatory changes – initiatives aimed at strengthening and further developing the capacity of the logistics sector in Xinjiang. These initiatives generally require a consultative framework, with the participation of both public and private interests – in other words, involving both government and industry.

84. *(i) Rail Advisory:* Rail transport plays a crucial role in Xinjiang. The region is dependent on the railway to get its raw materials and bulk commodities to major markets where they are needed. Also, the local industry relies on rail for its inbound supplies and outbound shipment of its manufactured products. Currently the eastern route also provides access to overseas export markets. The basic problem facing Xinjiang with respect to east-bound rail service is lack of sufficient rail-car capacity to handle both domestic and export demand.

85. The railway also plays a vital role in connecting Xinjiang to Central Asia and beyond as the land-bridge to Europe develops. While the latter may have a longer-term focus, more immediate service and border-crossing improvements can be tackled through regional cooperation, both internationally and institutionally within China. The specific issues to be addressed (with respect to both east and west-bound) include:

- *Rail-car capacity* has to be increased by repositioning more rail-cars at Urumqi. Discussions to this effect should commence with the Ministry of Railways.
- *Capacity allocation* measures should be adopted, either through differential pricing or quotas. This requires industry-wide consultations throughout Xinjiang.
- *Land bridge* is a longer term concept, but there are immediate service improvements that can be achieved through closer regional cooperation.

86. *(ii) Truck Advisory:* Trucking is the dominant mode of transport within Xinjiang, as well as an important element in interregional trade, with both the rest of China to the east and Central Asia to the west. The industry consists of small operators, who are the predominant truck owners, as well as more established transport companies that provide terminal facilities,

dispatching and customer service functions, in most cases using owner-operators (independent or carrying company logo). In addition to the commercial trucking industry, there are also many fleets that are owned by government and industrial enterprises.

87. The state of the trucking industry in Xinjiang resembles most other parts of China's interior, but is plagued with more serious capacity problems that destabilize the market and threaten the financial viability of the operators. Poor equipment utilization lies at the heart of the industry's problems, partly due to overcapacity and partly attributable to structural factors. In a resource-based agricultural economy, there are serious imbalances in traffic flows that lead to empty back-hauls. Under these conditions, there are measures local and regional governments can take to facilitate market adjustments.

- *Fleet retirement* should be given priority and encouraged in order to alleviate excess capacity – among state owned as well as commercial fleets.
- *Information dissemination* can help achieve better load balances, thus improve capacity utilization – the TIS recommended above should be implemented.
- *Industry consolidation* can be encouraged through mergers and acquisitions – using “moral suasion” or more direct incentives such as preferential contracting.
- *Uniform regulations* should be adopted and enforced through strengthened compliance practices – avoiding preferential treatment to any carrier.

88. These advisory initiatives are extremely important in the pursuit of developing the capacity of the logistics industry in Xinjiang, but at this stage it is difficult to provide any further guidance on the scope of work – further effort is required to develop a more precise frame of reference and approach. We recommend the creation of “advisory committees” consisting of government and industry representatives in each of the two areas, rail and truck. The committees should carry out their activities within specific “terms of reference” developed to address their respective mandates. Furthermore, we recommend that ADB (with additional financial assistance solicited from other international development agencies like the World Bank and United Nations) fund specific technical assistance projects to develop these terms-of-reference. These studies should also identify the resource requirements, and their possible sources of funding, to carry out the work within the recommended terms-of-reference.

## **F. Implementation Recommendations**

89. In order to carry out the strategy recommendations proposed above, the full commitment of the Regional Government's is required – where needed also the support and participation of local governments (e.g. the development of the Urumqi Logistics Park). Towards this end, the Regional Government will require both technical and financial assistance from international development agencies – and/or from other sources of funding. Since the inception of this project the Asian Development Bank has declared its intention to further fund the implementation efforts with a technical assistance budget of \$500,000. Below we outline our recommendations as to how these funds could be allocated to facilitate the efforts towards the implementation of the five-prong logistics development strategy proposed above.

90. Urumqi Logistics Park: The Regional Government must take the lead in this project in partnership with the Urumqi Government, and make a commitment to provide suitable land. Towards this end, a stock-holding company should be formed with an appropriate amount of seed capital (to be supplemented with the value of the transferred land). The ADB can provide \$100,000 of technical assistance towards the preparation of the recommended preliminary studies – master plan and business plan. Based on the outcome of these studies, the development company can be restructured with the appropriate level of financing, from a combination of public and private sources depending on the strength of the financial projections.

91. Information Systems Development: The Regional Government should take the lead on this as well with the formation of a stock-holding company to carry out the three-pronged mission – TIS, application development, and technical services. Depending on the level of government support (i.e. the company's initial registered capital), ADB should consider providing up to \$100,000 of technical assistance. While a limited portion of this budget can be allocated to business-plan preparation, the bulk of the funding should go towards the design and development of the TIS. Once this system is operational, the company's resources can be diverted to the other two areas (application development and technical services). At that stage, the company should be financially self sufficient, commercial revenues covering its operating costs. In order to achieve this level of financial viability, however, further investment may be required, preferably from private industry sources.

92. Logistics Skills Training: ADB should consider funding the proposed training efforts with a budget of \$100,000. Half of this amount, with matching Regional Government funding, should be allocated to the selected educational institution to support the development of technical resources, course curricula, and programs contents, as well as partial funding for seminars and conferences. The other half of the ADB budget can be allocated to enterprise capacity development efforts aimed at logistics companies – which should cover at least 1/3 of the required technical assistance costs, matched by at least 1/3 funding from the Regional Government. This funding formula can help stretch the ADB resources, which can be supplemented further if the program is yielding useful results.

93. Transport Service Programs: Both of the proposed programs – container train and air cargo – will require funding for the preparation of feasibility studies and operational plans. ADB should consider allocating a budget of \$100,000 for this purpose, to be matched by at least an equal amount by the Regional Government, and split evenly between the two programs. Beyond this stage, the programs should be financially self-sufficient, and if not, receive targeted subsidies from regional and/or central governments.

94. Advisory Consultative Programs: The two advisory programs recommended above – rail and truck – each require the development of more detailed terms of reference before they can become effective consultative mechanisms under the guidance of their respective joint government-industry advisory committees. Moreover, these committees will require on-going funding to carry out their mandate. We recommend that ADB consider allocating a \$100,000 technical assistance budget for the development of terms of reference, as well as for specific technical advisory services required by each committee. The Regional Government should contribute to these initial costs, and also commit to fund the operations of the advisory committees for a limited period of time (two to three years, to be extended as required).