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Researching New Opportunities to Develop Transport Infrastructure in Uzbekistan, Tajikistan and Kyrgyzstan through Establishment of Modern Transport-Logistics Centers (TLC)

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Final Report
**“Researching New Opportunities to Develop Transport Infrastructure in Uzbekistan,
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Transport-logistics Centers (TLC)”**

I. Introduction

Since centuries the development of transport communications between the countries was one of the main types of associations of people, economic development, mutual enrichment of cultures, and ultimately it strongly influenced peaceful and harmonious human development.

Researched countries of the region are successfully located and historically linked by rail, road and air communication lines to deliver various cargo both inside the region and through it as well. Main directions of transport flows between continents and Asia historically passed through the countries researched. This fact once again proves the expediency of creating a network of transport-logistics facilities to further increase potential opportunities of the region for efficient trade in Eurasian continent.

Currently main transport corridors of the Eurasian continent pass through the countries researched, which are the main routes for trade flows around CAREC countries. They include:

- Corridor №1 – Europe – East Asia;
- Corridor №2 – Mediterranean – East Asia;
- Corridor №3 – Russian Federation – Middle East and South Asia;
- Corridor №4 – Russian Federation – XUAR, PRC;
- Corridor №5 – East Asia – Middle East and South Asia;
- Corridor №6 – Europe – Middle East and South Asia.

Abovementioned corridors thanks to the efforts of the countries researched and a number of international financial institutions, especially ADB, by now have become international economically profitable corridors linking CAREC countries with large international markets.

Unfortunately as of now the countries researched lack modern transport-logistics facilities, with presence of which the efficiency of abovementioned international transport corridors would increase several times.

Active foreign economic relations in the region concerned envisage strengthened transport communications as one of its priority objectives.

Development of transport communications, and increased traffic volumes and competitiveness depend on the implementation of a set of measures from technical equipment to training qualified staff, from improved technologies to introduction of information and logistics systems.

Using logistics achievements in transport is the guarantee for increased transport sector performance in any country, which is very important for trade development allowing to more actively integrate in global transport system.

Logistics aspects of the goods flow system include optimization of decisions on selections of the modes of transport most in line with the objectives set, and their combination to accomplish maximum cost-saving effect on the basis of rational routing of cargo flows with considerations to most convenient schedule of receiving goods by the client or end users,

rendering accompanying services in the course of transportation and providing warehousing facilities.

Today in the countries concerned the issue of increased traffic volumes and increased economic performance of local carriers and freight forwarders is so actual as it never was.

Foreign experience shows that quality “break-through” in transport infrastructure development could be accomplished only by applying new technologies that meet modern requirements and international standards through using the methods and accomplishments of logistic thinking and principles.

Transport logistics as the new methodology to optimize and organize rational cargo transportations and their processing in transport-logistics centers allows to ensure efficient processing of cargo flows and significantly reduce financial, time and human costs.

The results of intermediary researches under this project show that to ensure efficient operation of the existing network of transport-warehousing facilities on the territories of countries concerned it is necessary to fully change the principles and mechanisms of their operation, aligning the existing structures of these facilities with international standards.

Development of Central Asian economies through increased international trade volumes opens new opportunities to build transport-logistics capacity of these countries, which sets special requirements to modernization of existing transport and warehousing infrastructure.

International practice shows that well thought location of transport-logistics facilities along main directions of cargo flows on international routes is the guarantee for their success and high profitability.

The experience of using transport-logistics systems in developed countries shows that operation of logistics centers allows to reduce transport costs by 7-20%, reduce costs for loading-unloading and storing resources and finished goods by 15-30%, and reduce overall logistics costs by 12-35%.

Given the positive impact of logistic management methods on foreign trade outcomes it is expedient to establish a network of transport-logistics facilities in the countries concerned.

II. Main Pre-requisites to Establish Transport-logistic Centers in the Countries Researched

Foreign experience shows that in developed countries the creation of transport-logistics facilities was preceded by identification of pre-requisites that determine expediency of their formation along main trade routes. This study identified following pre-requisites to establish transport-logistics facilities in Uzbekistan, Kyrgyzstan and Tajikistan:

- world economy globalization and active participation of CARs' national economies in it;
- increasing export potential of the countries researched;
- increasing importance of the transport factor in the logistics chain of international flow of goods and foreign trade of these countries;
- development of transport and information links of CARs with world markets;
- ensuring access to goods and services markets; expanded variety of goods and transport services market;
- measures to simplify customs, border crossing and foreign trade procedures, and development of intermodal transportations;

- accession of Uzbekistan, Kyrgyzstan and Tajikistan to most important international conventions and agreements;
- integration of researched countries' transport facilities with global transport system network and external logistics centers;
- creating conditions to attract foreign investments and apply modern technologies and standards.

Besides that the countries researched joined or are ready to access a number of international Conventions and Agreements important for international trade (Table 1).

Data on accession of Kyrgyzstan, Tajikistan and Uzbekistan to international Conventions and Agreements in transport

Table 1.

International Agreements and Conventions	1	2	3
Convention on Road Traffic (08/11/1968)	X	X	X
Convention on Road Signs and Signals (08/11/1968)	X	X	X
Convention on the Contract for the International Carriage of Goods by Roads - CMR (19/05/1956)	X	X	X
Customs Convention on Temporary Import of Commercial Vehicles (18/05/1956)	X	*	X
Customs Regime for Container Transportations (21/1/1994)			X
Customs Convention on International Carriage of Goods under TIR Carnets (14/11/1975)	X	X	X
International Convention on the Harmonization of Frontier Controls (21/10/1982)	X	*	X
Customs Convention on Containers (02/12/1972)			X
European Agreement on the Work of Crew of Vehicles Involved in International Road Transport (AETP) (01/07/1970)		*	X
Customs Convention on Temporary Import of Private Vehicles (04/06/1954)			
European Agreement on International Carriage of Dangerous Goods by Road (ADP) (30/09/1957)		*	
Agreement on the International Carriage of Perishable Foodstuffs and Equipment (ATP) (01/09/1970)		*	X
Convention on Civil Aviation (Chicago Convention)	X	X	X

NOTE: 1- Kyrgyzstan; 2- Tajikistan; 3- Uzbekistan

As of today Tajikistan has finished preparatory procedures to access international Conventions and Agreements marked in a table as *

III. Goals and Objectives of Creating Transport-logistics Centers in Uzbekistan, Kyrgyzstan and Tajikistan

The goal of creating a network of transport-logistics centers in Central Asia is to ensure the efficient movement of goods inside and outside the region through optimal combination and placement of transport infrastructure elements and warehousing terminals along with creating best conditions to render a set of transport-logistics services according to modern standards.

Main objectives of creating a network of transport-logistics centers in Central Asia are to:

- create conditions for economic development of certain territories within the countries of a region;
- attract internal and external investments to modernize the existing and build new manufacturing transport terminals to accumulate and distribute the flow of materials for supplying the operating manufacturing facilities, and move finished goods;
- create a network of interrelated warehousing terminals to accumulate and distribute materials and finished goods;
- optimize the location of transport infrastructure next to warehousing terminals, main transport knots and along international transport communications;
- create conditions to render services for continuous serving of transit cargo and processing of goods directed inside the country and those in transit through TLC territory;
- create conditions to develop accompanying services associated with serving international cargo flows;
- create conditions to optimize relations among transport-logistics centers inside the country and the region, and also to integrate them with international transport-logistics network;
- ensure minimized costs in storage, transportation and processing of cargo flows in time to reduce the ultimate price of goods and increase their competitiveness on the market;
- open opportunities to form new work places in the area of TLC operation and the region as a whole;
- create conditions to apply unified international cargo-transport documents, standards, technologies and align transport and customs legislation with international law;
- simplify customs and border crossing procedures by applying “one border – one window” principle;
- create conditions to develop inter-modal and multimodal transportations to deliver foreign trade commodities to remote countries and markets;
- ensure the growth of financial revenues to the budget and increase the role of transport infrastructure in national economy and GDP;
- increase transport potential of countries in the region.

IV. Specialization and Types of Transport-logistics Centers

Research shows that up till now the countries of the region looked at TLC establishment through a prism of forming a simple network of specialized warehouses for temporary and seasonal storage and distribution of certain types of cargo mainly for agriculture and foodstuffs, mineral fertilizers and energy resources. In the result each country formed from 4 to 10 large warehousing facilities (10 in Uzbekistan, 6 in Tajikistan and 4 in Kyrgyzstan) to address the abovementioned objectives.

In Uzbekistan such facilities were located near such cities as: Tashkent, Ferghana, Andizhan, Gulistan, Bukhara, Karshi, Samarqand, Termez, Kungrad, Urgench.

In Tajikistan similar facilities functioned in such cities as: Dushanbe, Khudjant, Ura-tube, Kurgan-tube, Isfara, Tursunzade.

In Kyrgyzstan the main locations of large warehouses were in: Bishkek, Jalalabad, Naryn and Osh.

During a long time these facilities specialized in insignificant processing of agricultural products and simple storage of foodstuffs.

Due to privatization of warehousing facilities and foreign investments in the form of technological equipment many of the warehousing facilities started to adapt to new requirements and reach for conditions to be able to process the increasing flow of cargo firstly inside the region.

Due to restructuring of such facilities to the needs of large manufacturing sites whose products were intended for exports (in Uzbekistan and Tajikistan) or which were used to store imported cargo (in Kyrgyzstan) the additional new warehousing facilities with access to rail and motorways appeared.

In the result during a short period of time more than 25 cargo warehouses with access railways to process various volume containers and over 20 specialized terminals to store, sort and ship cotton fiber appeared in Uzbekistan. Same situation emerged in neighboring countries.

Warehousing facilities formed by the beginning of 2006 did not meet modern requirements. And starting 2006 large warehouses were partially equipped with modern loading-unloading, packaging and other technical means and hardware for technological operations.

After partial equipment provision these facilities started to partially perform certain TLC functions and in principle they can be equated to 2PL providers (Second Party Logistics – a system allowing to render a range of traditional transportation and warehousing services).

For instance “Bukhara Trans Terminal” company located in Bukhara oblast (on Uzbekistan-Turkmenistan border) is already being used today to store and distribute various cargo with ever increasing volume.

Today many export oriented manufacturing companies successfully operate in Central Asia. Increased volumes of their products dictate the transfer of local warehousing terminals to perform a range of operations in accordance with international standards.

In the region it is possible to project a certain commodity group at 90%. We think that it is practical to specialize TLC development taking into account the specifics and range of products (cargo) characteristic for the given region.

The following logistics structure is characteristic for the researched countries:

- Consumer goods logistics (for all countries of the region);
- Foodstuffs logistics (for all countries of the region);
- Agricultural products logistics (for Tajikistan and Uzbekistan);
- Cotton logistics (for Uzbekistan and Tajikistan);
- Accumulation and distribution systems logistics (for all countries of the region);
- Information logistics (for all countries of the region);
- Transport logistics (for all countries of the region);
- Industrial logistics (for all countries of the region).

TLCs required in Central Asia should correspond to conditions for storage, processing and quick distribution of the following groups of export-import commodities given the needs of their sales markets:

- Cotton commodities (cotton-fiber, yarn, lint, textiles, etc.);
- Consumer goods;
- Agricultural commodities (melons and gourds, vegetables, fruits, canned goods, dried fruits, perishables, etc.);
- Foodstuffs;
- Grain products;
- Construction materials;
- Ferrous and nonferrous metals;
- Bulked cargoes;
- Technological products (various purpose machines and mechanisms, equipment);
- Containers;
- Fuel and energy products;
- Chemical commodities and mineral fertilizers;
- Oversized and heavy cargo.

Warehousing terminals existing today in the countries at best can be specialized mainly to process, store and distribute cotton, agricultural, grain, construction and chemical products, as well as consumer goods. However given their technical capacities and equipment they do not meet modern requirements and are also located in non-systemic way without mutual links, and sometimes without a link to transport and information communications networks, they have different capacities and are used only for temporary storage. Frequently due to lack of TLC the same cargo is placed in small volumes in several warehouses, and because of this it is impossible to ensure the integrity of the logistics supply chain with a set of transport technological, customs and accompanying services at one spot, all of which could have been rendered on TLC's territory.

According to projections the logistics centers in the countries researched will be at least 30% more profitable than same centers in European Union. This assumption is based on the fact that in EU such TLC repay costs even without an income from customs processing. There are not customs borders among EU members which allows to minimize the volume of customs operations inside the network of Western Europe logistics centers and all incomes are mainly generated from loading and warehousing operations, land or premises, buildings lease of other accompanying services.

The most optimal TLC for Central Asia region is the TLC with a combination of terminals and warehousing facilities to render logistics services for accumulation, storage and distribution of various cargoes.

Creation of such type TLC is especially actual for all countries of the given region, since it doesn't require big investments, development of a large area and there is no need in building new transport knots and communications.

V. Existing problems that hinder the creation of transport-logistics facilities in Uzbekistan, Kyrgyzstan and Tajikistan

In Uzbekistan, Kyrgyzstan and Tajikistan in principle it is possible to quickly modernize the existing network of warehousing facilities and transport parks into transport-logistics facilities. However they should be formed simultaneously and function in the interlinked mode. Unfortunately there are a number of problems that hinder the abovementioned. They include:

- Regulation and simplification of customs and technological procedures when cargo flows cross the border;
- Unification of standards, rules, tariffs, requirements and technology and means of transport requirements;
- Acknowledgement of international agreements' priority;
- Significant investment in the development of transport infrastructure related to material and information flows management;
- Liberalization of transit procedures when crossing the borders of market participants;
- Agreement on the direction of international transport corridors for efficient transport operations and cargo handling equipment productiveness;
- Development of transport and logistics services;
- Application of international rules, norms and standards obligatory for the users of international transport and logistics system;
- Application of unified international goods and transport documents and forms in practical operations of national transport, freight forwarding, warehousing, logistics and insurance companies, consignors and consignees.

In the countries researched the Government, ministries and agencies, and also private sector are working to eliminate the abovementioned problems and difficulties. In particular the Governments of this countries reached an understanding on coordinated creation of modern transport-logistics centers in border territories to increase the efficiency of intra-regional trade. Chambers of commerce of these countries and small and medium enterprises within their structure are also interested in expedited processing of their foreign trade cargoes through such centers. According to our survey results and recommendations of a number of international, regional and country seminars and round table discussions the increased public-private partnership will create real basis to determine the required quantity and dislocation of TLCs to develop transport-logistics services in the region.

VI. Determining the Quantity and Most Convenient Geographical Locations for Transport-logistics Centers in the Countries Concerned

Determination of the required quantity and geographical locations of TLCs was based on our survey results and evaluation of foreign countries' experience and analysis of previously conducted studies.

International experience in designing and building TLCs shows that the main point is to account for patterns in traffic itinerary changes, economic trends in reforming certain territories and impact of cross-border transit trade volumes.

In principle, in the region concerned the above peculiarities were also the basis for designing and building large warehouses and transshipment facilities even in the planning economy period. However warehouses and facilities that emerged at that time satisfied the requirements of that period and were not designed to serve export, import and transit cargo traffic of today.

Studies show that currently and in the nearest future the main commodities in the region's countries can be divided as follows by directions:

From Uzbekistan:

1. In a direction towards the Persian Gulf to such ports as Bender - Abbas, Bandar - Khomeini (Iran), Karachi (Pakistan), Mersin, Istanbul, Hala (Turkey) the following prevails:

- exports: cotton, textile, energy, construction materials and rolled metal in containers, on pallets, in one-piece packing and in bags by railway and motor transport;
- imports: foodstuffs, home appliances and technological cargoes in containers, on pallets, in one-piece packing and in bags by railway and motor transport;

2. In a direction towards China and Southeast Asia through Chinese ports such as Ljan Jung Ganges and Shanghai the following prevails:

- exports: cotton, textile, energy, construction and chemical cargoes in containers, on pallets, in one-piece packing and in bags by railway and motor transport;
- imports: foodstuffs, home appliances and technological cargoes in containers, on pallets, in one-piece packing and in bags by railway and motor transport;

3. In a direction towards Kazakhstan, Russia and the EU countries:

- exports: cotton, textile, agricultural, energy, construction materials and mineral fertilizers in containers, on pallets, in one-piece packing and in bags by railway and motor transport;
- imports: foodstuffs, grain, home appliances, raw materials and technological cargoes in containers, in one-piece packing and in bags by railway and motor transport;

From Tajikistan

1. Through Uzbekistan in a direction towards the Persian Gulf to such ports as Bender - Abbas, Bender - Khomeini (Iran), Karachi (Pakistan), Mersin, Istanbul, Hala (Turkey) the following prevails:

- exports: cotton, textile, chemical cargoes in containers, on pallets, in one-piece packing and in bags by railway and motor transport;
- imports: foodstuffs, home appliances and technological cargoes in containers, in one-piece packing and in bags by railway and motor transport;

2. In a direction towards Afghanistan for exports: cotton, textile, chemical cargoes on pallets, in one-piece packing and in bags by motor transport and river transport (through the river Panj)

3. In a direction from China for imports: consumer goods, technological equipment, spare parts and mechanisms, foodstuffs cargoes.

4. Through Uzbekistan in a direction towards Kazakhstan, Russia and EU countries:

- exports: cotton, textile, agricultural, chemical cargoes and rolled aluminum in containers, on pallets, in one-piece packing and in bags by railway and motor transport;
- imports: foodstuffs, grain, home appliances, raw materials and technological cargoes in containers, in one-piece packing and in bags by railway and motor transport;

From Kyrgyzstan:

In the overall volume of Kyrgyz export-import goods turnover the main trade directions are represented by the following routes:

- to Russian federation through Kazakhstan and Uzbekistan;
- to Kazakhstan through own border and through Uzbekistan;
- to Europe through Uzbekistan and Kazakhstan;
- to People’s Republic of China.

Kyrgyzstan through the abovementioned routes exports to foreign partner-countries textile products, precious metals and partially agricultural products, and imports foodstuffs, construction materials, home appliances, textile products, energy commodities, machines and mechanisms.

Given the abovementioned distribution of traffic we think that it is more beneficial to located TLCs in the region concerned in places indicated in Table 2 linking it to the territory of each country in the region. Data in Table 2 derived from analysis of traffic observed in all directions of foreign trade commodities movement among the countries in the region and with foreign countries.

**Quantity and Location of Transport-logistics Centers
in Uzbekistan, Kyrgyzstan and Tajikistan**

Table 2

Country	TLC link zone	Number of TLCs	TLC location
Uzbekistan	Internal	5	Suburban territory of Tashkent – “Tashkent”, Samarqand region – “Samarqand”, suburban territory of Nukus city (Republic Karakalpakistan) – “Nukus”, suburban territory of Kokand – “Kokand”, Navoi (hub in the airport) – “Navoi”
	Frontier	4	Surkhandarya region – “Termez”, Bukhara region – “Alat”, Tashkent region – “Keles”, Andijan region – “Do’stlik”
Tajikistan	Internal	3	Suburban territory of Dushanbe – “Dushanbe”, and city of Khudjant – “Khudjant”, Kurgan Tyube – “Kurgan Tyube”
	Frontier	6	“Pyanj”, “Dusti”, “Murghab”, “Jirghital”, “Patar”, “Horog”

Kyrgyzstan	Internal	1	Suburban territory of Balykchi city – “Balykchi”
	Frontier	4	Suburban territory of Bishkek – “Bishkek”, and Osh – “Osh”, Kara Suu – “Kara Suu”, Djalal Abad – “Djalal Abad”

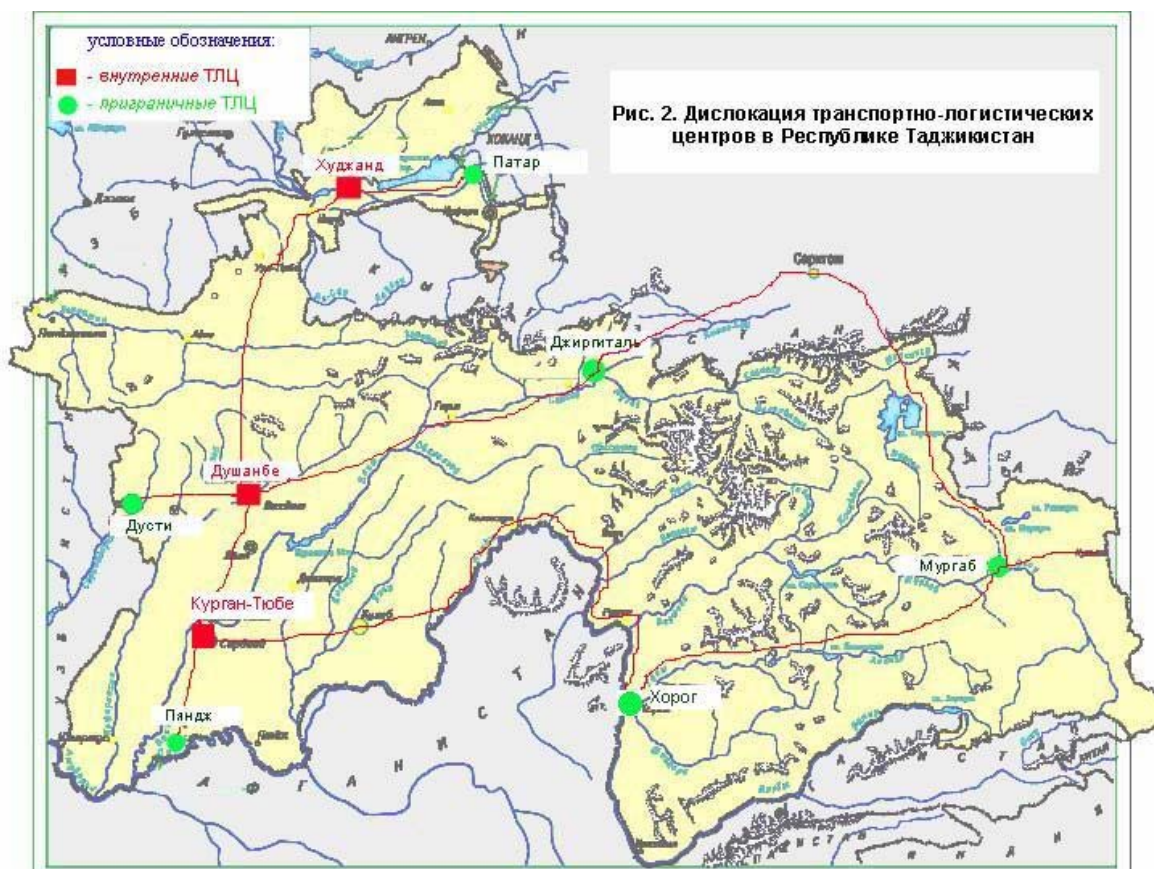
In our opinion, internal TLC should be aimed to serve traffic not only inside the country, but also external freight traffics between the countries of the region and with other countries.

Frontier TLC will mainly accept and process international traffic following in/from the countries of the region, as well as other countries, and transit traffic, and can also be involved in servicing internal requirements.

VII. Dislocation Scheme for Transport-logistics Centers in the Region Concerned

Figures 1, 2 and 3 show location schemes for internal and frontier TLC in the countries with a link to main international transport corridors crossing the territory of these countries.





VIII. Suggested Type of Transport-logistics Centers and its Link to Transport Communications

TLC is the main part in logistics supply chain which performs a set of technological operations to process cargoes, transport-forwarding services, maintenance of vehicles and containers, and clearance and accompanying services (information, financial, insurance and etc.).

Given the range of goods in general cargo flow frontier TLCs in the region concerned should be universal. This would allow for more efficient services.

Configuration of such TLCs should be designed with longitudinal, Γ-shaped and T-shaped lay-out for compact arrangement of technological facilities for cargo processing, premises for warehousing and storage of cargoes with various durations, access roads to service cargoes arriving by motor and railway transport.

TLC infrastructure facilities for receiving and departing cargoes should be located in a manner allowing to simultaneously perform a set of services to accept and unload arriving cargoes, and also load and depart cargoes without handicaps and with minimum quantity of cargo handling and reshipment facilities. There should be a separate area to place empty and loaded containers with their convenient movement inside TLC.

Warehouse should be adapted to accept and store various kinds of cargoes to ensure the preservation of the quality of goods as original.

TLC should ensure optimization of operations associated with receiving, processing, storing and departing cargoes, with corresponding registration of procedures and coordination with sales and procurement services, and also ensure their timely distribution by selling spots.

When designing a TLC it is necessary to take into account the following:

- allocation of specialized areas for storage and processing of cargoes that facilitate reduced costs and improved cargo processing;
- use of universal equipment for processing various cargoes with a purpose of their uninterrupted work;
- minimized operational zone of cargo handling facilities and internal transport movement paths;
- efficient area use when placing technological equipment to ensure maximum capacity;
- ensuring all-the-year-round continuous TLC operation;

On TLC's territory the specialized areas and premises should take into account compliance with requirements for storage and safety.

TLC should include:

- cotton terminal where cotton cargoes can be stored in closed premises or on open areas under a canopy in compliance with fire safety requirements and other conditions;
- terminal for construction materials, different kinds for which should be located in a separate zone with a breakdown by kinds: packed in various containers or on pallets, in bags, bulk, loose, etc.;
- terminal for finished foodstuffs;
- terminal for grain cargoes with the corresponding equipment and reservoirs;

- terminal for perishable products with refrigerating chambers;
- terminal for accommodation and storage of machines, mechanisms and different technological equipments;
- terminal for storage and processing of chemical cargoes, mineral fertilizers;
- terminal for processing and storage of oil and liquefied gas.

In the countries concerned modern TLCs can be established at those existing terminals where there is a certain part of the abovementioned and a territory to build the missing part of terminals.

One of such examples is the establishment of a TLC in Uzbek-Afghan border zone using the territory and capacity of the Termez river port (TRP).

River port territory is 25 hectares, it accommodates 7 indoor warehouses for over 10000 tons of closed storage of foreign trade cargoes, and also 7 open warehouse platforms for 100,000 tons of open storage.

TRP material and technical basis allows to:

- reship, store and transport 20 dry cargo wagons per day;
- accept 15 oil cisterns for processing;
- accept over 600 dry cargo wagons (3,600 tons) or 150 oil cisterns (9,000 ton) a month for processing;
- transport up to 15,000 tons of dry cargo and 9,000 tons of oil products by barges per month.

There is a mechanized container terminal for an unloading 20F and 40F containers with a capacity of one-time storage of 1,000 containers.

Creation of a TLC in a given frontier zone is convenient because of the following positive factors:

- potential for restructuring for new construction;
- convenient transport communication with internal road and railway network, international corridors towards Afghanistan with an access to ports of Iran and Pakistan, with all countries of the Central Asia with an alternative access to ports of Iran and Turkey, and also to ports of China, international corridor E-40 with an access to communications in a direction towards the European Union;
- close location of Termez airport and river communications of Uzbekistan, Turkmenistan, Tajikistan and Afghanistan;
- availability of large territory reserve to expand the existing terminal to a necessary size with a view to build all missing terminals.

The second example of similar conditions is the transport-terminal unit located near to the city of Keles near Tashkent. Currently there is a terminal-warehousing base operating here with the following parameters:

The area occupied is 6 ha, the territory accommodates:

- near railway reinforced concrete warehouse of 3,240 sq.m;
- 4 module near railway warehouse – 2,880 sq.m;
- under a canopy warehouses with total area of 2,592 sq.m;
- platforms for open storage of materials with total area of 6,140 sq.m;

- unloading stages with a canopy with total area of 900 sq.m;
- 2 storied office building with total area of 288 sq.m;
- subsidiary premises.

Terminal-warehousing base has all necessary communications available for operation. Cargo handling mechanisms are available.

Warehouse are equipped with necessary warehousing equipment (racks, pallets, carriages) providing reliable and qualitative storage of goods, and can simultaneously contain up to 120 carload norms of a cargo.

Besides that warehouses are equipped with additional gates which allows for parallel cargo handling works and to significantly reduce the time works.

Premises in average are divided into 700 square meters and enable separate storage of cargoes by commodity groups.

The territory of the base, if needed, allows to develop new platforms and warehousing premises.

4-8 km from this terminal-warehousing base there are 4 other warehouse bases almost with identical capacities, all of which can be incorporated under one large TLC.

Creation of a TLC in the given frontier zone would open additional opportunities to increase traffic and reshipment of export-import cargoes not only of Uzbekistan, but also its southern neighbors in a direction towards Kazakhstan, Russia and EU countries.

In principal terminal-warehousing bases in frontier zones of the countries concerned, where in our opinion it is expedient to deploy TLCs, also have conditions for their adaptation into modern logistical centers.

This conclusion is competent because all frontier and internal TLC locations zones in the countries of the region will have an opportunity for successful connection with the international transport corridors in any direction.

Figures 4 and 5 illustrate the examples of the general view of the main place for dislocation of infrastructure facilities inside a transport-logistics complex, which are recommended for design on the territory of the countries researched.

General view of compact TLC with multi-layer warehouse and access ways in internal zone



Figure 4

General view of a TLC with access railways and roads to accumulate and distribute various types of commodities in border area

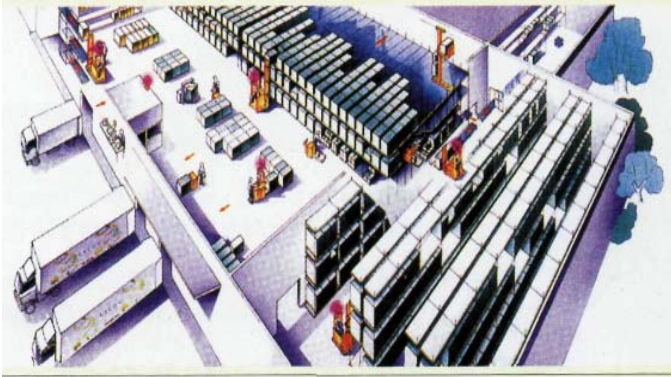


Figure 5

IX. Prospective Services of Transport-logistics Centers in Region's Countries Concerned

Uzbekistan, Kyrgyzstan and Tajikistan are geographically isolated from large seaports and markets. This leads to a necessity of applying Inter-modal and multimodal technologies when delivering foreign trade cargoes, which is impossible without the development of transport logistics systems in these countries.

Hence, TLCs to be created in the future in the countries of the given region should perform a function of inter-modal transport logistics facility (ITLF). Modern ITLF render a standard range, which in practice are understood as cargo handling works, containerization, lotting, palliating, packaging, sorting and sorting out, marking, certification and documenting of cargoes and other accompanying services for uninterrupted delivery of the international cargoes by inter-modal and multimodal means.

Use of inter-modal and multimodal technologies implies the availability of conditions to attract various types of wagons and railway transportation means, large size motor trailers and semi-trailers, technological equipments and means for handling works, and also a sorting-accumulation facility to process and store a variety of goods.

In view of this circumstance the assumed TLC should carry out ITLF function with simultaneous services of both the logistics and distribution center.

Logistics services include a set of services associated with cargo accumulation and distribution among various suppliers and wholesale buyers, its short-term consolidation in TLC and subsequent delivery distributor's warehouse.

This set of logistics services includes:

- coordination of all processes to organize cargo traffic from shipment point to a point of accumulation, warehousing logistics and logistics of goods distribution to sales spots.
- integration of all functions of managing goods accumulation, warehousing, storage and distribution from the time of shipment and up to controlling the whole logistics supply chain;
- quick response to market changes and demands from buyers of goods and services.

- management of logistics services process, while considering the whole supply chain as one integral system;
- implementation of all types of services as the set of interrelated operations;
- providing for optimal performance of the abovementioned functions within a unified organizational structure.

These ITLF functions would be possible to implement if TLC's operation is based on the following principles:

- planning the process of accumulation of cargoes from various points of delivery;
- planning of timeframes for receiving and processing applications on the delivery of concrete types of cargoes;
- scheduling various terminal facilities' operation for timely acceptance, processing and storage of arriving traffic;
- planning the processes of delivering various types of transport to implement the schedule for shipment and distribution of goods by distribution points;
- scheduling the operation of TLC's structural subdivisions and optimizing their cooperation with facilities rendering accompanying services;
- planning post-distribution operations.

This list of services is a compulsory minimum for normal operation of a TLC as the inter-regional level ITLF.

Any deviation from integrated performance of these functions results in non-observed schedule for interaction of a certain TLC with other TLCs located inside region and beyond.

X. Overall Management Structure in Transport-Logistics Facility

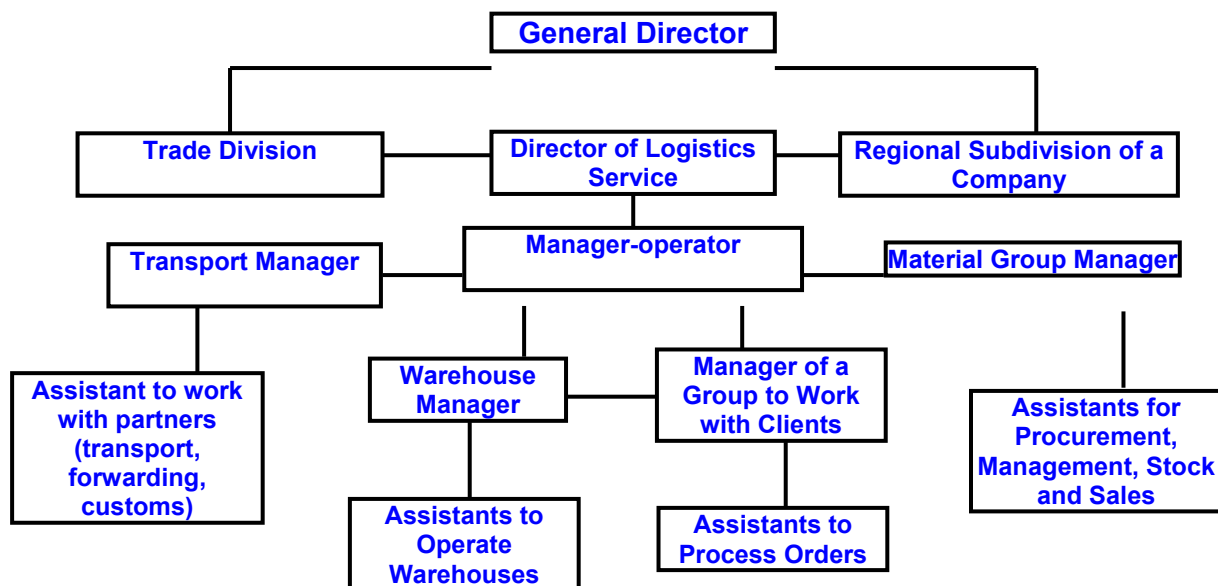
As mentioned in previous sections there are many firms and companies operating the transport-logistics facilities which render different services related to processing of various commodities arriving on different modes of transport at different times of the day and subject to accumulation, storage and distribution by further directions at local, regional and external markets.

Modern scientific methods of management adopted in leading foreign transport-logistics facilities in Singapore, Shanghai, Dubai, Rotterdam, Antwerp, Hamburg and other large transport-logistics nodes of the world demonstrate the efficiency of multi-profile organization of management to accomplish logistics goals.

Given phased transition of PL-operators from 2PL system to a system of services at a level of 3PL and 4PL operators on the territories of the countries researched we would recommend the following overall management structure at the created transport-logistics centers (Figure 6).

Figure 6.

Structural Scheme of Management in TLC



This structural scheme of management is the general structure with the lowest staff and can easily expand if TLC services expand in the future. One should note that the existing warehouses and terminals in the countries of a region the proposed management scheme is not applied.

However to introduce such a scheme it is sufficient to arrange the retraining for existing staff to give them management skills in practical logistics. Studying the experience of practical logistics in Russia, Baltic countries and South-East Asia indicated the acceptability of the recommended management scheme in newly established transport-logistics centers in CAREC countries, including the countries researched in Central Asia.

XI. General Findings of the Study and Expected Effect from Creating Transport-logistics Facilities in Uzbekistan, Kyrgyzstan and Tajikistan

Creation of transport-logistics facilities in Uzbekistan, Kyrgyzstan and Tajikistan, if abovementioned recommendations are to be implemented, will allow to:

- Ensure full transport-freight forwarding servicing of service consumers with “door to door” cargo delivery;
- Strictly observe deadlines for delivery to destination points;
- Optimize logistics schemes for servicing the clients;
- Minimize the cost of transportations and final price of products;
- Increase the quality of services by all modes of transport and logistics services;
- Ensure sustainable development of transport communications;
- Attract additional cargo flows and increase the efficiency of using country’s transit potential;
- Build economic potential of countries in the region.

The abovementioned findings given the successful implementation of the proposed management methods for transport-logistics operations, modern equipment for newly established TLCs and

application of modern business technologies and standards in transport and logistics services will allow to accomplish the following effect in the operation of transport-logistics firms and economic life of the country:

- Create conditions for parallel development of national economies in the region;
- Improve conditions to expand regional and inter-regional cooperation among business entities and their servicing companies;
- Prevent inefficient expansion of infrastructure in the area of transport-logistics services;
- Stimulate the attraction of foreign investments in the countries of the region;
- Activate the formation of TLC network to service foreign trade cargoes of the countries in the region at the level of modern standards;
- Harmonize national legislations, simplify foreign trade procedures and prevent negative impact, which are sometimes observed in the course of servicing foreign trade cargoes;
- Develop containerization in the countries of the region;
- Create conditions for efficient connection of cargo flows in intermodal transport;
- Introduce bar coding and e-tariffs in the countries of the region;
- Strengthen the role of transport-logistics business in GDP growth and increasing the national economies of CARs.

XII. References

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