4. COMPARISON OF LAND TRANSPORT ROUTES TO SEA PORTS IN THE SOUTH AND THE EAST

In general, criteria for routes comparison include: distance, costs and time of handling at point of origin (loading the transport unit), direct transport cost (by one or more modes of transport), border-crossing or change of transport mode, costs and time (transloading, handling, bogie change, custom inspection time and/or charges, etc.) and finally port handling charges, unloading or discharging at the sea port destination.

For comprehensive analysis the information on costs and time elements should be as detailed as possible. Unfortunately such information was not available. Therefore, the analysis is limited to distance, time, and partly to cost comparison for direct transport services only.

4.1 Routes to sea ports in the Islamic Republic of Iran and Pakistan

Land transport services for Central Asia, in the corridor to the South, are provided at present to and from ports: Bandar Emam, Bandar Abbas, Chah Bahar (Islamic Republic of Iran) and Karachi (Pakistan). While road and road-cum-rail land transport services are rendered from the Iranian ports directly to Turkmenistan, from the port of Karachi (Pakistan) such services are provided only via the Islamic Republic of Iran, Afghanistan or China.

The routes as identified in the previous chapter are:

From the Islamic Republic of Iran:

A. Rail-cum-road, road-cum-rail-cum-road transport:

From the Port of Bandar Emam Khomeini via Tehran to Gorgan and Meshad by rail and onwards to border-crossings with Turkmenistan by road transport.
2. From the Port of Bandar Abbas to Tezerj by road and onwards via Tehran to Meshad by rail, and then by road transport to border-crossings with Turkmenistan.

However, by end of 1996 the Tedzen-Seraks-Meshad and Tezerj-Bandar Abbas (opened in 1995) new railway lines will provide direct railway services from the port of Bandar Abbas to Central Asia.

B. Road transport:

Port of Bandar Abbas-Sirjan-Kerman-Gonabad-(or Yazd-Tabas)-Meshad and via four border-crossing points to Turkmenistan (see distances in table attached).

ROAD DISTANCES BETWEEN BORDER-CROSSINGS POINTS WITH TURKMENISTAN AND SEA PORTS OF BANDAR ABBAS AND Chah Bahar IN THE ISLAMIC REPUBLIC OF IRAN

1.	Loftabad-Meshad-Zahedan-Chah Bahar	1,925 km
2.	Badjigiran-Meshad-Zahedan-Chah Bahar	1,858 km
3.	Seraks-Meshad-Zahedan-Chah Bahar	1,832 km
4.	Loftabad-Meshad-Gonabad-Ravar-Kerman-Sirjan-Bandar Abbas	1,562 km
5.	Badjigiran-Meshad-Gonabad-Ravar-Kerman-Sirjan-Bandar Abbas	1,495 km
6.	Seraks-Meshad-Gonabad-Ravar-Kerman-Sirjan Bandar Abbas	1,469 km
7.	Loftabad-Meshad-Tabas-Yazd-Anar-Sirjan Bandar Abbas	1,938 km
8.	Badjigiran-Meshad-Tabas-Yazd-Anar-Sirjan Bandar Abbas	1,871 km
9.	Seraks-Meshad-Tabas-Yazd-Anar-Sirjan Bandar Abbas	1,845 km
10.	Incheborum-Minudasht-Meshad-Zahedan-Chah Bahar	2,190 km
11.	Incheborum-Azadshahr-Shahrood-Tehran-Anar-Bandar Abbas	1,910 km

From the Bandar Abbas port the road distances, via the Islamic Republic of Iran, to destinations in Central Asia are:

Ashgabat (Turkmenistan)	1,695 km
Tashkent (Uzbekistan)	3,004 km
Almaty (Kazakhstan)	3,993 km
Bishkek (Kyrgyzstan)	3,713 km

II.   From Pakistan

A.   Rail-cum-road transport:

1. From Karachi port (via the Islamic Republic of Iran) to Quetta-Kohitaftan-Zahedan by rail, onwards by road to Meshad and via border-crossings to Turkmenistan, further by road or rail transport to destinations in Central Asia.
2. From Karachi to Chaman by rail then (via Afghanistan) Kandahar-Herat-Kushka by road to Turkmenistan or by rail to Peshawar, and then by road from Kabul to Termez (Uzbekistan).
3. From Karachi to Rawalpindi by rail then via Karakoram Highway to China and Almaty (Kazakhstan) by road and onwards to a final destination in Central Asia by road or rail transport.

B.   Direct road transport services from Central Asia to the sea ports in the South are provided by the following shortest routes:

1. From Ashgabat (Turkmenistan) to ports in Islamic Republic of Iran, via Badjigiran- Meshad-Gonabad-Ravar-Kerman-Sirjan to Bandar Abbas (1,535 km) and Chah Bahar (1,858 km);
2. From Tashkent (Uzbekistan) to Karachi port in Pakistan via Kabul-Kandahar (Afghanistan), total distance 2,812 km;
3. From Almaty (Kazakhstan) to Karachi port in Pakistan, via Karakoram Highway (China) 3,708 km, or via Kabul-Kandahar (Afghanistan) 3,800 km.

4. From Bishkek (Kyrgyzstan) to Karachi port in Pakistan via Karakoram Highway (China) 3,434 km, or via Kushka (Turkmenistan)-Herat- Kandahar (Afghanistan)-Chaman-Quetta-Karachi 3,655 km.

Road distances from the port of Karachi (Pakistan) to major destinations in Central Asia are reflected in the table below:

From/To	Distance (Km)
Via Afghanistan	
1 Karachi-Quetta-Chaman-Kandahar-Herat to	1,658
- Kushka (Turkmenistan)	2,316
- Ashgabat (Turkmenistan)	2,946
- Tashkent (Uzbekistan)	3,655
- Bishkek (Kyrgyzstan)	3,935
- Almaty (Kazakhstan)	
2. Karachi-Quetta-Chaman-Kandahar-Kabul to	1,968
- Termez (Uzbekistan)	2,812
- Tashkent (Uzbekistan)	3,800
- Almaty (Kazakhstan)	
3. Karachi-Peshawar-Jalalabad-Kabul to	2,318
- Termez (Uzbekistan)	3,162
- Tashkent (Uzbekistan)	3,871
- Bishkek (Kyrgyzstan)	4,151
- Almaty (Kazakhstan)	
Via China	
4. Karachi-Lahore-Rawalpindi-Hassanabdal-Gilgit-Kunjerab-Kashgar-Torogart to	3,434
- Bishkek (Kyrgyzstan)	3,708
- Almaty (Kazakhstan)	3,770
- Dushanbe (Tajikistan)	
Via Islamic Republic of Iran	
5. Karachi-Quetta-Kohitaftan-Zahedan-Badjigiran to	2,690
- Ashgabat (Turkmenistan)	3,999
- Tashkent (Uzbekistan)	4,988
- Almaty (Kazakhstan)	4,708
- Bishkek (Kyrgyzstan)	

From Turkmenistan and Uzbekistan, the most promising road transport links to the sea port in the South are via Afghanistan and Islamic Republic of Iran to Karachi port. Road transport operators are very much in favour of the Karachi-Chaman-Kushka route via Afghanistan as the best and shortest, but due to the present situation in Afghanistan this route is not in use.

From Kazakhstan, Kyrgyzstan and Tajikistan the shorters road links to Karachi are via China, along the Karakoram Highway.

Major transport flows from Central Asia follow nowadays the routes from Turkmenistan to the ports of Bandar Abbas and Chah Bahar in the Islamic Republic of Iran or via the Islamic Republic of Iran to the port of Karachi in Pakistan. The latter however involves longer distances than via Afghanistan. Once the situation is normalized land transport routes through Afghanistan will likely provide more attractive options.

Rail-cum-road-cum-rail transport services take place on routes: Karachi-Kohitaftan-Zahedan (by Pakistan railways)-Zahedan-Badjigiran-Ashgabat (by road; Islamic Republic of Iran)-Ashgabat-Tashkent (by railways). The total transport time from Karachi to Tashkent is reportedly 42 days. The average Karachi-Zahedan railway transit time is about 10 days Over a distance of 1,435 km between Karachi and Zahedan the average speed of railway transport at present is 5.9 km per hour.

Pakistan railways freight rates from Karachi to Kohitaftan, equals on average to US$ 48 per one ton of freight. Railway services are direct from Karachi to Zahedan railway station in the Islamic Republic of Iran. Rail freight in Pakistan is prepaid only to Kohitaftan, while for the section Kohitaftan-Zahedan payment is done in Iranian currency in Zahedan.

Average travel time by road of a truck and trailer carrying a container in the Islamic Republic of Iran over a distance of 1,800 km is five days, which gives an average speed figure 15 km per hour.

The distance, time, and cost figures by routes are as follows:

Karachi-Zahedan: 1,435 km by rail, transit time 10 days, cost US$ 48 per ton, or US$ 0.0348 per ntkm.
Zahedan-Ashgabat: 1,255 km by road, transit time 4 days, cost US$ 0.056 per ntkm.
Ashgabat-Tashkent: 1,309 km by rail, transit time 5 days.

From the total delivery time of 42 days the transport transit time accounts for 19 days (or 45 per cent) the remaining 23 days (55 per cent) make the handling, change of transport mode and waiting time, thus indicating a tremendous potential to improve the services.

Road transport services at present prove shorter delivery time over the same distance such as: from ports in the Islamic Republic of Iran to Ashgabat in 5 days; to Tashkent in 8 days: from Karachi to Tashkent the shortest road transport delivery time is also 8 days. These days transport operators make their selections of routes on security and safety of load and crews rather than distance or costs. The routes are from Karachi via the Islamic Republic of Iran, and from Iranian ports to Turkmenistan and onwards for Central Asian destinations, or from the Iranian ports to Turkmenistan and similarly onwards.

On the cost base the railway transport services are cheaper (US$ 0.0348 per ntkm compared with US$ 0.043 per ntkm for road transport) but the selection of modes and routes used to depend on quantities, kind of commodities and reliability of delivery.

The road transport options to sea ports in the Islamic Republic of Iran and Pakistan are as follows:

From Turkmenistan (Askhabad) to:

1. Bandar Abbas port	1,839 km
2. Chah Bahar port	1,898 km
3. Karachi port:	
a) via Afghanistan	2,316 km
b) via Islamic Republic of Iran	2,690 km

From Uzbekistan (Tashkent) to:

1. Karachi port	
a) via Chaman-Kabul (Afghanistan)	2,812 km
b) via Chaman-Herat (Afghanistan)	2,946 km
2. Bandar Abbas port	3,000 km
3. Chah Bahar port	3,232 km
4. Karachi via Islamic Republic of Iran	3,999 km

From Kazakhstan (Almaty) to:

Karachi port	
a) via Karakoram Highway	3,708 km
b) via Afghanistan	3,800 km
2. Bandar Abbas port	3,993 km
3. Chah Bahar port	4,100 km
4. Karachi port via Islamic Republic of Iran	4,988 km

The delivery time by road is usually in close relation with distances, and the shortest reported to reach the ports is 5 days from Ashgabat to the ports in the Islamic Republic of Iran, 6 days to Karachi port via Afghanistan, and 7 days to Karachi port via the Islamic Republic of Iran. Road links from Karachi via Karakoram highway are giving the transport option north-east to Kyrgyzstan, Tajikistan, Uzbekistan, Kazakhstan and western China.

From Karachi to:		Distance
Urumqi (Xinjiang, west China province)		4,292 km
Bishkek (Kyrgyzstan)	- via Haryn	3,434 km
	- via Osh	3,690 km
Almaty (Kazakhstan)		3,708 km
Dushanbe (Tajikistan)		3,770 km
Tashkent (Uzbekistan)		3,610 km

The difference in distance using the two routes is the following:

From Karachi to:	via Islamic Republic of Iran	via Karakoram Highway	Difference in distance km
- Tashkent (Uzbekistan)	3,999	3,610	389
- Almaty (Kazakhstan)	4,988	3,708	1,280
- Bishkek (Kyrgyzstan)	4,708	3,434	1,274
- Dushanbe (Tajikistan)	5,075	3,770	1,305

The Karakoram Highway route is shorter, however due to difficult road conditions, particularly in winter, the traffic movement on this route has serious limitations. It is the only road connection from Karachi port to Xinjiang in western province of China.

At present, the existing land transport infrastructure has limitation to be fully utilized.

Although shorter routes exist, due to the present situation in the subregion, transport moves in some cases along longer less economic routes.

4.2 Railway routes to sea ports in Islamic Republic of Iran, Pakistan or China

CAR at present can use combined rail-cum-road transport and/or road transport to the sea ports in the South, however access to sea ports in the East is possible only by rail transport (refer to map enclosed). Long distances and inadequate road infrastructure in the eastern corridor to ports in China gives the dominant position to railways. Since 1992, when the first train crossed the China-Kazakhstan break-of-gauge points at Alatan Shankow-Druzba stations rail transport facilities are provided to move passengers and freight including container transport. Improvement of this line is in progress.

As indicated earlier, new railway options from CAR to sea ports both in the East and South are expected after 1996, when the missing link Tedzen-Seraks (Turkmenistan)-Meshad (Islamic Republic of Iran) is eliminated, and after the completion of missing link to Bandar Abbas port (sections Tezerj-Bandar Abbas) as well as later, when the national railway network in the Islamic Republic of Iran provides an access to the port of Bandar Abbas via a new railway line from (Meshad) Fariman to Bafq. The construction of the new 540 km long railway link in the Islamic Republic of Iran between Kerman and Zahedan will connect the existing rail networks of Islamic Republic of Iran and Pakistan thus providing direct railway transport services to Karachi port. (see new railway constructions envisaged in scenario 3).

When the construction of the (Meshad) Feriman-Bafq new railway line is completed in Islamic Republic of Iran after year 2000 there will be another shorter railway option for Central Asian traffic.

From Almaty the options may be:

A. To the South Almaty-Parahat-Feriman (Meshad): 2.225 km
      (a) Feriman-Tehran-Bandar Emam 1,802 km
      (b) Feriman-Bafq (to be built) 720 km
         Bafq-Bandar Abbas 630 km

The distances are:

1. Almaty-Bandar Emam: 4,027 km
2. Almaty-Bandar Abbas: 3,575 km

With the completion of the missing railway link on the Iranian railway network between Kerman and Zahedan railway access from and to Central Asia, Turkey and Europe is established along the South Asian railway corridor to Karachi and Qasim ports in Pakistan.

B. To the East

Almaty-Druzba-Lianyungang (China) 4,995 km

There is however another potential railway link between Central Asia and Pakistan via Afghanistan, which is a proposed new 800 km line in Afghanistan between Kushka (Turkmenistan) and Chaman (Pakistan) via Kandahar.   With this railway link CAR would have a railway access to the sea ports of Karachi and Qasim.   The distance from Karachi port to Tashkent and Almaty by the new railway link would be about 2,930 and 3,720 km respectively.

Both railway options (to the South and to the East) have a break-of-gauge problem and in comparative analysis for options the time required and cost for the operations at a break-of-gauge point should be taken into consideration.

The actual distance of railway connections as well as the estimated transit, transhipment and total time for railway transport operations are shown in the table:

To	Distance (km)	Total transport time (h)
- Bandar Emam	3,504	106
- Bandar Abbas (via Tehran)	4,122	123
via Fariman-Bafq	3,052	93
(to be constructed at a later stage)		
- Lianyungang Port (China)	5,508	163

The estimated times for efficient services on the railway line, (to the South and to the East) are:

a) For transit time: - maximum permissible freight or container train speed 80
                           - average speed 35 km/h
b) For transhipment: - transhipment of containers and bogie flat cars total 4 hours per train,
                           - for train preparations at border, 2 hours,
                           - total time at border station 6 hours.
c) Total railway transport time T = a+b

Based on the above distance and time estimates access from southern Kazakhstan, Uzbekistan and Turkmenistan to sea ports in the South appears to be more favourable than to the East.

From Almaty the distances and time involved are more competitive for options to the sea ports in the South or in the East.

From Almaty to Bandar Abbas port (Islamic Republic of Iran) the distance, via Tehran, is 4,645 km and total railway transport time takes 139 hours. The option to the sea port of Lianyungang (China) is 4,995 km and total time 148 hours. The difference in both distance and time is not significant. If unified railway tariffs are applied along the whole railway corridor, traffic from Almaty to sea ports in the East or in the South will be attracted by different quality of services and port charges. For more detail figures see data in tables 3.3 and 3.4.

Due to lack of information on railway transport costs and tariffs in the transport corridors the cost comparison of options was not feasible. However, China railways informed that on the Lianyungang-Alatan Shankow railway line the scheduled container trains would travel the distance of 4,134 km in 168 hours (7 days) at a cost of US$ 0.24 for TEU/km, or US$ 0.018 per ntkm.

TABLE 3.3 CENTRAL ASIAN REPUBLICS ACCESS TO SEA PORTS - SOUTH

ROAD TRANSPORT

From/To	Distance (km)	Delivery Time (days)*	Cost* (US$) TEU/km	ntkm
TURKMENISTAN (Ashgabat)				
- Bandar Abbas Port	1,830	5		
- Chah Bahar Port	1,898	5		
- Karachi Port				
a) via Islamic Republic of Iran	2,690	7	0.762	0.056
b) via Afghanistan	2,316	6		
UZBEKISTAN (TASHKENT)				
- Bandar Abbas Port	3,000	8		
- Chah bahar Port	3,232	9		
- Karachi Port				
a) via Afghanistan (Chaman-Herat)	2,946	8		
b) via Afghanistan (Peshawar-Kabul)	3,162	9		
c) via Afghanistan (Chaman-Kabul)	2,812	8		
d) via Islamic Republic of Iran (Quetta-Zahedan)	3,999	11	0.700	0.052
KAZAKHSTAN (ALMATY)				
Bandar Abbas Port	3,993			
- Chah Bahar Port	4,100			
- Karachi Port				
a) via Afghanistan (Chaman-Kabul)	3,800	11		
b) via China (Karakoram Hwy)	3,708	11		
c) via Islamic Republic of Iran (Quetta-Zahedan)	4,988	12	0.581	0.043
CHINA:			0.70	0.052

Time and cost include transport only

<u>Assumption:</u>

1. Commercial speed of road transport (1,800 km in 5 days) = 15 km per hour in Islamic Republic of Iran.'

TABLE 3.4 CENTRAL ASIAN REPUBLICS ACCESS TO SEA PORTS

RAILWAY TRANSPORT

Distance, Time and Cost elements

			Distance in Km	Transit	Time (in hrs) Transhipment	Total Time	Cost(US$) TEU/Km	ntkm
	TURKMENISTAN (SERAKS)							
T 1	Islamic Rep. of Iran	- Bandar Emam Port - Bandar Abbas Port	1,980	57	6	63		
T 2		a) via Tehran	2,552	73	6	79		
T 3		b) via Fariman-Bafq	1,513	43	6	49		
	China	- Lianyungang Port	7,032	200	6	206		
	UZBEKISTAN (TASHKENT)							
U 1	Iran	- Bandar Emam Port - Bandar Abbas Port	3,504	100	6	106		
U 2		a) via Tehran	4,122	117	6	123		
U 3		b) via Fariman-Bafq	3,052	87	6	93		
U 4	China	- Lianyungang Port	5,508	157	6	163		
	KAZAKHSTAN (ALMATY)							
K 1	Iran	- Bandar Emam Port - Bandar Abbas Port	4,027	115	6	121		
K 2		a) via Tehran	4,645	133	6	139		
K 3		b) via Fariman-Bafq *	3,575	102	6	108		
K 4 K 5	China	- Lianyungang Port	4,995	142	6	148		
		a) Lianyungang-Alatan Shankow	4,134	118	6	124		
K 6		b) Druzba-Almaty	861	24	6	30		
	Pakistan: Karachi - Kohitaftan		1,378	39	6	45	0.47	0.0348
	China: ** Lianyungang - Alatan Shankow		4,134	168	6	174	0.24	0.018

* To be built by year 2000

** Present data

Assumptions (freight traffic):

1. Maximum permissible track speed 80 km/hr
2. Schedule speed (average speed and allowance for safe-working and other stopping time)   = 35 km/hr
3. Transhipment of containers at border(s) by gantry crane (average 2 rail per container and 125 TEU per train of 50 bogie flat cars, total 4 hours per train)
4. Train at border for customs procedures etc. Train preparation/breaks testing = 2 hours (The total time at border station   = 6 hours)

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4.3 General remarks

(a)   Access from Central Asian Republics to sea ports in the South is possible at present by road and combined road-cum-rail transport services. Direct railway services will be available to Bandar Abbas and Bandar Emam ports after completion of the railway missing links (Tedzen-Seraks-Meshad and Tezerj-Bandar Abbas) in 1996.

(b)   The distance and time delivery criteria indicate the following best options to sea ports in the South and in the East:

Road Transport Services

From Turkmenistan (Askhabad) to ports of Bandar Abbas, (1,830 km, 5 days and Chah Bahar, (1898 km, 5 days) in Islamic Republic of Iran.
From Uzbekistan (Tashkent) to ports in Islamic Republic of Iran Bandar Abbas (3,000 km, 8 days), Chah Bahar (3,232 km, 9 days) and to port Karachi (Pakistan) via Afghanistan (Herat 2,946 km, 8 days), (Kabul 2,812 km, 9 days).
From Kazakhstan (Almaty) to Karachi port via China (Karakoram Highway) 3,708 km 11 days.

Rail-cum-road-cum-rail services are available from Karachi port via Islamic Republic of Iran to Tashkent (Uzbekistan). The total distance of around 4,000 km is shared by rail (2,744 km) and road (1,255 km) transport. From the total delivery time of 42 days less than a half is for direct transportation and the rest (55%) is spent for transloading, change of transport mode and waiting.

(c)   Railway services from CAR to the sea ports in the East via Druzba (Kazakhstan) Alatan Shankow (China) to port of Lianyungang at present take 7 days for container train services over a distance of 4,134 km at a cost of US$ 1,000 per TEU.

After the completion of the missing railway link Tedzen-Seraks-Meshad, options to use access to sea ports east or south from, say, Almaty (Kazakhstan) will depend on other than distance factors. If trade arrangements dictate the flow of commodities to destinations, east or south, transport of cargo will follow the available routes, but other things being equal, and if railway tariffs are unified, options for sea ports east or south will depend on factors like quality of services, port charges and reliability of delivery.

(d)   Transport flows between CAR and sea ports in the South at present follow the safe and reliable routes even if there is a shorter but unsafe route available. However when the situation in Afghanistan is normalized, better use of existing road transport infrastructure can be expected.

(e)   Overall rough estimation must be followed by thorough economic analysis to compare total costs and benefits of options.

Traffic forecast is one of the key issues for economic and financial justification of investment in land transport infrastructure and future transport operations. Traffic forecast from CAR in the corridors (South and East) does not exist, and reliable data for such exercise can not be provided. There is therefore a need to develop a data base for traffic volume forecast by identified routes to and from the sea ports.

As a result of the above-listed major expected developments to take place by around the year 2000 (subject to timely completion of the construction activities) the operational patterns of land transports are also expected to change substantially.

In the first place there will be a necessity to revise the transport operations along the traditionally used existing routes and take decisions as to whether there have been new opportunities and options created which could make movement of cargo traffic faster and cheaper.

There will be obviously necessary to break some traditional barriers and habits of using the previous routes which, by the time, have been considered working well.

It needs to be kept in mind that in some cases transport of goods has been taking place no matter at what operational cost since the profit margin, due to a huge demand for certain commodities, would balance the losses due to long journeys, time waisted for negotiating the borders, etc..

As it has been already mentioned, marketing of new available railway services would play one of the key roles in the process of picking up and using new routes: railways as well as roads.

The development of transport operations along the new routes is hard to predict at this stage, as reliable figures and predictive indicators on the increase of productivity of the particular sectors of the CAR economies will presumably not be available in a nearest future.

It is expected that they will be available in a few years, when (again presumably) national economies will take off and their industries will growingly demand for transport services.

The modal split between those two modes of transport is even more difficult to predict, for the same reasons. There is however a possibility that road transport, benefiting from improvement of roads or shortening the routes, may remain highly competitive on the land transportation scene for some time, particularly for a shorter distances, servicing border area trade, providing feeder services to railways and so on. Another factor is that there are at present 16 active road and 4 rail border-crossings between CAR and neighbouring countries, which makes the ratio 4:1 in favour of roads. It means that road freight/passenger traffic can move across the borders in many places and will likely continue to do so in the future. There will be presumably still extra capacity of the road network to accommodate growing domestic and international traffic. The standards of major trunk roads will however need to be upgraded to enable road pavements to carry increased axle loads as presently used in international traffic.

The roads which are identified as major linkages in each country from Central Asia to seaports in the South and East need to be brought to an appropriate standard in line with the standards set for the Asian Highway network.

The roads in Islamic Republic of Iran, which are being increasingly used for movement of freight to and from Central Asia to the sea ports in the South, are generally well maintained and have standard which is in upper range of the Asian Highway standards.

Improving road pavements from being able to carry about 6 tons per axle to 11 tons per axle loads (which is a very costly exercise) will by the year 2000 most likely become an issue when discussing the development of international freight transport by road.

Next what are the chances of the cargo containerization by around the year 2000. According to the findings of the study most of the railway infrastructure and its improvements has been designed to carry mainly 20' containers. Do the 40' containers and "high-cube" have the real chance to be also transported in a future?

A strategic development of inland container terminals (ICT) will also need to be considered jointly by CAR, China, Islamic Republic of Iran, and Pakistan.

Here we come to another issue which is rail-cum-road transport, and how and to what extent these two transports are going to compliment each other.

In this connection multimodal transport techniques and procedures need to be gradually introduced along the major land transport corridors to help tackling effectively the transport operations.

It needs also to be mentioned that parallel developing the accompanying routeside infrastructure (restplaces, motels, gas/service stations, customs houses, etc.) has, particularly for road transport, great importance for the overall development of both freight and passenger traffic.

Another question is how much of the available services and routes' capacity would be used by domestic, bilateral, and international road/rail transit traffic. For the development of two latter types of traffic the facilitation of transport will play a very important role.