Conclusions and Recommendations

The principal conclusions and recommendations of the report are summarized in this section. The report itself can provide a suitable foundation for a comprehensive development plan for the Trans-Asian Railway network in the North-South corridor connecting Northern Europe to the Persian Gulf. Such a development plan is a prerequisite for the harmonized development of the sections of the corridor under the control of the various national railway organizations. Before such a development plan can be finalized, however, it will be necessary to:

(i) formalize a designated network for the Trans-Asian Railway in the North-South corridor between Northern Europe and the Persian Gulf;

(ii) define the fundamental and operational priorities for the TAR in this corridor; and

(iii) agree on a follow-up plan of action for the resolution of information gaps, the more detailed evaluation of the new lines construction programme and the formulation of suitable operational and commercial strategies and plans for the existing components of the corridor.

The main conclusions of the study in relation to each of these elements and the associated follow-up actions considered to be needed are given below.

7.1 TAR network designation

Conclusion 1: A Trans-Asian Railway network in the North-South Corridor of routes between Europe and the Persian Gulf with onward connections to South and South-East Asia was identified by the participating railway organizations on the basis of the three core routes and their possible future variants described in Chapter 2 of this report.

This network would connect Northern Europe (with Helsinki as the reference point of origin) with the Iranian port of Bandar Abbas at its southern extremity. In addition, it would offer onward shipping connections to South Asia and South-East Asia, and would also provide to the landlocked countries of Central Asia a rail connection to one of the main ports on the Persian Gulf. In its current configuration the corridor has a route length of 12,150 km, of which 50 km in Armenia, 800 km in Azerbaijan, 300 in Finland, 3,900 km in the Islamic Republic of Iran, 1,300 km in Kazakhstan, 3,200 km in the Russian Federation, 1,200 km in Turkmenistan and 1,400 km in Uzbekistan. In addition to the above, the corridor comprises 1,295 km of line section under construction (756 km between Mashad and Bafq, and 539 km

1 All figures rounded to the nearest hundred.
between Kerman and Zahedan in the Islamic Republic of Iran), 1,063 km of planned links (366 km between Astara and Qazvin in the Islamic Republic of Iran, 232 km between Eralievo in Kazakhstan and Bekdash in Turkmenistan, 240 km between Bekdash and Turkmenbashy, and 225 km between Kazandjik and Kuzuletrek in Turkmenistan). A 1,200 km shipping distance across the Caspian Sea is also part of the corridor. Finally, three main international ports are located at both ends of the corridor, namely: the ports of Helsinki (Finland) and Saint Petersburg (Russian Federation) at the northern end, and the port of Bandar Abbas (Islamic Republic of Iran) at the southern end.

Rail linkages totaling 6,550 km complete the corridor either directly or from connected ports in South Asia (4,650 km) and South-East Asia (1,900 km).

The corridor and its future direct rail connection with South Asia contains four different track gauges (1,435 mm, 1,520 mm, 1,524 mm and 1676 mm). There are to date two break-of-gauge locations at which inter-gauge transfer is required (at Djulfa and Sarakhs) but when the links currently under construction as well as those which are planned are completed, there will be three more at, namely: Astara, Zahedan (or Mirjaveh at a later stage) and Gorgan.

**Recommendation 1:** It is recommended that the North-South corridor between Northern Europe and the Persian Gulf be formally designated as such by the railways located along the corridor.

### 7.2 Fundamental role and operational priorities

**Conclusion 2:** A fundamental role and operational priorities must be established for the Trans-Asian Railway in the North-South Corridor.

Given its geographical location, the corridor has the potential to serve a number of regions of which the most obvious are Scandinavian countries, countries of Central and Eastern Europe as well as Central Asian countries. It may also attract traffic from / to regions east of the Urals mountains in the Russian Federation by providing import / export routes for goods between these regions and South and South-East Asia. In terms of market, the corridor could actually either compete with shipping, or provide shipping lines with the possibility to carry their containers from major ports in Europe (Bremerhaven, Hamburg, Helsinki, Saint Petersburg) to hinterland places in the Russian Federation, the Caucasus region or Central Asia. It is important that the fundamental role and operational priorities for the TAR network in the North-South corridor be defined in terms of its advantages in satisfying international as well as sub-regional transport demands. Such a definition of role and priorities should fully recognize the need to utilize the potential of the components of this network which are currently in place.

**Recommendation 2:** The fundamental role of the TAR in the North-South corridor should be identified as the provision of an efficient and competitive means of transporting containers between and among the countries within the corridor, with a minimum of delay at border crossings. The operational priorities should be defined in terms of improving border crossing procedures, train operating practices and tariff competitiveness in order to fulfill the container traffic potential of existing links in the TAR network.
7.3 Completing the network

**Conclusion 3:** It is apparent that the components of the corridor in the Central Asian route are already in place. However, it seems that the route in the corridor best suited to serve traffic from Northern Europe (as well as other subregions of Europe), the Caucasus Route, does not have all its components in place. Indeed, the efficiency of cross-border operations at Djulfa between Azerbaijan and the Islamic Republic of Iran needs to be assessed and compared to the operational efficiency that would result from constructing the Astara - Qazvin link.

**Recommendation 3:** Detailed financial and economic evaluations of the projects relating to each alternative of routing different types of cargo through the Caucasus Route should be undertaken as a matter of priority by the railways concerned.

7.4 Traffic information and forecasting system enhancement

**Conclusion 4:** The railways in the corridor will only be able to plan its development after potential traffic volumes likely to use it have been assessed. This traffic forecasting task will be greatly facilitated if the railways defined a reliable freight and container traffic information system on an origin/destination basis.

**Recommendation 4:** All railways in the corridor should take steps to improve the capability of their management information systems to provide freight and container traffic/volume data on an origin/destination basis. Ideally, the methodology behind the definition of such systems should be done jointly to ensure a consistency of approach for corridor traffic.

7.5 Identifying and achieving targets for competitive rail service

**Conclusion 5:** The main competition for rail within its target market (i.e. container transportation between and among the countries of the Corridor) is provided largely by combined land and sea transport. In order to divert this traffic to direct transportation by rail, the railways in the corridor must be capable of improving on the service standards (principally transit times and reliability/punctuality) and tariff levels set by competing modes, i.e. road and shipping lines.

**Recommendation 5:** The railways concerned should actively cooperate to develop a focused marketing strategy, an operational plan (with an emphasis on operation of container block-trains) and a tariff structure aimed at securing a majority of the container transportation business in the target market. In order to achieve the latter, existing operating agreements between neighbouring railway systems must be amended to allow for the quotation of through commercial tariffs to potential
customers and for an appropriate basis of revenue distribution between each system, recognizing that this may require a departure from existing tariff-setting structures and practices.

7.6 Recommended minimum technical standards

Conclusion 6: A primary requirement for the TAR network to carry all kinds of containers, including high cube and super high cube containers, imposes on the railway systems operating within the North-South corridor structure gauge dimensions which are compatible with the highest and widest profile containers in use - unless alternative measures, such as the adoption of low profile wagons, can be applied. Meanwhile, there are obvious advantages, both operational and commercial, in scheduling container block-trains to run at or near passenger speeds. The competitiveness of rail could be further strengthened if the maximum speeds of container block-trains could be lifted to 80 km per hour.

Recommendation 6: The following technical and operational standards are recommended for the future development of the Trans-Asian Railway North-South corridor:

(i) Structure gauge dimensions should be compatible with the dimensions of super high cube (i.e. 9ft 6in high) containers or alternative measures should be applied to ensure the unimpeded passage of these containers through structures on designated links; these standards should be agreed by all the railways concerned and become the norm in the planning of future infrastructure development programmes as well as rolling-stock replacement programmes;

(ii) In the same manner, for designated TAR links, the standard of track and structures should be progressively upgraded as necessary to allow maximum speeds of 80 km/h for container block-trains; and

(iii) in general terms, the railways concerned should make all possible efforts to identify sources of operational incompatibility due to technical or work-organization reasons, and seek ways of harmonizing the related procedures, one such important element left out at this stage but that will be crucial in later stage is a review of infrastructure capacity as regards line as well as terminal operations.
7.7 Specific container handling needs

Conclusion 7: Within the scope of the study, limited attention was given to container handling capacity in ports as well as the definition of the desired level of rail/ship interface in ports. This is necessary, not only for the main ports at both ends of the corridor, but also for the ports on the Caspian Sea.

Recommendation 7: A detailed review of the necessary rail/ship interfaces in the main ports will have to be done in parallel with traffic forecasting. In particular, to build on the intermodal advantage of rail, a review of the rail infrastructure in ports will have to be made to see what measures are needed to allow rail access to container berths and stacking areas at ports (and in general to loading/unloading areas at ICDs) with the objective of allowing direct receipt and dispatch of full length container block-trains. In this regard, greater interaction should be sought between railway administrations and port authorities where this is not already the case. The creation of a permanent consultative body between the two modes could be envisaged.

7.8 Facilitation measures for cross border traffic

Conclusion 8: There has generally been a poor rate of accession by the countries within the North-South Corridor to the international transit conventions identified in Resolution 48/11 of the ESCAP Commission’s 48th session in April 1992. In particular, there needs to be a better recognition by the relevant countries of the benefits of acceding to the Customs Convention on Containers (1972) and the International Convention on the Harmonization of Frontier Control of Goods (1982), since these implementation of these conventions could streamline customs control procedures and contribute to a smooth and rapid flow of border crossing rail traffic. In addition, border crossing might be facilitated through the adoption of Electronic Data Interchange systems which are linked to computerized wagon trackinglocator systems and which would permit consignees, freight forwarders, border customs authorities and others involved in the international transport chain to have early advice of consignment status/location data and early access to customs and trade documentation. Finally, existing railway agreements adopted on a bilateral basis by neighbouring railways in the corridor may not currently work in favour of increased rail border crossing traffic.

Recommendation 8: It is recommended that:

(i) stronger consideration be given by the countries in the North-South corridor, which have not yet acceded to the above-mentioned international conventions of Resolution 48/11 relevant to rail traffic, to their full accession to these conventions;
(ii) the railways of the North-South corridor take positive steps towards early definition and introduction of EDI systems linked to computerized wagon tracking systems; and

(iii) countries which are party to bilateral rail transit or operating agreements review these agreements, whenever necessary, to ensure that their stipulations are in accordance with the promotion of efficient operationalization of the corridor as well as commercialization of container services in block-trains. The provisions of these agreements should particularly promote the cross-border movements of rolling-stock wherever there is track gauge continuity and the establishment of through international tariffs.

7.9 TAR network development needs

Conclusion 9: A high level of international cooperation is a prerequisite to the efficient planning and timely implementation of all technical, commercial and institutional actions related to the development of the corridor.

To secure the required high-level coordination, it is important to set up a dedicated Working Group for the corridor consisting of senior professionals taken from within as well as from outside the railways. The tasks of the Working Groups will be to plan, organise and monitor activities as regards the technical, institutional and commercial aspects relating to the corridor development. Before performing the necessary tasks, it is important that prior to the establishment of the Working Group, the framework under which implementation progress has to be reported and milestone decisions have to be approved be defined. A Coordinating Council in charge of the corridor development might provide such a framework.

Recommendation 9: It appears that the high-level of cooperation needed to secure the development of the North-South corridor may require the creation of a special corridor Working Group working under high-level authority (possibly ministerial level). All parties concerned – ministries of transport or ministries of railways, railway organizations, customs authorities and port authorities – in all the countries along the three routes in the corridor may wish to consider the creation of a North-South Corridor Development Coordinating Council and the signing of a Memorandum of Understanding to formalize their will to plan and develop the corridor in accordance with a joint time-related Action Plan, and promote the use of the corridor. The Coordinating Council and the Working Group should meet at regular intervals.