Review of Development of Transport and Logistics Network in North-East Asia

Madan B. Regmi, DEng.
Transport Division
UNESCAP, Bangkok
Outline:

- Rio+20 Outcome (Transport and Logistics)
- Integrated International Intermodal Transport
  - Asian Highway
  - Trans-Asian Railway
  - Dry Ports of International Importance
- Logistics Performance
- Intermodal Transport Corridors
- The Way Forward
Rio+20 Outcome (Transport-Logistics)

- Three pillars of sustainability
  - Economic
  - Social
  - Environmental
- Transport and mobility are key to Sustainable Development
- Efficient movement of goods and people
- Energy efficient multimodal transport system
- Clean fuels and vehicles
- Integrated approach to planning
- Affordable and sustainable transport
- Sustainable transit transport- need of landlocked and transit countries
- Capacity development
The Vision for Asia and the Pacific

- Development of an international integrated intermodal transport and logistics system
  - Busan Declaration, 2006
- Ministerial Conference on Transport, 2012
- 10 Thematic Areas including:
  - Transport infrastructure development
  - Transport logistics
  - Sustainable transport development
  - Inter-island shipping
### Status of Transport Development in NEA

<table>
<thead>
<tr>
<th>Country</th>
<th>Length, Km</th>
<th>Rd Growth</th>
<th>Veh. Growth</th>
<th>car/1000 pop.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mongolia</td>
<td>49,250</td>
<td>0.8%</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>China</td>
<td>4 m</td>
<td>6.2%</td>
<td>12.5%</td>
<td>27</td>
</tr>
<tr>
<td>Japan</td>
<td>1.2 m</td>
<td>0.50%</td>
<td>1.80%</td>
<td>319</td>
</tr>
<tr>
<td>Rus. Fed.</td>
<td>1.14 m</td>
<td>1.20%</td>
<td>6.20%</td>
<td>206</td>
</tr>
<tr>
<td>DPRK</td>
<td>31,200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROK</td>
<td>105,565</td>
<td>3.1%</td>
<td>6.3%</td>
<td>257</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country</th>
<th>Length, Km</th>
<th>Electrified</th>
<th>Gauge, mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mongolia</td>
<td>1,810</td>
<td></td>
<td>1,520</td>
</tr>
<tr>
<td>China</td>
<td>91,000</td>
<td>46%</td>
<td>1,435</td>
</tr>
<tr>
<td>Japan</td>
<td>20,000</td>
<td>61%</td>
<td>1,067, 1,435</td>
</tr>
<tr>
<td>RF</td>
<td>85,200</td>
<td>51%</td>
<td>1,520</td>
</tr>
<tr>
<td>DPRK</td>
<td>5,235</td>
<td>81%</td>
<td>1,435</td>
</tr>
<tr>
<td>ROK</td>
<td>3,575</td>
<td>60.4%</td>
<td>1,435</td>
</tr>
</tbody>
</table>

- Railway considered more environmental friendly
- Still majority of investment is in Highways (75% road, 7-15% railway, 3-7% IWT)
- High speed railway developments
- Limited use of inland water transport and coastal shipping in Asia

(ESCAP, 2011)
143,000 km, 32 countries

- Intergovernmental Agreement on AH
- 29 Parties
- Obligations of the Parties
- Negotiating mechanism
- Working Group on the AH
AH Conformity to Design Standards (2010)

Need investment to upgrade 10,000 km of AH routes.
Upgrading the Asian Highway network

Progress of network development

<table>
<thead>
<tr>
<th>Year</th>
<th>Primary</th>
<th>Class I</th>
<th>Class II</th>
<th>Class III</th>
<th>Below III</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>14%</td>
<td>13%</td>
<td>37%</td>
<td>26%</td>
<td>9%</td>
</tr>
<tr>
<td>2010</td>
<td>15%</td>
<td>17%</td>
<td>39%</td>
<td>22%</td>
<td>7%</td>
</tr>
</tbody>
</table>
Trans-Asian Railway

- 22 signatories
- 18 Parties
- Entered into force on 11 June 2009
- Working Group on TAR

117,000 km, 28 countries
10,500 Km Missing Links
Completing the Trans-Asian Railway Network

Building the missing links

1. **Islamic Republic of Iran – Afghanistan** (ongoing)
2. **Islamic Republic of Iran – Azerbaijan** (ongoing)
3. **China – Kyrgyzstan**
4. **ASEAN – China**
5. **Turkey – Georgia** (ongoing)
6. **Islamic Republic of Iran – Armenia**
7. **Islamic Republic of Iran – Pakistan** (completed end 2008)
8. **Thailand – Lao PDR** (inaugurated March 2009)
9. **Myanmar – Thailand**
10. **Myanmar – India**
11. **Thailand – Cambodia**
12. **Cambodia – Viet Nam**
13. **US$ >25 billion**

**Countries and details:**
- **Islamic Republic of Iran – Afghanistan**: Ongoing project.
- **Islamic Republic of Iran – Azerbaijan**: Ongoing project.
- **China – Kyrgyzstan**: Project under consideration.
- **ASEAN – China**: Project under consideration.
- **Turkey – Georgia**: Ongoing project.
- **Islamic Republic of Iran – Armenia**: Project under consideration.
- **Islamic Republic of Iran – Pakistan**: Completed by the end of 2008.
- **Thailand – Lao PDR**: Inaugurated in March 2009.
- **Myanmar – Thailand**: Project under consideration.
- **Myanmar – India**: Project under consideration.
- **Thailand – Cambodia**: Project under consideration.
- **Cambodia – Viet Nam**: Project under consideration.
- **Total cost**: US$ >25 billion.
Intermodal Transport and Integration

- Transport Links
  - Integration of road (AH), rail (TAR), inland waterways, shipping and port networks

- Transport Nodes
  - Intermodal nodes/interfaces (ICDs, Dry ports, Airports, Ports, River Ports)

- Transport Services
  - Private/public sector

- Integration of transport modes
  - Development of logistics centres and dry ports
  - Facilitate and promote modal shift
Dry Ports: Concept

- Concept is to develop facility similar to ports away from ports in inland areas
  - Asia - early stage of development - 12 landlocked countries
  - Ideally connected by railways
  - Climate change and environmental aspects
- Relieve congestion and ports and roads
- Potential of mode shift (Road to rail) and emissions reduction
  - Consolidation – reduce less than truck loads runs and reduce number of trucks
  - Improved logistics can reduce 10-20% emissions (OECD, 2010)
  - Consolidation and distribution centres in UK have combined 25.7% emissions reduction (Zanni and Bristow, 2009).
  - Replacement of trucks by freight train from port to dry port in Sweden led to 25% CO₂ emission reduction (Roso, 2007).
- Regional economic development: industrial centres, free trade areas
- 43% of freight modal shift to railways, 30% less CO₂ emission (Laos-Thailand corridor)
Development of Logistics Centres and Dry Ports

- Intergovernmental Cooperation - Agreement
  - Promote development of dry ports of international importance
  - Facilitate recognition of dry ports and investment
  - Improve operational efficiency of intermodal freight
  - Enhance environmental sustainability of freight transport - mode shift

- Structure of the Agreement
  - Main text
  - Annex I: List of dry ports of international importance in countries
  - Annex II: Guiding principles for development and operation

- Progress
  - The Committee on Transport, 10-12 October 2012, Bangkok, approved the finalized text of the Agreement
  - Adoption at the 69th session of Commission in April 2013
  - Opening for signature - 4-8 November 2013, Bangkok, Forum of Asian Minister of Transport
Dry Ports of International Importance (NEA)
Logistics Performance Index, 2012


(World Bank, 2012)
What are possible solutions to improve logistics performance?

- Integrated transport planning
- Improvement of infrastructure and services
- Harmonization of rules and process
- Transport and trade facilitation measures
- Application of ICT
  - container tracking-RFID, GPS
  - border crossing and security
  - customs clearance technology-EDI
Intermodal transport corridors

- Corridor based approach
  - Infrastructure
  - Facilitation
  - Operation
- Review of condition of infrastructure, process and procedures and analysis of operation time, costs
- Need to measure and continuously work to improve efficiency
- Improvement and upgrading of infrastructure is an ongoing process- need resources and time
- Improving operations and facilitation measures needs COMMITMENTS
Corridor 1: Incheon-Ulaanbaatar

(Data from private sector and Govt. Dec 2010)
Corridor 1 & 3: Zamin Uud-Yekaterinburg

(Data from private sector and Govt. Dec 2010)
The Way Forward to Improve Transport and Logistics

- Integrated transport planning
- Ensuring economical, environmental, and social sustainability of transport system and services
- Innovating financing of transport and logistics system-engaging private sector
- Promoting development of intermodal transport corridors
- Transport facilitation and logistics
- Utilize transport infrastructure for cross-border trade
- Capacity development
- Sharing and exchange of good practices
Thank you