SUSTAINABLE FREIGHT TRANSPORT:
OPPORTUNITIES FOR DEVELOPING COUNTRIES

by

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International Union of Railways (UIC)

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UIC in 2015
UIC today

- 240 Members in 95 countries
- 3,000 billion passenger kilometres
- 10,000 billion tonnes kilometres
- 1 million kilometres of lines
- 7 million rail personnel
- Cooperation with over 100 institutions
- 700 UIC Leaflets (international railway standards)
- 85 congresses, conferences, workshops
Rail freight activity

Fig. 7: Railway freight transport activity by geographic area, 1975-2011 (trillion tkm)

Source: Elaboration by IEA based on UIC (2013a)
Railway energy efficiency

Fig. 10: Railway specific energy consumption, 1975-2011

Source: Elaboration by IEA and Susdef based on IEA Mobility Model and UIC (2013a)
2014 Voluntary UIC targets in line with the 2 degrees scenario

Freight transport (at global level)

Modal shift road/rail

2010 = 2030

Railways shall transport the same amount of goods transported globally on roads, (measured in t*km)

2010 > 2050

Railways shall transport 50% more goods than the amount transported globally on roads, (measured in t*km)
Freight traffic in China by transport carrier 1980-2012 (million metric tons)

Source: Ministry of Transport of China, China Statistical Yearbook 2013, page 571
Rail vs Road environmental impact

100 ton, 1,390 km from the dry port in Kigoma to Dares Salaam, Tanzania

Source: www.ecotransit.org
Rail freight offers competitive journey times
Policy requirements for dry ports

China case study
Effective regulation of rail projects

- 1979 Environmental protection law

- 1986 State Environmental Protection Agency issues environmental projection measures for construction projects:
  - All projects have an Environmental Impact Assessment (EIA) with mitigation hierarchy (avoid, mitigate, offset)
  - Integration of pollution prevention in design, construction & operation

- 1995 the Ministry of Railways develop a broader set of environmental projection, regulations, guidance & standards & improve enforcement

- Capacity building through visits to Germany, USA and France
China case study
Effective regulation of rail projects

Guiyang-Guangzhou Railway Project:

Realignment during the feasibility study to avoid forty environmentally sensitive sites

Tunnel – bridge- tunnel schemes used for 81% of the route to minimize land take and ecological foot print

Borrow pits returned to local community for use as fish ponds

Excavated material (spoils) used for embankments and converted to arable land
Case study
Indian dedicated rail freight corridor

Major contracts currently being tendered / awarded for the Western and Eastern corridors, total 3360 km of new freight route

Specific fuel consumption for electric traction in DFC scenario would be 30% lower than No-DFC scenario

Over the 30 year period, this will save 485 million ton CO2 75% reduction relative to the baseline
Africa case study
Rail concessions in Africa

- Huge potential to unlock development, particularly for landlocked countries and remote areas.

- Private sector involvement (PPP):
  - Increase in productivity and service
  - Requires strong regulatory capacity
  - Infra renewal required public financing
  - Overall mixed results

- Fair competition with road freight is needed (regulation & pricing).

- Internalization of external costs.

- Common standards (gauge, axle weights & line speed) to support future network development and internal trade.
Conclusions

- Development of dry ports (Land locked developing countries, etc) & promotion of combined transport have huge potential
- Simplification of border crossings is needed (Eurasian Customs Union & European Union)
- Fair competition based with the road sector is essential
- Internalisation of external costs (road tolls, etc)
- Infrastructure development & renewal requires public support
- Private sector involvement can improve productivity & service, but requires strong and informed regulation & terms
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