Development of digitally empowered dry ports

Workshop on Mongolia's sustainable digital trade and transport

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Intergovernmental Infrastructure Agreements

ESCAP
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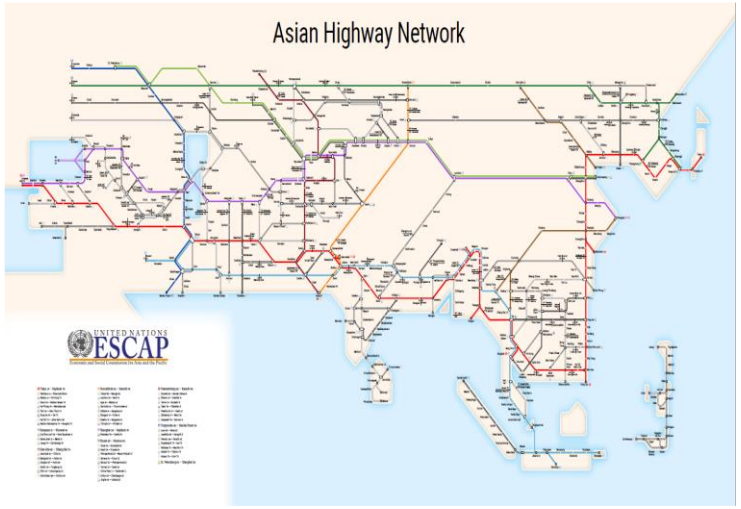
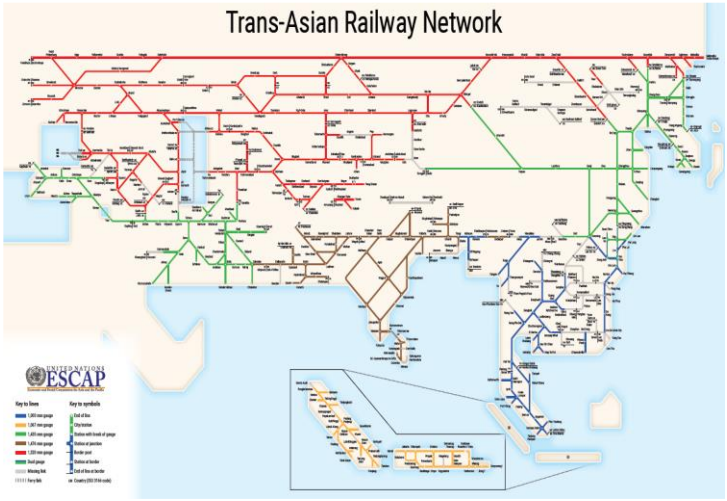
Asian Highway Network



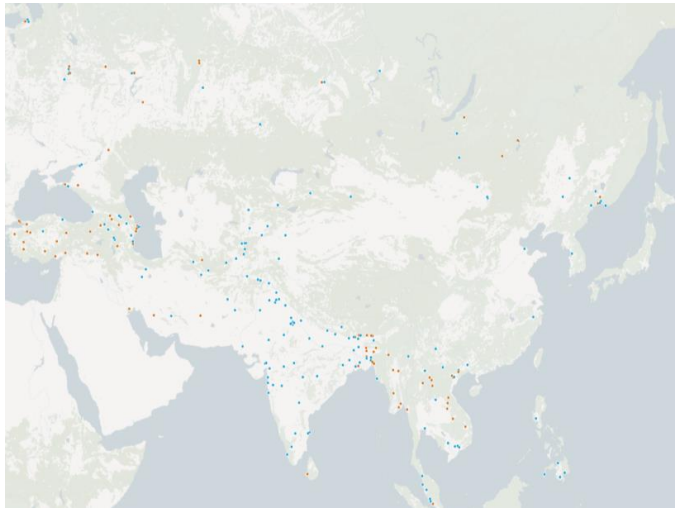
- Intergovernmental Agreement on Asian Highway network
- Entered into force in July 2005
- 30 Parties
- 145, 000 kms in 32 countries
- Working Group on the Asian Highway

Trans-Asian Railway Network



- Intergovernmental Agreement on Trans-Asian Railway network
- Entered into force in June 2009
- 21 Parties
- 118, 000 kms in 28 countries
- Working Group on the Trans-Asian Railway Network

Dry Ports



- Intergovernmental Agreement on Dry Ports
- Entered into force in April 2016
- 17 Parties
- 275 dry ports in 27 countries
- Working Party on Dry Ports

UNITED NATIONS
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Dry ports and International transport and logistics

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- Inland intermodal facilities or dry ports improve transport efficiency and meet supply chain requirements by grouping access to highways and railways together with customs processing, warehousing, consolidation and distribution, manufacturing and clustering of economic activities along domestic and cross-border economic corridors.

- The dry port concept initially emerged from the idea of a seaport directly connected by rail to inland intermodal terminals, where shippers can leave and/or collect standardized units as if they are at the seaport. This was a response to the problems posed by the growth of containerized transport and the corresponding lack of space at seaport terminals and growing congestion on the access routes serving their terminals.

- In contrast to a seaport, which is an integral link between the maritime and land transport systems, dry ports can be considered as an essential part of inland trade distribution system, providing an inter-modal link between inland transport modes (for example, road and rail, rail and inland waterway, etc.)

❑ **Economic Benefits**

- Contribute to reduced transport cost of moving freight inland.
- Bring down road maintenance costs,
- Generate other economic activities in the vicinity.

❑ **Environmental benefits**

- Reduce GHG emissions levels.

❑ **Social benefits**:

- Increase in public safety (reduced accident costs)
- Contribute to time reduction in congested roads and seaports

Intergovernmental Agreement on Dry Ports

ESCAP
Economic and Social Commission for Asia and the Pacific

- Harmonizes the definition of dry ports. “an [inland logistics centre] connected to one or more modes of transport for the handling, storage and regulatory inspection of goods moving in international trade and the execution of applicable customs control and formalities”

- Provides a list of existing and potential dry ports, normally located in the vicinity of: (a) inland capitals, provincial/state capitals; and/or (b) existing and/or potential production and consumption centres with access to highways and/or railways including the Asian Highway and/or Trans-Asian Railway, as appropriate. Dry ports have transport connections to other dry ports, border posts/land customs stations/integrated check posts, seaports, inland waterway terminals and/or airports.

- Sets out principles for guidance in developing and opening dry ports

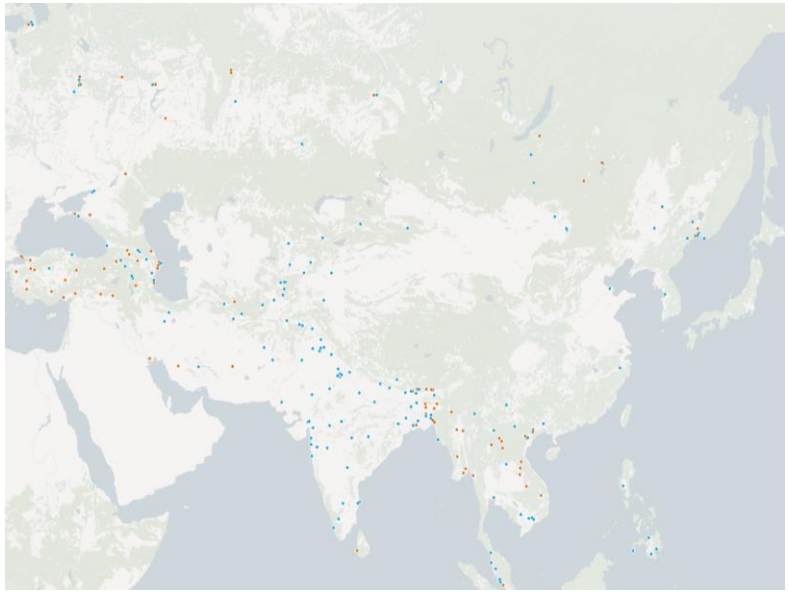
- Creates an intergovernmental Working Group on Dry Ports.

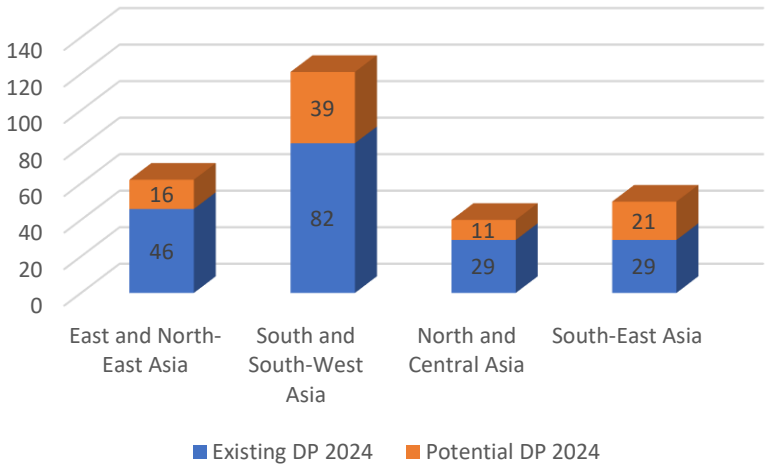
- Is complemented by the Regional Framework for dry ports of international importance designed to identify main issues in the development, design, planning and operation of dry ports of international importance, suggests targets and ways to achieve them

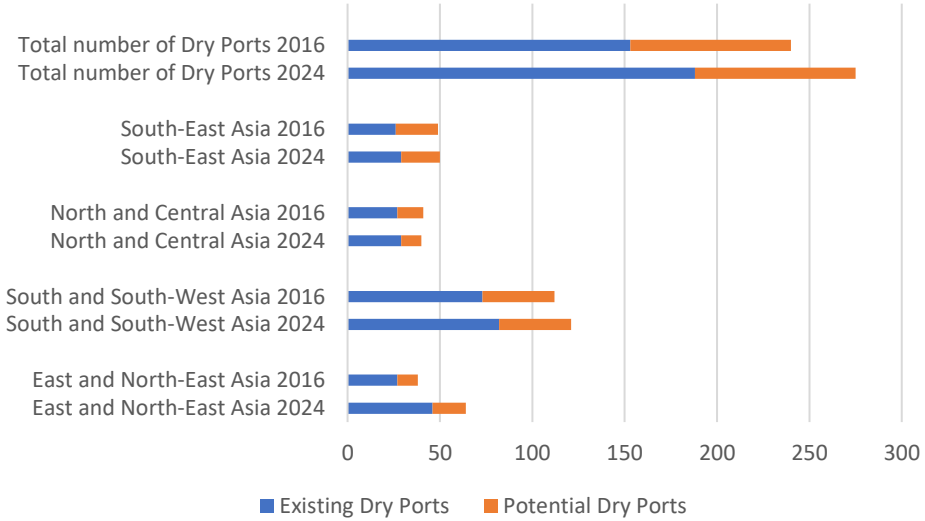
Functions	Institutional, administrative and regulatory frameworks
Design, layout, capacity	Infrastructure, equipment, facilities

Dry ports in Asia in 2024

- To date, the Intergovernmental Agreement on Dry Ports has 17 Parties and covers **275** dry ports in Asia, **as of year 2024.**
- The Agreement covers both existing and potential dry ports. **Out of 275 dry ports listed in the Agreement, 188 are existing and 87 are potential**
- The majority of dry ports, potential and existing, are located in South and Southwest Asia.
- The agreement is particularly of interest to the Asian landlocked developing countries, most of whom, including Mongolia, have joined the agreement





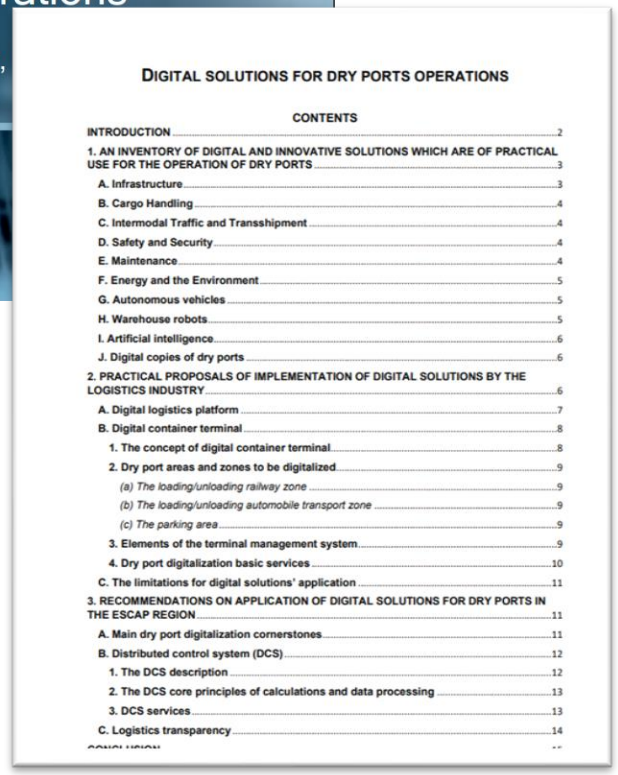


Digitalization of Dry Port

- Need for increasing the attractiveness of intermodal and multimodal transport operations;
- Need for developing a region-wide strategic vision of digital transport corridors;
- Lack of accurate and timely information;
- Need for the information about equipment failures and their consequences;
- Dry ports environments have become intricate partner networks that include the authorities, terminals, shipping lines, trucking and logistics companies, and off-dock storage providers.

- Digitalization of dry ports takes place in the **broader context of the international intermodal transport and economic corridors**, scaling up the catalytic role of dry ports and expanding the scope of the economic and social benefits of transport connectivity.
- There is high relevance of the application of modern information and communications technologies, digital solutions and innovative business models for **increasing the attractiveness of intermodal and multimodal transport operations, as well as of developing a region-wide strategic vision of digital transport corridors**.
- The **dry ports environments** have become intricate partner networks that include the authorities, terminals, shipping lines, trucking and logistics companies, and off-dock storage providers. To stay effective, stakeholders have to do more than simply adopt these technologies on their own. Instead, they must embrace platforms and services that make it easier for stakeholders to work together to promote the efficiency of the overall ecosystem.
- Digitization is now the first step towards improving the situation with operating a dry port by **transforming all relevant information into digital form**, making it available for centralized use and management.

Digital solutions for dry port operations



DIGITAL SOLUTIONS FOR DRY PORTS OPERATIONS

CONTENTS

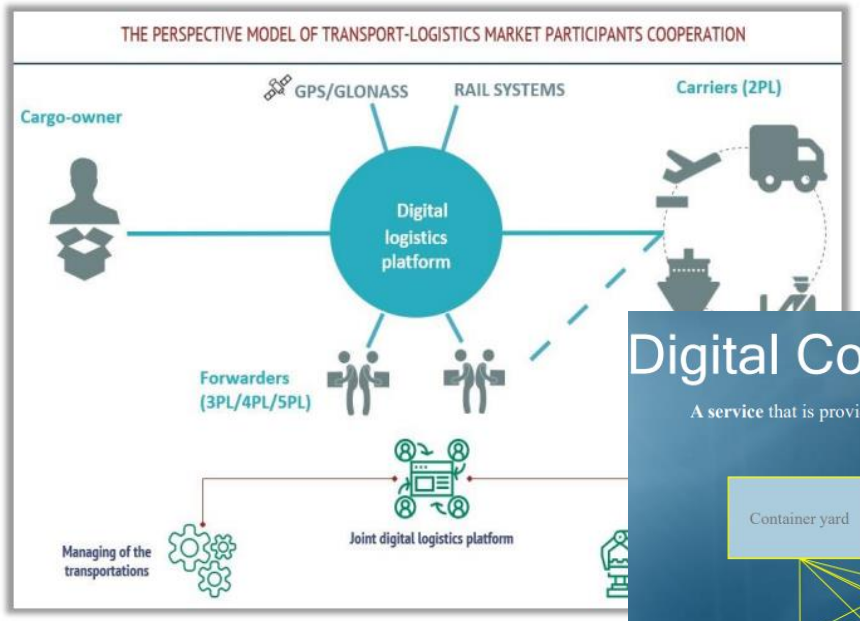
AREAS OF APPLICATION

- DRY PORT INFRASTRUCTURE – embedded smart sensors that could transmit real-time data on operations
- CARGO HANDLING – reliable monitoring systems
- INTERMODAL TRAFFIC AND TRANS-SHIPMENT – terminal appointment systems
- SAFETY AND SECURITY – networked biometric scanners
- MAINTENANCE
- ENERGY AND THE ENVIRONMENT – motion-based terminal illumination system
- AUTONOMOUS VEHICLES
- WAREHOUSE ROBOTS
- ARTIFICIAL INTELLIGENCE

https://www.unescap.org/sites/default/files/Presentation%20-%20Dry%20Ports%202_digital%20solutions.pdf

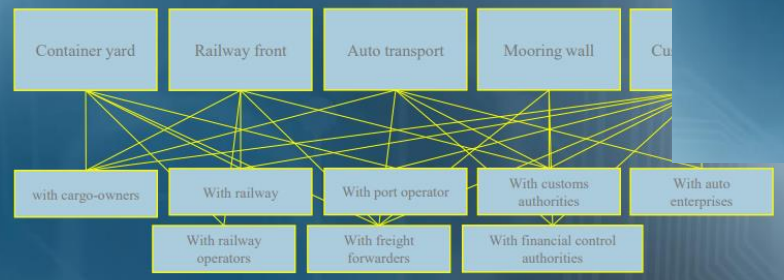
Digital solutions for dry port operations

Digital Logistics Platform



Digital Container Terminal

A service that is providing through IT solutions terminal business-processes management, i technological coordination with all the stakeholders



- The approach to the terminal services on the principle of "singe window" and the possibility of terminal services reservation as a part of complex logistics door-to-door service;
- Monitoring of the actual and documentary cargo condition and the equipment on the terminal;
- Centralized/distributed electronic document circulation;
- Containers/wagons transfer;
- Cargo presentation for customs registration and monitoring of the customs clearance process;
- Centralized control of the powers of attorney;
- Formalization of the transportation and accompanying documents (railway and transport consignments).

Distributed Control System (DCS)

The basement of the dry port's DCS is an architecture of the system that is meeting the following requirements:

- availability of a wide list of potential stakeholders' categories (inner and external), the possibility of users' categories list expansion (independent designers, system integrators), the potentially large number of external users;
- separateness and independence of dry port's DCS from the status of external IT systems, security and cyber-attacks sustainability;
- the availability of a variety of integral services and the increase of its amount as far as the dry ports network and logistics services market develops;
- the requirement for integration with the internal management systems, providing the commercial activity of dry ports, its financial processes and operation functions;
- the exposure of architecture for further integration with the existing and perspective analytics platforms;
- the availability of interfaces for the establishing of cooperation with the state and private analytical platforms of the potential foreign partners.

Lessons learned from digital dry port applications

Main dry port digitalization cornerstones

- Dry ports usually specialize on handling particular types goods and have certain geographic and logistic peculiarities, which have to be taken into account while creating the terminals processes digitalization systems.
- Every dry port is a place where different material and information flows of a large number of logistics process participants are crossed: cargo owners, forwarders, linear operators, carriers, state authorities and many others.
- In perspective, the multipurposed systems that will be integrated with the other logistics chain participants IT systems will be the winners of the dry ports digitalization market – not the IT-systems of the separate terminals.

The limitations for digital solutions application

- The standardization and the output of the market participants and regulatory organizations at every stage.
- Unification of formal documents, accompanying cargo and proving the fact of this or that transport and logistical service render.
- The output of the united legislation base on the international and national levels, regulation the relations between the sides of the digital transport-logistics process.


thank you
danke
謝謝
ngiyabonga
teşekkür ederim
gracias
merci
obrigado
bedankt
dziękuję
спасибо
go raibh maith agat
mochchakkeram
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