Global and Regional Issues on Sustainable Port Development

Capacity Building Workshop on Sustainable Port Development and Improving Port Productivity among ESCAP Member Countries
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UNITE D NATIONS
Economic and Social Commission for Asia and the Pacific
Sustainable Development Goals

- SDG: global & permanent agenda
- Transforming our world: the 2030 Agenda for Sustainable Development (Leaving no one behind)
Central role of transport in achieving SDGs:
- The transport sector makes a direct and indirect contribution in the SDGs.

Nexus diagram on Contribution of the transport sector to the Sustainable Development Goals and targets.

Global & Regional initiatives

- UN: 2030 Agenda
  - IMO: Sustainable shipping, Conventions & regulations (SOLAS, MARPOL, GHG emission, ECA, BWMS)

- APEC: APEC Green Port Award, APEC leadership

- ASEAN: ASEAN Transport Strategic Plan (2016-2025)

- Industry: International Association of Ports and Harbors (IAPH), Green port congress

- National: National master plan for sustainable transport
Issues - Investment

- Over the past 30 years, seaborne container throughput continued to expand, except for 2009, shortly after the economic crisis.
- World container port throughput was 752MTEU(2017)
- According to ESCAP forecasting, port traffic of ESCAP region will account for 80% of the total (international trade only)
  - Need huge amount of investment to handle increasing traffic volume

Investment demand in the Asian transportation sector is expected to reach 8,353 billion $(2016-2030)

Financing is an important and urgent issue
- Public Private Partnership

Container throughput trend (%)

Issues - Bigger ships

- 1956: First container ship – 58TEU
- 2017: OOCL Hong Kong 21,413TEU
- Triple E (Economy of scale, Energy efficient and Environmentally improved) ships were deployed in major shipping routes
- Impact of large ships: Limited port calls, but increasing demand for infra at mega/hub ports
  - Large scale port investment required
  - Hinterland transport connectivity needed
  - Establishment of competitive structure focused on large shipping lines
    - Market share of global top 7: 75.7% (2017)
    - Terminal operators are vulnerable to negotiations with Alliances and shipping companies

![Fifty years of container ship growth](image)
Facing fierce competition to be hub port and gateway
- Not only among countries but also among ports in the same country
- Depends on holistic national port development policy, however, this is sometimes influenced by local government, port authority, GTO and etc.

Integrated intermodal transport system becomes crucial
- Integrated transportation connectivity including roads, railways, shipping, inland waterways, and logistics centers is important factor in deciding port competitiveness
- Strongly recommended to make master plan for integrated transport connectivity between road, rail, coastal shipping, inland waterways and logistics distribution centers and P

Fierce competition to attract transshipment cargo
- Transshipment cargo is attractive but volatile (Singapore, Hong Kong)
- Cooperation and negotiation with shipping companies is important
Automation is another trend for port development and operation

- Main reasons: improve port productivity, solve labor problems, prevent human errors, build eco-friendly ports and etc.
- Key is the improving overall operating efficiency (productivity) of the terminals

- To increase productivity
- To contribute sustainable and safety port
- To facilitate integrated transport connectivity
- To meet the needs of various stakeholders
- To Increase logistics efficiency

Applying information and communication technologies

- Not only the latest information technology such as IoT, Big data, Block Chain and ITS but also existing technology like EDI, RFID, Single window, and container monitoring/tracking technology are applied to the port/terminal and whole supply chain
Issues - Sustainability

- Sustainable port issues now critical
  - Environmentally friendly port/green port development and operation is an important issue in all countries
    - Air pollutants from ships and heavy machines, Particular Material, Noise and traffic congestion

- Policies options for eco-friendly port are available
  - High energy efficiency, Low GHG and air pollutant emissions
    - Renewable energy, Conversion energy source
    - ECA(Emission Control Area – Some countries already adopted)
    - Automated terminal
    - Alternative Maritime Power (Devices supplying electricity to ships from land side)
  - Combine options in line with strategy and condition of port
  - However, in practice, ports that implement environmentally friendly policies are limited due to financing and social disagreement

- Legal and institutional support is essential to implementing eco-friendly policy options
  - Recommendation is not enough and law and institution are needed
**Issues - Resilient port**

- **Ports are exposed various natural disasters**
  - Natural disasters: earthquakes and tsunamis, flooding, sea level rising, typhoons, dense fog, strong winds
  - Earthquakes (including tsunamis) and typhoons are critical
  - But recent sea level rising due to climate change including global warming is becoming a serious risk
  - Case of typhoons: the route, frequency and size of the typhoons are different from those of the past and the damage is greatly increasing
  - Case of the Pacific Island countries

- **Various social risks also became serious**
  - Fire, blackout, explosion, and chemical leaks
  - Cyber attacks are evolving and damage is growing
  - Transport industry damaged a lot
  - Case: Maersk Line and terminals (Ransomware)
Port Congestion

- Impact on the business of a number of stakeholders such as shippers, shipping lines and trucking companies and etc.
- Not only congestion costs but also social costs such as air pollution and accidents
- Emission from ships and heavy trucks

Reasons of congestion

- Basically, congestion occurs when capacity is limited
- Bad weather (fog, ice, typhoon), delays in cargo handling (low productivity), delays in CIQ process, and social risks (strike, sabotage, cyber attack)

Some ports experienced congestion due to typhoon, fog, social events, limited hinterland connectivity and increased ships calling

Less utilized

- Some ports, however, are not yet fully utilizing against their potential
- Delayed investment due to various social and economic reasons (Disagree by stakeholders on automation, NGO)
Challenges and issues on sustainable port development

- Lack of long-term port infrastructure development plan
- Intensifying competition (external and internal)
- Lack of infrastructure connectivity
  - Modes: road, rail, coastal shipping, inland waterways
  - Nodes: Terminal, station, ICD, logistics complex
- Insufficient port facilities: Increasing port congestion and port time
- Lack of investment (public, private)
- Increasing Larger ships
- Lack of skilled/trained experts & workers
- Difficulties to secure social and political support
- Traffic congestion and air pollution in port area (Port city)
- Digital divide and technology gap
- Exposure to natural disasters and social crimes
**Recommendation**

- **Build long term and substantive plan**
  - Clear your vision and goals
  - Prepare Long-term Master Plan
  - Holistic approaches: Integrated transport development plan (National logistics master plan)

- **Need specific strategies and action plans**
  - Establish implementation plan: Road Map and action plans
  - Means and methodology should be clear

- **Work together: implementing simultaneously**
  - Continuous investment for infrastructures (New development and upgrade exiting facilities)
  - Strengthen cooperation with all stakeholders
  - Enhancing partnership with intergovernmental Organizations, MDB (WB, ADB, AIIB) Potential donors/ODA institutions for financing/guarantees as well as capacity building, technical advice and knowledge sharing
Appendix (overview on ongoing project)

- **Title:** Sustainable port development and improving port productivity among ESCAP member countries
- **Period:** January – May 2019
- **Donor:** Ministry of Oceans and Fisheries and Korea Ports and Harbours Association, Republic of Korea

**Strategies**
- Literature survey
- Develop guideline
- Organize workshop (Current status)
- Reporting and dissemination
- Post project review

**Expectation:** Increasing awareness, enhance capacity, share knowledge/good practice and secure further cooperation

Your feedback and suggestions are always welcome