

MARITIME TRADE AND GREENHOUSE GAS EMISSIONS A STUDY ON 'GREEN' TOTAL TRANSPORT AND LOGISTICS COST (TTLC)



Maritime trade covers about 80% of international trade by volume. The shipping industry currently accounts for 3% of global annual CO₂ emissions. Some scenarios envision this number to increase to 17% by 2050. To be able to mitigate the risks of

climate change, it is crucial to understand the magnitude of emissions at the port and maritime transportation and to identify which processes have the potential to reduce these.

FRAMEWORK OF THE STUDY

A study has been conducted to examine the environmental impact of improved import and export procedures in maritime trade.

The analysis focuses on selected garment products and their inputs that are traded through selected ports in Sri Lanka and Cambodia. The information was retrieved through:



Interviews with stakeholders: freight forwarders, customs clearing agents, exporters/importers, trucking companies, ports and terminals, shipping lines



Access to system data such as terminal, port, liner shipping operational data and customer invoice data from private sector project partners

DIGITISING GLOBAL MARITIME TRADE (DGMT)

The study was carried out as part of the DGMT project. In this project, customs authorities in Cambodia and Sri Lanka work together with the private sector to improve Customs' digital access to advance sea cargo information (Pre-Arrival Processing, PAP & Pre-Departure Processing,

PDP). The project is jointly financed by the Federal Ministry for Economic Cooperation and Development (BMZ) and Maersk under the develoPPP programme and implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

KEY FINDINGS

The baseline study suggests that if 60% of containers are processed prior to their arrival/ departure (PAP/PDP), yearly CO₂ emissions would be more than halved. Six specific processes were identified to benefit from more efficiency through PAP/PDP. If all of them being implemented, CO₂

emissions in Cambodia would decrease from 9300 to 3400 tn per year due to optimised procedures in and around the port. The following estimations are based on the assumption that 60% of containers are processed through PAP/ PDP:



- 128 tn CO₂

ELIMINATING UNNECESSARY TRANSPORT LINKS

With digital PAP, documents do not need to be presented physically at customs offices. CO₂ emissions caused by these transports could be cut by ca. 128 tn.

LESS RESHUFFLES OF IMPORT CONTAINERS

Long laytimes lead to high container stacks, requiring many reshuffles. PAP reduces import container laytime, increasing free yard capacity. This reduces container stacking height and reshuffling. By minimizing these gantry machine movements, CO₂ emissions could drop by ca. 1,462 tn.



- 1,462 tn CO₂

LESS RESHUFFLES OF EXPORT CONTAINERS

Late-arriving containers require additional reshuffling to match the vessel stowage plan, causing berthing delays. PDP is anticipated to cut these delays and thus minimising reshuffles and related gantry machine movements. CO₂ emissions from late arrivals could be decreased by ca. 186 tn.



- 186 tn CO₂

- 3,272 tn CO₂



LESS BERTHING DELAYS

Extended berthing time caused by late export container arrivals causes departure delays. This prompts vessels to increase steaming speed between ports to make up for lost time - raising emissions. With PDP, berthing delays related to late arrivals can be minimized, thus cutting up to 3,272 tn CO₂ emissions caused by increased steaming speed.

- 688 tn CO₂



REDUCED TRUCK TIME

Trucks line up as containers are released by port operators before customs issues cargo release notes. PAP facilitates seamless communication, enabling simultaneous release by port and customs. This could cut up to 688 tn CO₂ emissions.



- 232 tn CO₂

NO CUSTOMS INSPECTION & SEALING AT DRY PORTS

Cargo inspections currently occur at factories/warehouses before container packing. However, containers from distant factories require inspection at the nearest dry port; including stripping and restuffing. Shifting these processes from dry ports to seaports saves time, costs and transport related emissions. These emissions could be cut by 232 tn of CO₂.

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