Competitive Assessment of Container Port Development in Sri Lanka

C.A. Kavirathna [1], S. Hanaoka[2], T. Kawasaki[3]

Abstract

Owing to the strategic location of Sri Lanka with the world maritime networks, Colombo port is developed as a main transshipment hub port, given that majority of containers throughput being represented by transshipment cargo. Within this context, the expansion of Colombo port and the development of Hambantota port were initiated by Sri Lankan Port Authority. This paper discusses the container port developments related to Colombo and Hambantota ports considering both domestic and transshipment container handling. Total domestic laden container throughput is disaggregated into 25 districts in Sri Lanka for domestic cargo flow analysis. For the transshipment cargo flow analysis, twelve selected feeder ports in the Indian sub-continent are considered, which are grouped into three feeder markets namely, Indian East-coast, South-coast and West-coast feeder markets.

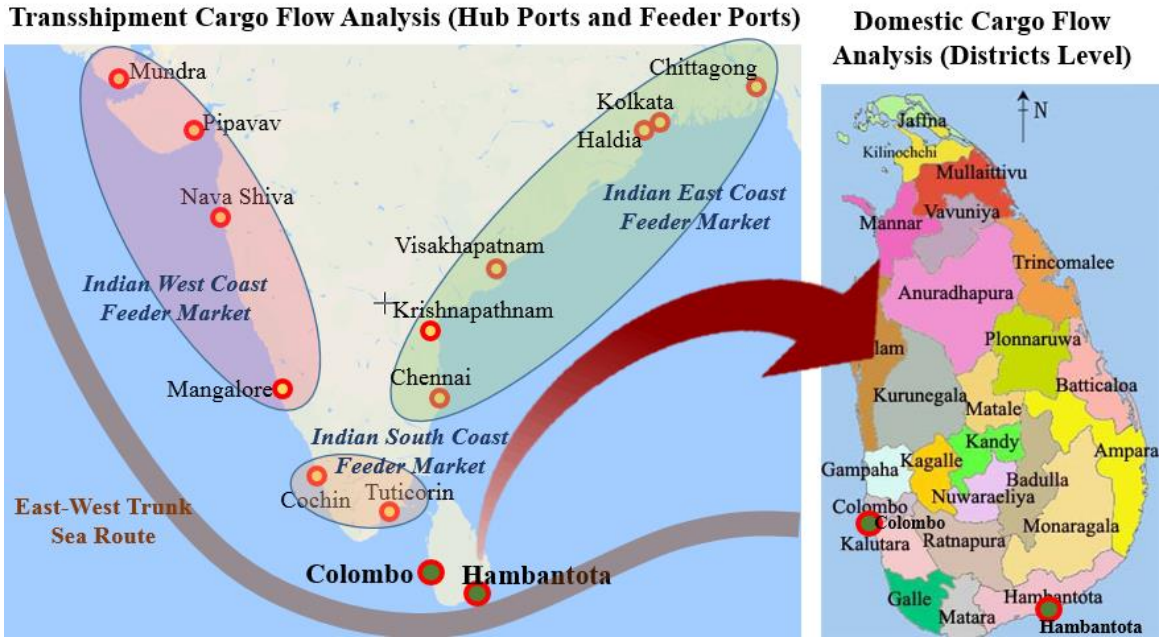

Figure 1: Study Area

A discrete choice model together with the generalized cost approach, is used for modelling the gateway port choice behaviours of local shippers/consignees considering basic container haulage cost, detention fee, transport time cost, waiting time cost, and terminal handling charges. Transshipment hub port choice of shipping lines is quantified considering the range of hub port selection criteria discussed under monetary, time, port traffic, location, operation and liner related categories, according to the context of current study. The autoregressive integrated moving average model is used to forecast container volumes in 2040, which is considered as the target year. The liner programming simplex optimization method is used to calculate the additional generalized cost of

shippers/consignees with the given slot capacity constraints at Colombo. Sensitivity analysis is carried out to analyse impacts from the split of liner services.

High attractiveness of Colombo port for domestic container handling and Hambantota for transshipment container handling, was revealed. Scenario analysis indicates the significance of accessing the road development and incentive scheme at Hambantota port to reduce generalized cost of local shippers/consignees. The impacts from additional waiting time for liner services and slot capacity constraints at Colombo port are analysed, where a significant negative impact on local shippers/consignees was revealed. Recommendations are made considering the impacts on local shippers/consignees, shipping lines, the port authority and maritime competitiveness of the country.

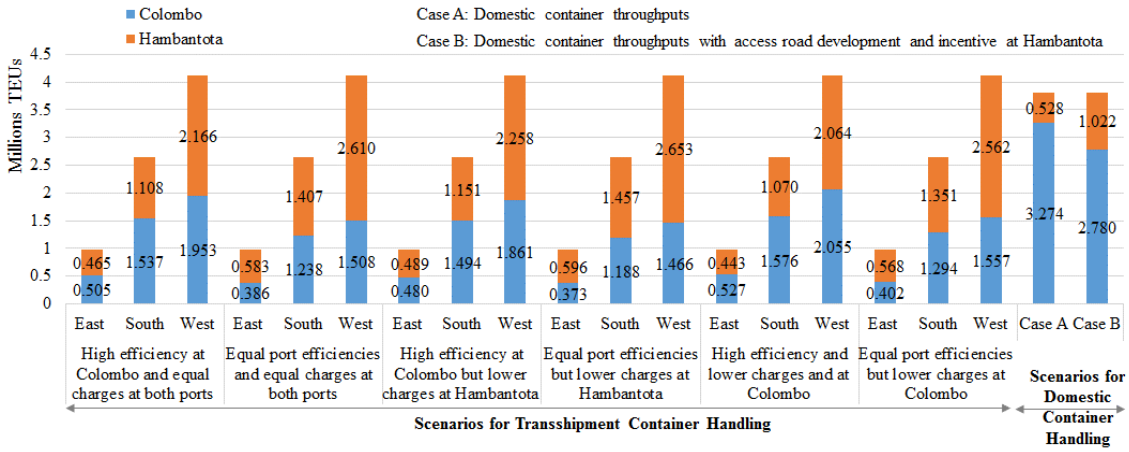

Figure 2: Domestic and Transshipment Container Handling

Keywords: Port Developments, Transshipment, Competition, Generalized cost

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1. Post Graduate Student, Department of Transdisciplinary Science and Engineering, Tokyo Institute of Technology, Japan, chathumi.k.aa@m.titech.ac.jp
2. Professor, Department of Transdisciplinary Science and Engineering, Tokyo Institute of Technology, Japan, hanaoka@ide.titech.ac.jp
3. Assistant Professor, Department of Transdisciplinary Science and Engineering, Tokyo Institute of Technology, Japan, kawasaki@ide.titech.ac.jp