

Evaluation of major ASEAN logistics infrastructure projects

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1. Purpose of research

In 2007, ASEAN formulated projects for logistics infrastructure as means of contributing to the development of the entire region as well as multiple countries within the region. These projects targeted roads (38), railroads (13), sea transport (20), airports (9), and logistics facilities (11). However, the selection of these projects was made qualitatively based on interview surveys and locational relationships with major transport corridors. This research project expands a multimode international cargo flow model that was developed by the authors to include land and sea transport for all of ASEAN, and applies it toward quantitative ascertainment of the effects the projects will have in reducing transport costs. It should be noted that the research was carried out under a transport logistics working group of the Japan-ASEAN Transport Cooperation project, which is led by the Ministry of Land, Infrastructure and Transport's Policy Bureau.

2. The model and envisioned scenario

The authors' model is a traffic assignment model that selects transport routes and ports for import/export based on cargo transport demand (OD cargo volume). The service levels of various infrastructure forms—such as roads, railroads, and ports and harbors—are inputted into the model, and link traffic volume, volumes handled by ports and harbors (as aggregated values), etc., are outputted.

Furthermore, future cargo transport demand for the year 2020 was separately predicted and inputted for simulation. This was done given the strong implication that projects will serve as investments for future economic development. Moreover, in the area of international land transport, consideration was given to a measure (Cross-Border Transport Agreement [CBTA]) intended to lessen resistance caused by cross-border transport, which is a major obstacle because it requires customs procedures, cargo transshipment, etc.

3. Simulation results

(1) Impact on arriving/departing cargo for ASEAN as a whole

It was estimated that the overall amount of reduction in transport costs for arriving/departing ASEAN cargo that would result from implementation of all projects and a regional CBTA would be approximately 15.7 trillion yen per year (equivalent to 8.8% of ASEAN's total cargo transport costs). Moreover, the benefits of land projects (62), sea transport projects (19), and CBTA were estimated to be approximately 8.0 trillion yen, 6.9 trillion yen, and 7.5 trillion yen, respectively. Differences in projected land transport flow arising from whether or not projects are implemented are shown in the figure below.

(2) Impact on individual countries

The table below shows the reduced transport cost benefit and rate of reduction against total transport costs for

arriving/departing cargo for each country. Looking at the by-country effects of each policy, there are some cases in which, due to circumstances in each country, almost no effect is generated. On the other hand, if all policies are implemented simultaneously, a reduction effect of at least 3 to 4% can be expected. In other words, it is suggested that simultaneous implementation of policies is important for ensuring that all countries receive the benefits of policies that are implemented in a relatively fair manner and for formulation of agreements on project implementation among countries of the region.

[Reference]

Shibasaki, Watanabe: "Higashi/Tonan Aja Chiiki ni okeru Maruchimodo Kokusai Butsuryu Moderu no Kochiku to Asean Butsuryu Infura Shisaku no Hyoka," NILIM Report No. 40, pg. 161, September 2009

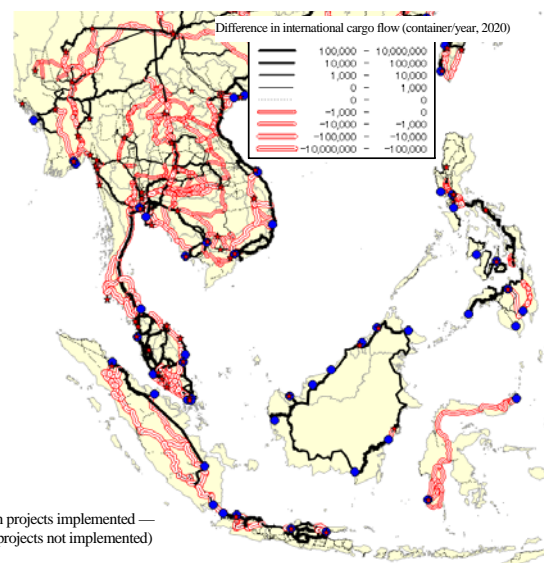


Figure: Differences in land transport flow when projects are implemented/not implemented

Table: Rate of transport cost reduction for arriving/departing cargo of each country

Country/region	When all measures are implemented simultaneously	When only sea transport projects are implemented	When only land transport projects are implemented	When only measures to reduce cross-border resistance are implemented
Japan	1.5%	0.9%	1.2%	0.5%
Philippines	3.7%	2.3%	2.5%	0.9%
Vietnam	12.3%	1.8%	7.1%	5.4%
Laos	22.6%	2.1%	-0.2%	19.2%
Cambodia	4.3%	0.3%	0.4%	2.8%
Thailand	12.9%	7.1%	10.6%	4.0%
Malaysia	6.6%	1.4%	2.2%	6.2%
Singapore	6.8%	2.0%	1.9%	4.2%
Myanmar	5.6%	1.3%	1.5%	3.6%
Indonesia	12.8%	8.3%	2.2%	5.7%
Brunei	9.0%	0.0%	0.9%	7.8%
World total	1.9%	0.6%	1.1%	0.9%
Arriving/departing ASEAN cargo	8.8%	3.9%	4.5%	4.2%