The Development Of Indonesia Archipelago Transportation

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Abstract:- An economic resources in the Regional of Archipelago Province has a commercial value and can support people's lives have not been optimally distributed to evolve as the market area. Availability of sea transport infrastructure is very limited. Some of the area looking for a solution using their own fishing boat or boats that are visually unsuistable used for passenger transportation. Logistic transport network for economic corridor from the main node materialized with support services infrastructure between National Activity Centre (NAC) and and Regional Activity Centre (RAC), although the integrated is limited, so it is not efficient network services between Local Activity Centre (LAC) to remote rural areas. Conditions of road transport infrastructure network are low performers, and even some roads have not been connected, and have influented to the logistics distribution to the district/city, district, rural and remote areas.

Keywords:- Economic resources, infrastructure, Integrated Transport and Connectivity.

I. INTRODUCTION

There are seven provinces in Indonesia Archipelago with thousands of islands that can be grouped as a unit cluster development in the form of island [1]. The seven provinces are Riau Islands and Bangka Belitung (Babel) Province is located in the western part of Indonesia (WPI). Province of North Maluku, Maluku, West Nusa Tenggara (NTB), East Nusa Tenggara (NTT) and North Sulawesi (Sulut) are located in the island province of eastern Indonesia (EPI). But in this description is limited only to observe how the development of transportation in the province of archipelago in Eastern Indonesia.



Transportation is a derived demand, typically do not recognize administrative boundaries, so that can not be severed on the basis of a particular administrative area. Growth in the transport sector is a barometer of economic growth and development of the region directly, and one of the cornerstones of success of national development [2].

The development of the transport sector Gross Regional Domestic Product (GRDP) is affected by economic conditions and population of an area. GRDP as a driver of economic activity and population

movements associated with the needs of passengers and goods, given the conditions and characteristics of the different regions in support of socio-economic activities of the community.

Most of the Archipelago-province deficit of commodities and basic materials, so it must come from outside the province islands with sea transport. The high price varieties, due to an imbalance between load factor and come back makes transport and logistics costs are still relatively high.

II. POTENTIAL MOVEMENT OF TRANSPORTATION

Economic conditions according to the GRDP and GRDP per capita, shows that the province of Riau Islands is the highest and the lowest of North Maluku, as in Table 1. This condition shows the economic disparity between WPI Islands province in the region is relatively high compared to the provincial island in the EPI.

No.	Islands Province	Population	GRDP (Billion USD.)	GRDP Per
		(1.000		Capita
		people)		(U.S. \$)
1	Riau Islands	1,588.6	56,833	3,913
2	Bangka Belitung	1,153.5	20,711	1,845
3	Maluku Utara	0,990.5	3,722	388
4	Maluku	1,358.3	6,381	495
5	West-NT	4,503.2	35,042	803
6	East-NT	4,704.8	21,211	468
7	North Sulawesi	2,249.3	27,405	1,242
Total (mean)		18,709.6	193,382.0	(1,308)
$N_{2,4,2}$ $D_{2,2,4}$ $1_{2,4,2}$ 2011 1 US ϕ $D_{2,4}$ 10.000				

Table 1. Population and GRDP Per Capita by Province [1]

Note: Population data, 2011, 1 U.S. \$ = Rp. 10.000, -

The mobility of the people is a need for public transportation, can be measured by one's ability to perform the movement, where the movement of goods to follow the direction of passenger movement, growth and population density, as well as the economy of a region. Below in Figure 1, is shown projected needs of passenger movement in the archipelago province of eastern Indonesia.



Figure 1. Passenger Projection, in eastern Indonesia

III. TRANSPORTATION ISSUES

Province of North Maluku and Maluku Islands: Accessibility is still low, sea transport network which became the backbone can not reach all areas of Islands Cluster [3]. Terminal facilities are limited, and not operating fleet specially designed to suit the needs of island cluster transport, including infrastructure and facilities that serve as a bridge crossing island cluster. It needs more provisions of transport for example pioneer land, sea, and air transport that can covered of all production centre until inland Regional [4].



Figure 2. Transportation Strength, Weakness, Opportunity, Treat (SWOT) conditions Maluku Islands

Archipelago province of East Nusa Tenggara and West: The road network and public transport services are still limited reach to a pioneer or rural areas, low-performance sea transport safety. Mobility of goods and passenger transport with a relatively reasonable rates is a priority. Means and sea and air transport infrastructure has not been a lot of inter-island transportation support (frequency), especially in certain seasons. The intensity of public transport services by land, sea, and air in serving the people felt still far from the needs and affect the smooth running of the system.

Archipelago Province of North Sulawesi: The road network is not fully reach or are in small islands, carrying capacity transport services have not been effective. Availability of transportation facilities by public (People or Traditional Shipping Transport), has not been adequate, not yet reached the level of adequacy and reliability of the safety aspects in accordance with the provisions of International Maritimes Organisation (IMO) standards. Required increase in transport services and air-sea pioneer in the Philippine archipelago in the border state.



Figure 3. SWOT Transportation Nusa Tenggara and North Sulawesi

According to the external and internal conditions, which need to be considered in the development of transportation in the archipelago province of prosperity and well-being such as the following below and in Figure 5.



Figure 4. Policy and Regional Infrastructure Strategy



Figure 5. Formulation of Policy and Transport Development Strategy

IV. STRATEGY DEVELOPMENT

The general of Transport Development Strategy: The concept of development in the area of transport development archipelago Province in improving the accessibility of internal groups access to the island and border areas between countries (Philippines, Timor Leste and southern Australia) is the backbone oriented to sea transport system, the strategy and development of multimodal transport between the sea and the integrated crossings. Road transport is a supporter of hinterland connectivity and access to all ports, airports and crossings or Ferry transport [5].



Figure 6. Sea Transportation Network in East Indonesia

To achieve harmonious growth in the scope of intra-region trade on the support (marine tourism, fishing, mining and farming in the sea), population mobility, and tourism, the development of transportation systems directed to: i) Supports realization Economic Corridor, Nusa Tenggara and Papua-Maluku and develop interactions between regions and island groups in the region external archipelago Province. ii) Supports external inter-provincial trade, export-import - province and from the islands as well as abroad. iii) Support the development of strategic sectors, namely agriculture, fisheries, industry, tourism, mining and mobility for the benefit of government, education, health and socio-cultural.

Intra Region in Support the Indonesia's Economic Development (MP3EI):

In order to realize harmonious inter-and intra-region growth, the development of transport infrastructure island province focused on i) the development of growth centers and hinterland regions in supporting economic corridor MP3EI interaction, ii). Increase accessibility to the central production area of marketing, and improve the distribution of goods and mobility of people. Here the concept of development MP3EI on Economic Corridor Transportation: Economic Corridor Development Nusa Tenggara and Bali; focused for improved safety and transportation services, particularly in the islands of Nusa Tenggara are oriented around to Kupang (East Island) and Mataram (Lombok Island), with utilization ferry transport that are continuous and regular frequency through a network of ground transportation in small islands between Java to the Ilwaki (Wetar Island).



Figure 7. Indonesia's Economic Development (MP3EI)

Sulawesi Economic Corridor Development: Improve pedestrian corridors nationwide service of eastern Sulawesi island in North Maluku to node crossings with Bitung, Luwuk, Salakan and Banggai. And developing areas oriented to the southeast Sulawesi, Wakatobi Islands and the surrounding areas, as well as North Sulawesi island and crossed the road network on the islands of Siau, Sangihe (Sangir), Talaud (Melonguane) and Miangas Islands and Marampit. Development services from Sulawesi to Nusa Tenggara and Java, through the islands of the southern Sulawesi through Selayar cross-Ruteng, Takalar-Bima, and Garongkong-Paciran (Lamongan). Embodiments of the international traffic road network connecting to the Philippines through the port in Miangas.

Maluku Islands-Papua Economic Development Corridor: Development of service corridors crossing in North Maluku Islands including, Kai Islands, Aru Islands and Islands as directed Wetar in Maluku Trans concepts include Trans Inter Islands:



Figure 8. Conception of Maluku Trans Inter-Islands

- Development services to reinforce pedestrian interaction of ground transportation to the islands in North Maluku to Bitung Sulawesi and Ternate through Taliabu Island to Banggai and Salakan and Luwuk, taking into account the increase in port traffic Bastiong and Bitung remember this, it is vital for both regions. Strengthen interactions in the ground transportation cluster of islands between North Maluku Sanana to the Bara's Gulf and Obi to Wahai. As well as the internal network interactions in cluster Sula Islands, Obi-Bacan, Morotai and Halmahera by Ternate and Tidore.

- Corridor development services to strengthen local pedestrian connection-oriented transport network ground to Ambon and Seram Island with surrounding small islands that have highways network. Improve the interaction of transport crossing archipelagoes of Air Nanang (Geser) on Seram Island to Gorong Islands, Kai Islands, Aru Islands, Tanimbar, Babar Islands-Leti-Moa-Kisar up to Ilwaki (Wetar) which continues up to East Nusa Tenggara.

- Corridor development services in the internal cluster Aru Islands, Islands Tanimbar and Kai Islands, as well as the zone around the islands in Kisar and Wetar. And proceed southring Network Transport of Dobo (Aru Islands) to Timika and Dobo to Fakfak and Kaimana. Development decisions need to consider aspects of the development of long-distance traffic is quite expensive in investment and cross-subsidies pioneer though opening is expected to be crossing a vital and strategic.

V. CONCLUSION

Lack of integration of transport modes, both intra-and inter-modal in areas that have modes of land transport, sea and air crossings and as a mode of superior, especially to reach the border, remote and rural. Poor condition of the marine transportation safety and comfort aspects. Distance of the small islands in the archipelago province varies, sea and air transport accessibility is necessary although the frequency of services to small island very limited.

Transportation service as a crossing pattern bridge between islands, in the coming years should contribute the maximum to give an integrated transportation services to maritime and roads transport.

Allocation of development financing archipelago province, will be based on the criteria the number of islands and a population should be weighted by the sea area (with more emphasis on the weight of the sea area of the

land area), as well as consideration of the position of the island in front of the state borders, so as to accelerate and expand economic development in the Archipelago Province.

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