



PRIORITY ANALYSIS OF ROAD DEVELOPMENT IN REGIONAL DEVELOPMENT IN SOUTH LABUHANBATU REGENCY

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ABSTRACT

The study aimed to determine the implications of road development priorities for regional development in South Labuhanbatu Regency. Primary data were obtained from the results of a questionnaire given to 13 respondents (for the AHP method) and 35 respondents for the community in terms of regional development. Data collection methods were carried out through interviews, questionnaires, and documentation studies. Data analysis was performed using the Chi-square test. Based on the criteria of benefits, the main benefit obtained from the construction of these priority roads is the smooth transportation of goods and people. Based on input, information, data, and analysis results, it shows that the construction of priority roads has significant implications for regional development in South Labuhanbatu Regency.

KEYWORDS: *AHP, Road Development Priority, Regional Development*

1. INTRODUCTION

South Labuhanbatu Regency is a division of Labuhanbatu Regency by Law Number 22 Year 2008 dated June 24, 2008 concerning the Establishment of South Labuhanbatu Regency. As a new autonomous region, the South Labuhanbatu Regency Government must improve itself and implement a well-planned program which is contained in the Labuhanbatu Selatan District Medium-Term Development Plan (RPJMD) and the Regional Government Work Plan (RKPD) including road infrastructure development aimed at realizing prosperity people and improve people's lives.

The Regional Medium-Term Development Plan (RPJMD) of South Labuhanbatu Regency for 2016-2021 and the Regional Government Work Plan (RKPD) for South Labuhanbatu Regency for 2020 do

not contain priorities for road development in South Labuhanbatu Regency. The Regional Development Planning Document of South Labuhanbatu Regency only contains the long target of road development for South Labuhanbatu Regency that will be achieved. So that in the preparation of the Draft Regional Regulation on Regional Revenue and Expenditure Budget (Ranperda APBD) of South Labuhanbatu Regency, the Road Development Activities set forth are the aspirations of the community which have been agreed to be priorities from the Village, District, Regency level development planning deliberations (Musrenbang) and the main ideas of the Regional People's Representative Council (DPRD) which is different every year which causes no policy on the direction of road development for South Labuhanbatu Regency. This makes the construction of roads unfocused each year and always varies.



Table 1
Regency Road Condition Data based on Surface Type

Surface type				Total (km)
Concrete (km)	Asphalt (km)	Gravel (km)	Dirt	
52,874	269,401	451,502	210,524	984,301

Source: road database 2018, Ministry of Public Works and Housing (PUPR), South Labuhanbatu Regency

The limited funds of the South Labuhanbatu Regency Government in running the wheels of government and realizing the programs that have been planned and contained in the Regional Development Plan Documents of South Labuhanbatu Regency,

including the road infrastructure development program, are very slow. The budget data for road infrastructure development in the South Labuhanbatu Regency Government (T.A 2017 to T.A 2020) can be shown as follows:

Table 2
Road Infrastructure Development Budget

No.	Fiscal year	Budget Ceiling	Description
1.	2017	75.203.420.900,-	APBD and Regional Revenue and Expenditure Budget – Revised (APBD-P) 2017
2.	2018	84.714.167.600,-	APBD 2018
3.	2019	93.047.825.391,-	APBD and APBD-P 2019
4.	2020	78.070.260.700,-	APBD 2020

Source: PUPR Office of South Labuhanbatu Regency

Considering the length of roads that must be managed by the South Labuhanbatu Regency Government while the funds for road infrastructure development are very limited, it is necessary to prioritize road construction so that the allocated funds have an impact on the development of South Labuhanbatu Regency.

2. RESEARCH METHODOLOGY

The research method used in this research is descriptive analysis in determining the priority of road development in South Labuhanbatu Regency. In this study, respondents for the criteria of benefits came from several South Labuhanbatu regency government agencies that have links to transportation, road construction planning consultants, and community leaders. Researchers combine elements of government and society as respondents so that the information collected is accurate, balanced and to avoid leading to opinion when respondents only come from elements of government. In previous studies, researchers have never found road users as respondents for the benefit criteria.

The criteria used as respondents from the elements of the Regional Apparatus Organization of the South Labuhanbatu Regency Government are as follows: hold a position at echelon III level, have experience in occupying positions at echelon III level

for at least 2 (two) years, have a minimum education level of Bachelor (S-1), hold the last position for at least 1 (one) year.

Those who become consultant expert respondents hold a position as team leader (activity manager), have a minimum Bachelor's (S-1) level of education, have at least 5 (five years of experience as a road infrastructure planning or supervision expert, have worked at least 3 (three years in the South Labuhanbatu Regency as a road enforcement planning or supervision expert.

3. LITERATURE REVIEW

Economic development is a multidimensional process that involves major changes to both changes in the economic structure, social changes, reducing or eliminating poverty, reducing inequality and unemployment in the context of economic growth (Todaro, 2003).

According to Miraza (2006), one of the key issues that must be considered in regional planning is the issue of transportation. Kamaluddin (2003) notes that transport is an essential element and functions as the lifeblood and the development of economic, social, political, and demographic mobility that follows developments in various sectors.

According to Sandy (1992), regional development is the implementation of national



development in an area that is adjusted to the area's physical and social capabilities and complies with relevant laws and regulations. Meanwhile, regional development is an act of developing a region or developing an area to increase the quality of welfare of residents, or to promote and improve something that already exists, according to Hadjisaroso (1994) (Jayadinata, 1992).

The main objective of regional development is to harmonize the various sectoral and regional development activities so that the use of the space and services found therein will optimally promote the activities of community life within the context of the expected goals and objectives of regional development. Optimal implies that it can be achieved at a satisfactory level of prosperity and in line with the socio-cultural and sustainable aspects of the environment (Ernan, Sunsun and Diah, 2011).

To drive the wheels of economic development, the role of infrastructure as a locomotive for national and regional development is essential. In macroeconomic terms, the provision of infrastructure services influences the marginal productivity of private resources, while the availability of infrastructure services affects the decrease of the cost of production in the context of microeconomics. Thus, both in the production process and in promoting the sale of goods and exports, their position is very critical (Permana, 2011; 1).

Article 1(1) of Regulation No 03/PRT/M/2012 of the Minister of Public Works on the Guidelines for the Determination of Road Functions and Road Status specifies that a road is a land transport infrastructure covering all parts of the road, including complementary buildings and equipment designed for traffic, above ground level.

Article 4(1) of Government Regulation No 34 of 2006 on roads states that public road administrators are obliged to make efforts to ensure that roads can be used to optimize the welfare of the population, in particular, to improve national economic growth, by keeping the overall transportation costs as low as possible.

Roads can be classified as follows, under Government Regulation No 34 of 2006 concerning roads:

Based on the function and role

1. Primary arterial roads, roads that connect adjoining first-tier cities or connecting first-tier cities with second-tier cities.
2. Secondary or sub arterials, a road connecting the primary area to the first secondary area or the secondary area connecting the secondary area to the secondary area or the secondary area to the second secondary area.
3. Primary collector, the road that connects the second and third city levels.

4. Secondary collector, a road that connects between the second center level or between the second and third centers.
5. Primary local road, the road that connects the parcel with the city at all levels.
6. Secondary local road, a road connecting the settlement with all secondary areas.
7. Primary environmental road, roads that connect between activity centers in rural areas and roads within rural areas.
8. Secondary environmental road, menghubungkan antarpersil dalam kawasan perkotaan.

Based on its carrying capacity

1. Class I roads, arterial roads accessible to motor vehicles including their cargo with a width of not more than 2,500 mm, a length of 18,000 mm, and a heaviest axle load greater than 10 tonnes, or Average daily traffic > 20,000 pcu.
2. Class II roads, arterial roads that can be passed by vehicles with a width not exceeding 2,500 mm, a length of 18,000 mm, and the heaviest allowable axle load of 10 tons, or average daily traffic < 20,000 pcu.
3. Class III-A roads, arterial or collector roads that can be traversed by vehicles and their cargo with a size of not more than 2,500 mm, a length of 18,000 mm, and an allowable axle load of 8 tons.
4. Class III B roads, collector roads that can be traversed by vehicles with their cargo with a width of not more than 2,500 mm, a length of 12,000 and the heaviest allowable axle load of 8 tons.
5. Class III C roads, local roads that can be traversed by vehicles of their cargo with a width of not more than 2,100 mm, 9,000 mm length, the heaviest allowable axis is 8 tons

Based on the obstacles

1. Freeway, marked with an intersection of the type of intersection found on the freeway, has a long-distance on each side of the road so that the traffic flow can travel without the flow being cut off by the flow coming from the left and right sides of the road.
2. Highway, marked by intersection of a level. This road generally has obstacles in terms of shape and geometry. Roads in the form of crossing each other have warning signs that cause the current to slow down or even stop for a moment.

C. Based on the management

1. National road, roads built by the central government.
2. Provincial road, roads built by the provincial government
3. Regional/City road, roads built by the Local Government (Regency/City).
4. Village Road, a road built by the Village Government



4. RESULT

Overview of South Labuhanbatu Regency

Geographically, South Labuhanbatu Regency is located between the coordinates 10 26'00 " - 20 15 '55' North Latitude and 99 04' 00 " - 100 26'00 " East Longitude with an altitude of 0 to 500 meters above sea level, with an area of 3,116 km² (311,600 Ha), of the total area of South Labuhanbatu Regency of 162,549 Ha or around 52.17% are oil palm plantations which include: 121,628 Ha managed by plantation companies and around 40,921 Ha managed by smallholder plantations.

The boundary of the South Labuhanbatu Regency is to the north by Labuhanbatu Regency, to

the south, to the west by North Padang Lawas Regency, to the east by the Riau Province.

South Labuhanbatu Regency, like most other areas in the North Sumatra region, includes areas with tropical climates. This area has two seasons, the rainy season and the dry season. The dry season and the rainy season are shown by the number of rainy days and the volume of rainfall in the month the season occurs. During 2018, the average rainy day in South Labuhanbatu Regency was 14.17 days per month with an average rainfall of 220 mm.

South Labuhanbatu Regency consists of five sub-districts, with an area as follows:

Table 3
Sub-district area in South Labuhanbatu Regency

No.	Sub-district	Capital	Area (km ²)	Ratio to Regency Area (%)
1	Sungai Kanan	Langgapayung	484,35	15,54
2	Torgamba	Aek Batu	1.136,4	36,47
3	Kotapinang	Kotapinang	482,4	15,48
4	Silangkitang	Aek Goti	303,7	9,75
5	Kampung Rakyat	Tanjung Medan	709,15	22,76
Total			3.116	100,00

Source: South Labuhanbatu Regency in Figures, 2019

Road Network in South Labuhanbatu Regency

South Labuhanbatu Regency has 984,301 km of Regency roads with a total of 286 sections according to the Decree of the South Labuhanbatu Regent Number: 600/209 / DPU-LS / 2016 dated 17 November 2016 concerning the Stipulation of the Road Status of South Labuhanbatu Regency.

Based on the priority stages carried out, of the 286 road segments in South Labuhanbatu Regency, 8 (eight) selected roads were selected to be managed: (1) Padang Ri - Pantan - Aek Hije - Batu Ajo, (2)

Simaninggir - Asam Jawa, (3) Sp.Tolan - Tanjung Medan - Tanjung Mulia - Sidomulyo - Podorukun - Boundary of Riau Province, (4) Sp. Sungai Pinang - Tasik - Batu Ajo - Beringin Jaya, (5) Sp. Asam Jawa - Sumberjo -Pangarungan - Sp. Bunut - Batang Saponggol - Teluk Panji - Sidomulyo, (6) Sp. Sukajadi - Sapilpil - Sp. Teluk Rampah - Bangai - Sp. Limun - Rasau - Haramania - Gariang Sordang - Batu Ajo, (7) Cikampak - Bus II - Kp. Baru - Pinang Damai - Sp. Areca nut (8) Sp. Tugu Cikampak - Aek Raso - Torganda - HTI Sei Kebara - Cindur.



Table 4
Description of Priority Road for South Labuhanbatu Regency

No	Segment road	Road Condition			Type of surface
		Road Length (km)	Managed length (km)	Unmanaged length (km)	
1	Padang Ri - Panton - Aek Hije - Batu Ajo	11,072	3,692	7,380	Concrete / asphalt / gravel / dirt
2	Simaninggir - Asam Jawa	7,700	0,370	7,330	Concrete / gravel / dirt
3	Sp.Tolan - Tanjung Medan - Tanjung Mulia - Sidomulyo - Podorukun - Batas Provinsi Riau	35,575	18,120	17,455	Concrete / asphalt / gravel
4	Sp. Sungai Pinang - Tasik - Batu Ajo - Beringin Jaya	21,265	4,892	16,373	Concrete / asphalt / gravel / dirt
5	Sp. Asam Jawa - Sumberjo - Pangarungan - Sp. Bunut - Batang Saponggol - Teluk Panji - Sidomulyo	43,183	21,076	22,107	Concrete / asphalt / gravel / dirt
6	Sp. Sukajadi - Sapilpil - Sp. Teluk Rampah - Bangai - Sp. Limun - Rasau - Haramania - Gariang Sordang - Batu Ajo	22,237	10,701	11,536	Concrete / gravel / dirt
7	Cikampak - Bis II - Kp. Baru - Pinang Damai - Sp. Pinang Awan	18,523	9,073	9,450	Concrete / asphalt / gravel
8	Sp. Tugu Cikampak - Aek Raso - Torganda - HTI Sei Kebara - Cindur	49,993	5,966	44,027	Concrete / asphalt / gravel
Total		209,548	73,890	135,658	

Source: Secondary Data Processing Results

Information is collected from each road section, which is a development priority, based on Table 4. 135,568 km is the length of the road which has not been built. The construction of these roads, as an industrial area for agriculture and oil palm, would increase agricultural economic activity in South Labuhanbatu Regency.

Implications of Road Priority Development in South Labuhanbatu Regency on Regional Development

Priority Road Development functions to increase economic activity and generate new

economic points from the areas connected by these road sections. The construction of these roads will have implications for regional development as seen from (1) Regional Potential Development (RPD), (2) Strengthening of Oil Palm Agriculture (PPKS), Strengthening Industrialization of Local Commodities (PIKL), and Smooth Transportation of Goods and People (KTBO). Based on the results of the questionnaire collected from respondents against these 4 (four) criteria (attachment 4) then tested using the Chi-Square test with the results as presented in Table 5.

Table 5
Respondent data to be performed Chi - Square test

Respondent Value	RPD (fo ₁)	PPKS (fo ₂)	PIKL (fo ₃)	KTBO (fo ₄)	Total
5	20	10	12	24	66
4	14	20	20	11	65
3	1	4	2	0	7
2	0	1	1	0	2
Total	35	35	35	35	140



From Table 5, the Chi-Square Test is carried out by looking for the value of f_n (expected frequency), f_o (observed frequency) which then obtained the value

of $f_o - f_n$, $(f_o - f_n)^2$ and the value of Chi quadrat (X^2) as in Table 6.

Tabel 6
Hasil Uji Chi - Square

f_{n1}	f_{n2}	f_{n3}	f_{n4}	$f_{o1} - f_{n1}$	$f_{o2} - f_{n2}$	$f_{o3} - f_{n3}$	$f_{o4} - f_{n4}$	$(f_{o1} - f_{n1})^2$	$(f_{o2} - f_{n2})^2$	$(f_{o3} - f_{n3})^2$	$(f_{o4} - f_{n4})^2$
16,5000	16,5000	16,5000	16,5000	3,5000	-6,5000	-4,5000	7,5000	12,2500	42,2500	20,2500	56,2500
16,2500	16,2500	16,2500	16,2500	-2,2500	3,7500	3,7500	-5,2500	5,0625	14,0625	14,0625	27,5625
1,7500	1,7500	1,7500	1,7500	-0,7500	2,2500	0,2500	-1,7500	0,5625	5,0625	0,0625	3,0625
0,5000	0,5000	0,5000	0,5000	-0,5000	0,5000	0,5000	-0,5000	0,2500	0,2500	0,2500	0,2500

$$X^2 = \sum \frac{(f_o - f_n)^2}{f_n}$$

$$X^2 = \frac{(f_{o1} - f_{n1})^2}{f_{n1}} + \frac{(f_{o2} - f_{n2})^2}{f_{n2}} + \frac{(f_{o3} - f_{n3})^2}{f_{n3}} + \frac{(f_{o4} - f_{n4})^2}{f_{n4}}$$

$$X^2 = 1,8754 + 6,8188 + 2,6284 + 7,3552$$

$$X^2 = 18,68$$

Based on Table 6, it is obtained that the Chi-Square Test value is 17.2848, then compare the calculated Chi-Square with the Chi-Square table at a certain degree of freedom (DF) and a certain level of significance.

$$DF = (r - 1) \times (c - 1)$$

where r = row and c = column

$$DF = (4 - 1) \times (4 - 1) = 9$$

In the Chi-Square table with a critical mass of 0.05 and a degree of freedom (DF) 9, the value is 18.68. Because of the Chi-Square statistic > Chi-Square table, there is a significant relationship between Priority Road Development and regional development in South Labuhanbatu Regency. This result reinforces previous research that priority road development has a significant relationship to development in an area. The construction of road infrastructure will make the wheels of economic growth which in turn will increase higher economic activity. In the process, road infrastructure can reduce transportation costs and result in increased demand for goods and services. Road infrastructure development has a role, among others, as a catalyst between the production, market, and final

consumption processes and has an important role as social overhead capital. Road infrastructure development is also capable of creating jobs and having a multiplier effect on the industry.

The Development of Priority Roads in the South Labuhanbatu Regency will connect the two economic poles. Both in Kotapinang which is the center of the economy with the sub-district capital in South Labuhanbatu Regency as the sub-center of the economy. The main objective of road construction is to realize development justice by the potential that can improve the community's economy and foster new economic points and facilitate the distribution of goods from one region to another so that market prices throughout the South Labuhanbatu Regency are reasonable. So that the people of South Labuhanbatu Regency can meet their economic, social, educational, and health needs.

5. CONCLUSION

After analyzing the road development priorities of South Labuhanbatu Regency based on input, information, data, and analysis results, it shows that priority road development has significant implications for regional development as seen from Regional Potential Development (PPW), Strengthening of Oil Palm Agriculture (PPKS), Strengthening Industrialization Local Commodities (PIKL) and Smooth Transportation of Goods and People (KTBO).

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