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ANALYSIS OF INFRASTRUCTURE PLANNING FOR THE SLUM AREA OF LEKOBALO VILLAGE GORONTALO CITY

Arfan Utiarahman 1,*
Mohammad Yusuf Tuloli 2 ,
Kevin Saliko 1,
1 Civil Studies Program, Faculty of Engineering, Gorontalo State University
Jl Jendral Sudirman No 6 Gorontalo City
* Corresponding author: 1 kevin_s1sipil2019@mahasiswa.ung.ac.id, 2 mohammad.tuloli@ung.ac.id, 3 arfanutiarahman@ung.ac.id

Abstract:
The quality of residential areas and housing in various regions of Indonesia is experiencing a decline, both in urban and rural settings. However, issues regarding inadequate settlement areas still persist. Based on observations, apart from problems with the condition of housing structures, there are also challenges related to the availability of facilities and infrastructure. Incorrect utilization of these amenities is also a contributing factor to the decreasing housing quality in the settlement area of Lekobalo Village. So it is necessary to analyze the infrastructure planning of slum areas in Lekobalo Village.¬¬¬¬ This study aims to determine the infrastructure planning of the slum area and formulate an analysis of the calculation of the budget plan for the cost of handling the slum area of Lekobalo Village. This type of research is research that combines quantitative and qualitative. Data collection techniques, field observations and interviews. The results showed that residential buildings / houses have almost the same characteristics classified as poor, the condition of infrastructure and utility facilities, namely environmental road conditions, some locations are not served by environmental roads in accordance with technical provisions, drinking water supply conditions are not sufficient drinking water, drainage conditions of environmental drainage networks are unable to drain water runoff, wastewater management conditions do not have household wastewater management, and waste management conditions, the absence of waste collection facilities. The calculation of the cost budget plan, hot mix road planning, yields Rp. 3,380,002,558.71 (three billion three hundred eighty million two thousand five hundred and fifty-eight point seventy thousand seven hundred and fifty-one). The

solution to handling slum areas is to improve the quality of the residential environment with restoration and resettlement focused on improving residential buildings, infrastructure and utility facilities.

Keywords: Infrastructure, Slums, Planning

INTRODUCTION

The quality of the living environment in various regions of Indonesia has decreased, including in urban and rural areas. This phenomenon is especially visible in dense residential areas such as urban slum areas. This decline can be seen from inefficient land use, less aesthetic building designs, and a lack of appropriate environmental facilities. (Banteng, 2015)Several areas in Gorontalo City still show uncontrolled residential growth. As a result, it appears that some residents live in places that should not be habitable, such as around rivers, drainage channels, lake shores, and even on mountain slopes that have a high risk of disasters.

Lekobalo Village is included in the administration of West City District, Gorontalo City, in the Gorontalo City Slum Decree No: 134 / 23 / However, when looking at aspects of housing, facilities, utilities, and residential facilities and infrastructure, there are discrepancies with the expected quality standards and availability.

Several initiatives that have been implemented by the Gorontalo City government to tidy up slum residential areas in Lekobalo Village, Kota Barat District, Gorontalo City, involve various projects, both physical and non-physical. These steps include installing paving blocks, making paths around the environment, building a drainage system, providing education regarding sanitation waste management, material assistance to improve the condition of uninhabitable houses, and training in the creative economy sector to improve the local community's economy.

However, despite this intervention, there are still areas that are not well maintained in the Lekobalo Village residential area. This is because there is no concrete program aimed at dealing with the problem of slum settlements on a regional scale. For this reason, this research will focus on investigating infrastructure plans in slum areas in Lekobalo Village and formulating handling strategies to fully overcome the problem of slum areas in the Lekobalo Village residential area which is located in Kota Barat District, Gorontalo City.

(Mahsyari, 2017). Explain that infrastructure is facility physically created as effort fulfillment public connection with availability electricity, water, systems transportation , water availability , disposal waste and rubbish , as well various service others related with condition social existing economy in the middle public . (Dimasyahputra, 2020). In understanding technical , infrastructure interpreted as asset physique looks arranged shaped system so that Can fulfil service need public . So from that, infrastructure is part from mutual facilities and infrastructure connected and not Can separated Because has connected in something system .

(Mahsyari, 2017). Structure basics , equipment, or the building is a must built so system social and economic public Can works with Good called as system infrastructure .

Marwan inside (Mahsyari, 2017) put forward there is four component The main thing that exists in the infrastructure that consists from : (1) transportation consisting of from roads , railroads, tracks green , transportation sea , public transport , highways, airports , lanes bicycles , and sidewalks. (2) Public utilities include electricity , sewage , water, gas, and various facility electronic . (3) Public services consisting of from protection from floods , waste management , services health like House sick , service public like libraries , and also services extinguisher fire . (4) National service, among others relate with defense , banking and monetary , frequency allocation and postal systems .

P3KT in (Mahsyari, 2017), part from component infrastructure is road cities , planning and rejuvenation city , development city new , drinking water , waste water and waste management , drainage , control flood , house rent , village improvements , housing , and market area improvements .

Regional area seedy in (Simanuntak, 2022) interpreted as neglected aspect in growth city . This matter seen from characteristics social demographics area seedy , like dense population , conditions an environment that doesn't worthy , and lack thereof infrastructure education , health , and services social . Growth area seedy can linked with the urbanization process that is not under control .(K, 2020) interpret area seedy covers place slum living , income the low, the dangerous environment, and the full life with always dangerous threatened disease and death .

Slum's is legal environment occupied However condition the environment No worthy made as place stay . Slum's interpreted as a place area stay legitimately slum

Good from facet settlement or the housing . Based on dictionary sociology , Slum's is area resident with economic status low which building place stay No healthy and not fulfil condition For lived in . (Budy & Fredy, 2016).

Here below This characteristics of slum areas described by Rikhwanto in (Suparto, 2014) includes :

Condition dense population , whether caused Because urbanization or its height number birth .

The low income resident residents _ stay there so cause poverty .

Built house as place stay made of from material former ones that don't worthy used as material making House .

Sanitation and low condition marked health with it's dirty easy environment and disease spread .

Service limited city such as toilets, clean water , and also streams electricity as well as facility important other .

Appearance physical region does not regular so that page House No looks and order untidy as well as No taken care of .

Still a lifestyle traditional and rustic .

Stand on top illegal land or problematic .

His height number crime and deviance behavior .

(Sari & Ridlo, 2021) Appearance settlement congested residents in urban areas triggered by a number of various reasons . Based on factors that , you can identified a number of reason main formation settlement No regular . Some of them is factor economics , geography, psychology , and environment phyique . There are 2 classifications causal factors the emergence of slum areas that is factor direct and also factor No direct . Strategic Slum Area Management Judging from Infrastructure :Repair Physique

Area Layout Arrangement

Redevelopment

Land Division

Transfer Towards New Location

RESEARCH METHODS

In research this , done analysis planning structure area kumuh with use approach mixture . Research methods descriptive quantitative and descriptive qualitative combined in a way sequentially in approach This . In step First , approach quantitative used For collect data, while in step second , method qualitative applied. Approach mixture is type approach research based on philosophy pragmatism . Approach This suitable For inspect object experience or artificial , where researchers role as instruments and uses instrument as tool measurement . Deep data analysis approach This nature inductive (qualitative) and deductive (quantitative) (Sugiyono, 2014).

Mixed Method , also known as Mixed Method, is a research strategy that combines two approaches research , ie approach qualitative and approach quantitative . Sugiono explained that approach mixed , which is also known as method combined, is a research strategy that combines elements method quantitative and qualitative in a research process single . The purpose behind merger This is For get more data holistic , while increase its reliability , validity and objectivity (Sugiyono, 2014).

Target quantitative aim For identify linkages between variables , testing hypothesis , develop generalizations that have mark in predict , provisional approach qualitative used For find pattern interactive , developing connectedness theory , describe complex reality , and get understanding will more meaning in (Mustaqim, 2016)

For identify where the data comes from can obtained , obtained understood based on type necessary information . Study This requires two types information , ie information main as well as information addition . Information main is information submitted in a way verbal , movement body , or actions carried out by individuals who own credibility , deep matter This is subject research (informant), related with moderate variables researched (Arikunto, 2013). Secondary data according to (Sari & Zefri, 2019) is the data obtained No through interaction direct with subject study. Secondary data sources refers to the data obtained from the owning entity connection with study the . Secondary data is also possible obtained through analysis related literature _ with topic location and topic relevant conversation .

Data collection was carried out through use technique observation and implementation interview . Observation explained by Nasution in (Sugiyono & Lestari, 2021) Disclose that observation is Foundation for all discipline knowledge

. Information collected through diverse device sophisticated , possible clear observation to very small object or located very far away . Interview method used as method dig up good data as stage studies introduction For identify necessary problem researched , as well For get more insight deep from respondents (Sugiyono, 2019).

RESULTS AND DISCUSSION

Building Residential / Home

By general , condition House condition buildings on each villages in the planning area own characteristics almost The same . Parameters used For distribution condition building in category good , medium and bad is as following :

Condition building good : wall wall painted , ventilated OK , ceiling plywood , house roof from roof tiles and zinc in condition OK , floor ceramics , have distance with House other .

Condition building medium : floor plastered , walls painted walls or plastered , ventilated OK , ceiling plywood , house roof from roof tiles and zinc in condition OK , have distance with House other .

Condition building bad : walls wood , ventilation currently or No There is ventilation , ceiling webbing wood or No ceiling , house roof from roof tiles and zinc in condition bad , floor land , no have distance with House other .

Based on the criteria above , average conditions buildings in the planning area classified bad . Some of the buildings along network road main ward own condition Bad build , however quality environment around need noticed . Especially availability infrastructure utility general need handling priority .

Condition Infrastructure and Utility Facilities

Infrastructure and utilities urban consists from various network support life like network transportation , electricity , clean water networks , networks telephone , network drainage as well as sanitation and waste .

Table 1 . Condition Infrastructure and Utility Facilities Ward Lekobalo

Condition	Condition Terms / Standards	Condition Field	Solution
Environmental Road Conditions : Main Street / Jalan Usman Isa Concrete rebate road area RT 2 hill Part way lower road main or section RT 1	Classification walking in the neighborhood housing area hierarchy road : • Local secondary I wide walk 3 – 7 meters with a road shoulder of 1.5 – 2 meters. • Local secondary II wide walk 3 – 6 meters with a road shoulder of 1 – 1.5 meters. • Local secondary III wide road 3 meters with a road shoulder of 0.5 meters. • Environment I is wide walk 1.5 – 2 meters with a road shoulder of 0.5 meters. • Environment II is wide road 1.2 meters with a road shoulder of 0.5 meters.	• Walk with width 3.5 M no have a shoulder and be place parking vehicle public . • Main road Already border with House inhabitant . Concrete rebate road area RT 2 hill too narrow and steep so that No Can passed vehicle Walk along RT 1 often flood Because close by with river the problem possible flooding _ up to 1-2 months .	• Provision special land parking vehicle community in several spots spread across 4 RWs in the sub-district Lekobalo • Application rule border road . Repair road with add wide road to 1.5 M Making road inspection in parts border rivers , and manufacturing embankment .
Condition Provision of Drinking Water	100% population served , residents get access to safe drinking water No cloudy , colored , and tasted . Community drinking water needs at the location housing area or minimum settlement of 60 liters/person/ day .	Not enough drinking water needs because topography area to be built _ is in the hills No available access to drinking water worthy and available a number of people on the plains low use well the drill is not worthy .	So that society Can access drinking water with Requirements 60 liters / person / day : • Available a spring called “ Butu Spring ” which is common consumed citizens , with see potency This Can made design of the Butu spring area , tub container , distribution pipe to public . • Available spring outside _ area and network available , with see potency This Can made provision tub container For distributed to public plain tall .
Condition Drainage	There isn't any puddle flood >10 Ha. If There is puddle , high The average	Unable _ flow water runoff so give rise to puddle , because drainage Already many are damaged and partial public	Solution for the handler Can done with method :

Condition	Condition Terms / Standards	Condition Field	Solution
	inundation is >30 cm and the inundation duration is >2 hours. Frequency incident floods >2 times a year	Lekobalo for RT 1 which is in the plains low and partial the house that woke up nearby border river so that runoff river Can inundate House inhabitant .	• Making embankment along border river • Provision drainage environment For direct water flow from existing settlements _ in the hills , • Repair damaged drainage • Drainage outlet • Provision water pump for handle flood .
Condition Waste Water Management	80% percentage served population _ adequate wastewater system . _ _ Own : • RT toilet/ latrine /MCK • Septic tanks	Existing waste water problems _ in the sub-district Lekobalo , no There is waste water management House stairs , society still defecating in the open , no There is latrines , and septic tanks.	Solution for the handler Can done with method : Make ipal local tank septic biofillers 10 cubic capacity , Septic tank biofiller is installation where is the domestic wastewater processor ? all over system packed in one tangka.
Condition Management Waste	Availability facility subtraction rubbish in urban areas by 20%, and 70% percentage resident served For transportation rubbish in each house . Need infrastructure waste : • House (5 people) has place rubbish . • RW (2500 people) has a TPS with cart rubbish dimensions 2 m^3, and tub rubbish small dimensions 6 m^3. • The subdistrict (30,000 people) has a polling station with cart rubbish dimensions 2 m^3, and tub rubbish large 12 m^3 .	Absence _ facility collection trash , accessibility For car carrier rubbish difficult because condition topography existing sub - district in hills and areas plain low often flood , transport fleet rubbish Still less , so most society burn trash , even throw away rubbish in the channel drainage and rivers .	Solution for the handler namely : • Procurement facility collection rubbish , • Procurement of TPS3R, • Road construction environment For access vehicle rubbish , • Procurement of transportation fleet rubbish To use increase service to public .

Calculation Plan Budget Cost

Planning for Hot Mix Roads at River Borders

The cost of building a Hot Mix Road with a length of 1500 M in Lekobalo Village includes earthwork costs, granular work costs, as well as asphalt work costs during construction. Table 3 shows the results of the overall budget plan used in the construction of the Hot Mix Road at the River Board Border, Lekobalo Village.

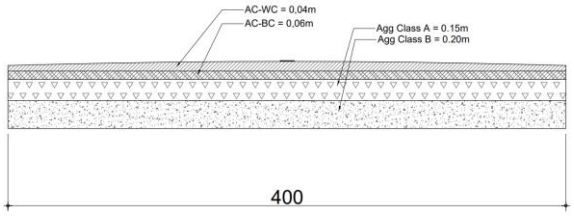

Figure 1. Hot Mix Road

Table 2 . Hot Mix Street Recap

No. Payment Points	Description	Unit	Estimation Quantity	Rupiah Unit Price	Total Rupiah Price
a	b	c	d	e	f = (dxe)
DIVISION 3. EARTH WORKS					
3.1.(1a)	Ordinary Digging	M 3	2,100.00	11,981.31	25,160,756.81
3.1.(1b)	Structure Excavation	M 3	450.00	17,575.94	7,909,171.30
3.2.(1A)	Hoard Normal from source excavation	M 3	450.00	97,104.71	43,697,120.88
Total Job Price DIVISION 3					76,767,048.99
	DIVISION 5. GRAINED PAPER				
5.1.(1)	Class A Aggregate Foundation Layer	M 3	900.00	387,756.05	348,980,447.59
5.1.(2)	Class B Aggregate Foundation Layer	M 3	1,200.00	332,788.62	399,346,347.10
Total Job Price DIVISION 5					748,326,794.68
	DIVISION 6. ASPHALT PAPER				
6.1 (1)(a)	Absorption Layer Binder - Asphalt Liquid	Liter	3,600.00	20,095.61	72,344,208.63
6.1 (2)(b)	Adhesive Coating - Asphalt Emulsion	Liter	1,800.00	23,637.08	42,546,736.79
6.3(5a)	Laston Lapis Aus (AC-WC)	Tons	519.84	1,950,562.07	1,013,980,188.07
6.3(6a)	Laston Intermediate Layer (AC-BC)	Tons	779.76	1,828,816.02	1,426,037,581.53
Total Job Price DIVISION 6					2,554,908,715.0
				Total	3,380,002,558.7
three billion three hundred and eight tens million two thousand five hundred and fifty eight coma seven tens thousand seven hundred and fifty One					

CONCLUSION

Condition slums in the area Lekobalo look at it from building residence / house own almost characteristics The same classified bad , condition infrastructure and facilities utility that is condition road environment part location No served with road suitable environment with provision technical , availability of drinking water No sufficient , channels nearby drainage environment No capable drain excess rainwater , and not _ There is effort management waste water from House stairs , and conditions management waste No exists facility collection rubbish . Calculation plan budget costs , planning the hot mix road produces Rp. 3,380,002,558.71 (Three Billion Three Hundred and Eight Ten Million Two Thousand Five Hundred and Fifty Eight Point Seven Ten Thousand Seven Hundred and Fifty One) Treatment solutions area seedy that is increase quality environment settlement with restoration and settlement back focused on improvement building housing , infrastructure and facilities utility

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