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Analysis of Rusunawa Development in the West Surabaya Area for Low-Income Communities (LIC) Reviewed from the Point of Investment and Finance

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Abstract: The provision of rental flats (Rusunawa) in the city of Surabaya is still constrained by location and high prices. The Surabaya City Government plans to provide high-rise housing to meet the need for decent and cheap housing for low-income communities. Analysis is needed to determine the needs of Rusunawa in the West Surabaya area through the applicant analysis process, unit and block needs, analysis of potential asset land, analysis of Rusunawa design, and investment analysis of basic rental rates for Rusunawa. The analysis results show that 6 blocks of Rusunawa are needed with 342 units per block and 10 floors per block with potential land locations on the Persil 19 and GS 172/U/1991 asset land. Technical and non-technical recommendations for the construction of Rusunawa in the West Surabaya area can be said to be feasible and the ideal rental rate for residents of Rusunawa in the West Surabaya area is IDR 343,000.

Keywords: Rusunawa, Low Income Communities, Tariffs, Investment, Spatial Planning

INTRODUCTION

Housing is a basic human need, but in urban areas such as the city of Surabaya, limited land conditions and high population numbers cause house prices to become increasingly expensive and many residents with limited abilities are unable to access livable homes and environments (Dirgawinata, 2020). The city of Surabaya, as the second largest city in Indonesia, has become the center of attraction for immigrants to live and work, causing limited land and increasing population every year (Alifna & Ariastita, 2021). Lower class settlements in the city of Surabaya tend to have high density, limited infrastructure and facilities and create a portrait of urban slums. The Surabaya City government's policy to deal with this problem is to relocate dense slum dwellings to vertical dwellings (rusunawa or rental flats) in the context of urban land efficiency (Vialita & Rahmawati, 2020).

The provision of rental flats (Rusunawa) by the Surabaya City Government is still constrained by location, so an analysis is needed regarding the provision of flats in the West Surabaya area (Alifna & Ariastita, 2021; Rahma et al., 2020). The number of applicants for Rusunawa in the City of Surabaya tends to increase every year, so it needs to be balanced with the provision of housing in the form of Rusunawa in the City of Surabaya. The Surabaya City Government has a policy to build low-rise flats with rental prices no more than IDR 100,000 to meet the need for cheap decent housing for Low Income Communities (LIC) in the City of Surabaya. The number of Rusunawa applicants in Surabaya City tends to increase every year (Tvonenews.com, n.d.). The average increase in the number of applicants was 10.3% and the increase in the number of applicants identified as LIC was 26.2%. Referring to this data, it can be said that the increase in the number of applicants and LIC needs to be balanced with the provision of housing in the form of Rusunawa in the city of Surabaya.

The provision of high-rise housing is needed to optimize land use and meet the needs of decent and cheap housing for the residents of the city of Surabaya, especially Low Income Communities (LIC) (MZ et al., 2021; Octavionesti & Mardiansjah, 2017). This is in accordance with government regulations which state that to meet the housing needs of low-income people in metropolitan cities, high-rise Simple Flats (Rusunawa) need to be built (Sutrisno & Prabawati, 2019). Analysis regarding the provision of Rusunawa in the West Surabaya area is needed to provide recommendations for the development of Rusunawa in the West Surabaya area (Perda Kota Surabaya Nomor 4, 2011).

METHODOLOGY

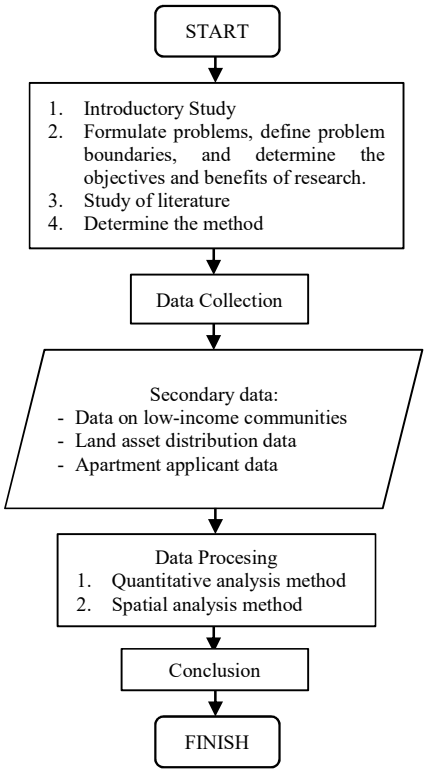


Figure 1. Riset Diagram

Research variable

The research variables used to help carry out this research are:

Table 1. Research variables

No.	Variable	Definition
1.	Number of Low Income Communities (LIC)	Number of low-income people (LIC) in units of people/households per sub-district in Surabaya City
2.	Number of applicants for Rental Flats (Rusunawa) in Surabaya City	Number of applicants for rental flats (rusunawa) in units of person/household per sub-district in Surabaya City

No.	Variable	Definition
3.	Distribution of land assets of the Surabaya City government	The spatial data is in the form of a shapefile with information about the land assets of the Surabaya City government
4.	Surabaya City RTRW and RDTR spatial pattern plan	The spatial data is in the form of a shapefile with information on the spatial allocation in accordance with the 2014-2034 Surabaya City RTRW and the 2018-2038 Surabaya City RDTR

Source: Analysis results

Collection Data

In this research, data collection was obtained from secondary data from the Surabaya City Regional Development Planning, Research and Development Agency and the Surabaya City Public Housing and Settlement Area and Land Services Department.

Method Analysis Data

After taking data, furthermore done analysis of the applicant's LIC for the rusunawa, analysis of the needs for rusunawa units and blocks, analysis of potential land for rusunawa development, design analysis (number of floors, units and blocks of rusunawa), and analysis of basic rental rates for rusunawa.

RESULTS AND DISCUSSION

Rusunawa Needs Analysis

The number of flat rental applicants verified by LIC in 2022 will be 2,052. Based on this data, the needs for units, blocks and floors of the flat can be calculated. Based on data on the distribution of flats in West Surabaya and the standards of the Ministry of Public Works for the single typology, the minimum net area per unit is 24 m ^{2} (Permen PUPR Nomor 7, 2022). Therefore, the typical optimal block dimensions are 18m x 66m = 1,188 m2 with a design of 38 units on one floor divided into 2 rows so that there are 19 units per row. This means that in 1 floor, the length obtained is 66m, obtained from the length of 19 units plus the need for stair and lift space and 9m of free space.

Number of Applicants	=	2,052 applicants
Standard unit area	=	Width x Length
	=	3m x 8m
	=	24 m ^{2}
Corridor width	=	2 meters
1 floor wide	=	Length 2 units + corridor width
	=	(8m x 2) + 2m
	=	16m + 2m
	=	18m
1 floor long	=	Width 19 units + length of supporting space
	=	(3m x 19) + 9m
	=	57m + 9m
	=	66m
1 floor area	=	Width 1 floor x Length 1 floor
	=	18m x 66m
	=	1,188 m ^{2}
Unit size on 1 floor	=	Number of units on 1 floor x area per unit
	=	38 x 24 m ^{2}

	=	912 m^2
Remaining space for support	=	1 floor area – unit area on 1 floor
	=	1,188 m^2 – 912 m^2
	=	276 m^2
Number of Floors x Number of Blocks	=	Total unit requirement / Number of units on 1 floor
	=	2,052 units / 38 units
		54
The optimal number of floors is 1 block of flats	=	9 floors for units, and 1 floor (ground floor) as supporting facilities
Number of blocks	=	Number of Floors x Number of Blocks / Optimal number of floors is 1 block of flats
	=	54 / 9 floors
	=	6 blocks

Based on the calculations above, the need for flats in West Surabaya is 6 blocks of flats with the number of floors per block is 10 floors and the number of units per floor is 38 units.

Analysis of Potential Land for Rusunawa

After calculating the needs of the Rusunawa, the next thing to do is an analysis of the potential land that can be built on the Rusunawa according to the needs that have been calculated. Aspects that must be fulfilled regarding potential land for Rusunawa development include the condition of Asset Land belonging to the Surabaya City government, the minimum area of land that can be built according to the number of Rusunawa required, spatial analysis of potential land for Rusunawa development, and accessibility to potential land for Rusunawa development

A. Analysis of Land Assets Owned by the Surabaya City Government

Because the budget used for the construction of this Rusunawa is APBD/APBN, the Rusunawa must be built on land assets belonging to the Surabaya City Government. Based on data on the distribution of land assets in West Surabaya according to the Surabaya City Regional Financial and Asset Management Agency, there are 2,459 land asset registers.

B. Spatial Analysis of Potential Land for Rusunawa Development

Analysis of potential land for Rusunawa in West Surabaya was carried out by identifying land assets of the Surabaya City Government that have potential for the development of Rusunawa in West Surabaya that meet the space designation in accordance with the spatial plan in the 2018-2038 Surabaya City RDTR which can be developed as Rusunawa, namely the Sub Zone designation. Low Density Houses, Medium Density House Sub Zones, High Density House Sub Zones, and Other Public Service Facilities, namely 668 land asset registers.

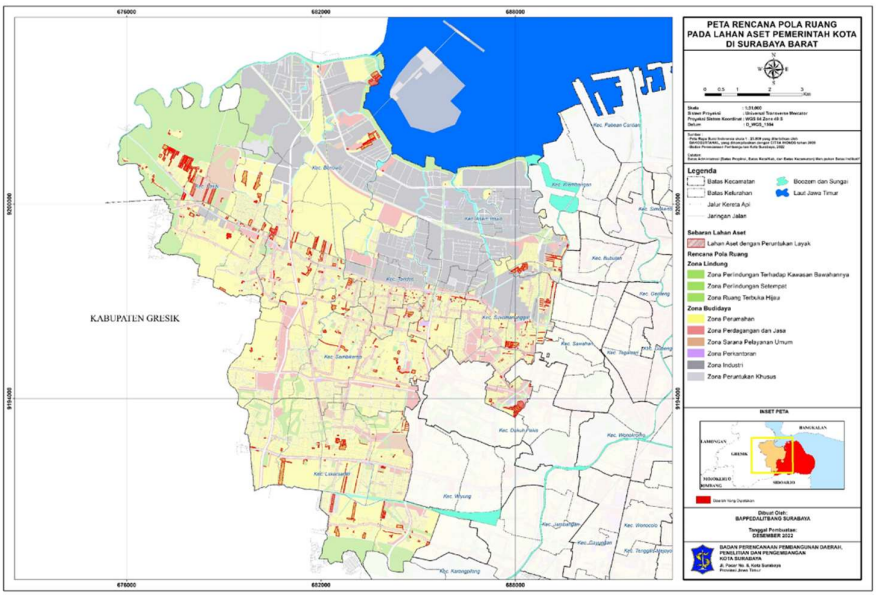


Figure 2. Map of Spatial Pattern Plans on Asset Land in West Surabaya
(Source: Bappeko Surabaya, 2022)

C. Minimum area of land that can be built on flats

After that, from the 668 land asset registers, sorting was carried out based on land area and existing land use conditions to obtain land that had sufficient area or more than 10,000 m^2 for the Rusunawa development plan and the existing land use was still empty or open land. Based on this, asset land was obtained in West Surabaya which could be proposed for planning the development of Rusunawa, namely:

Table 2. Proposed Land Assets for Rusunawa Development in West Surabaya

No.	UP	Ward	Subdistrict	Asset Name	No. Simbadda Register	Area (m^2)
1.	UP XI Tambak Osowilangun	Spring	Benowo	Plot 19	12345678-1991-3674-1	± 14,000
2.	UP XII Sambikerep	Acne Tripe	Pakal	GS 172/U/1991	12345678-1991-6614-1	± 14,000
3.	UP XII Sambikerep	Benowo	Pakal	Petok 944 Parcel 29 SI 34 SI (GS/118/U/91)	12345678-1991-6501-1	± 43,150

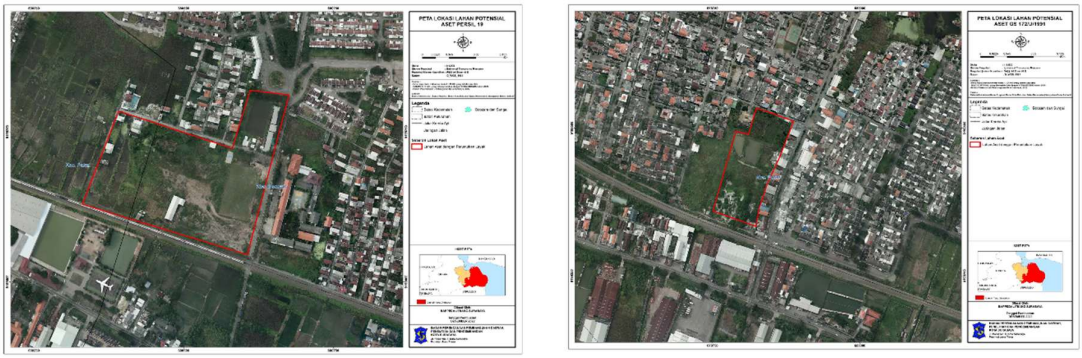
Source: Analysis Results, 2022

D. Accessibility to Potential Land for Rusunawa Development

Referring to the three locations above, 2 locations were then chosen, namely Persil 19 and GS 172/U/1991. The basis for this selection is based on the accessibility conditions and the condition of the facilities and infrastructure around the land. Judging from accessibility, the third location, namely GS/118/U/91, is further from the center of residents' activities compared to the other two locations. Judging from the condition of facilities and infrastructure such as clean water, electricity, elementary schools, etc., the third location has not been well served because of its remote location.

The land assets of Persil 19 and GS 172/U/1991 are close to schools, namely SDN Babat Jerawat I, SDN Babat Jerawat II, SDN Sememi I, and SMAN 12 Surabaya. The width of the road on the Persil

19 asset land is + 8 meters, while on the GS 172/U/1991 asset land it is + 7 meters. Even though it has a larger area of land, the condition of the asset land is still better for Persil 19 and GS 172/U/1991 so that the two asset land locations are more visible to be used as a plan for the Rusunawa development.



(a) (b)

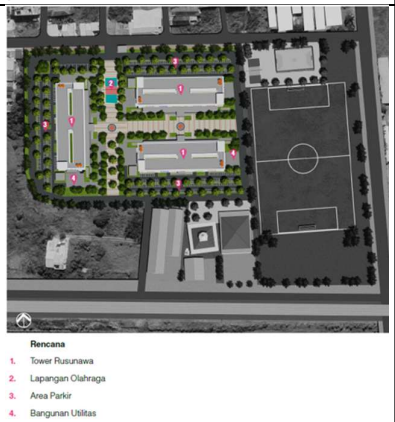
Figure 3. Map of Land Asset Parcel 19 (a) and Land Asset GS 172/U/1991 (b)
(Source: Bappeko Surabaya, 2022)

Analysis of Rusunawa Technical Recommendations

After determining the potential asset land for Rusunawa development, an analysis of the Rusunawa development was carried out on these 2 asset lands. Technical and non-technical recommendations for flats are carried out on potential land as a result of previous analysis. The analysis was carried out based on aspects of spatial regulations according to the Surabaya City RTRW and RDTR, technical development plans, and the socio-culture of the surrounding community. The explanation of the analysis is explained in the following table:

Table 3. Analysis of Technical and Non-Technical Recommendations for Rusunawa

No	Aspect	Location Plan	
		Plot 19	**GS 172/U/1991**
1.	**SPATIAL PHYSICAL**		
	Suitability of carrying capacity and spatial layout of the City of Surabaya	Allocation of space in the RTRW, RDTR and PZ of Surabaya City Zone: Public Service Facilities (SPU) - UP XI Tambak Oso Wilangun Sub-Zone: SPU-7. Activities: Flats (Rusun)	Allocation of space in the RTRW, RDTR and PZ of Surabaya City Zone: Housing (R) - UP XII Sambikerep Sub-Zone: High Density Housing (R-2) Activities: Flats (Rusun)
	Easy accessibility and city circulation, as well as close to activity centers	Located in the middle of a residential area, close to the center of activity	Located in the middle of a residential area, close to the center of activity

No	Aspect	Location Plan	
		Plot 19	**GS 172/U/1991**
	Basic infrastructure network: clean water, waste and waste management, electricity and communications	Land is ready to build. Infrastructure and settlement facilities are quite adequate	There are paved roads. The network of residential infrastructure and facilities has developed
2.	**TECHNICAL DEVELOPMENT PLAN**		
	Technical operational development	Simple design and typical flooring, can be implemented in a short time and can be used as soon as possible	Simple design and typical flooring, can be implemented in a short time and can be used as soon as possible
	Layout (*layout*)		
	Development process	Easy material flow to finishing according to the technology used. Most of them use local materials and prefab which is more efficient in implementation	Easy material flow to finishing according to the technology used. Most of them use local materials and prefab which is more efficient in implementation.
3.	**COMMUNITY SOCIAL CULTURE**		
	Population	Jlh LIC = 6,638 people Jlh KK LIC = 2,114 % KK LIC = 17.94%	Jlh LIC = 4,851 people Jlh KK LIC = 1,525 % KK LIC = 19.09%
	Availability of adequate housing	% of LIC families living in livable houses = 88.60% Availability of flats in West Surabaya 1,107 units (2,201% of total LIC in West Surabaya)	% of LIC families living in livable houses = 80.89% Availability of flats in West Surabaya 1,107 units (2,201% of total LIC in West Surabaya)
	Acceptance of Affected Residents	The location is in an area that has not yet been built up, but is quite close to landed housing and residential infrastructure such as education and the Koramil office.	The location is in the neighborhood middle class landed housing sufficient medium density open to change.

Source: Analysis Results, 2022

Technically, the land in these two assets is suitable and ready to be built. Both in terms of space allocation in accordance with the Surabaya City RDTR 2018-2038, accessibility conditions and infrastructure networks are ready. Apart from that, the construction process is equipped with a building

layout and supporting infrastructure and is in a location that is easy to reach for construction or material flow to finishing the work in accordance with the technology used. The socio-cultural conditions of the community are also supportive because of the need for housing by LIC residents and the location is close to a residential area so residents support the plan.

Analysis of Ideal Rental Rates

After analyzing the needs of the Rusunawa, potential land for the Rusunawa, and technical and non-technical recommendations for the development of the Rusunawa, an analysis of the ideal rental rates was carried out based on the cost of developing the Rusunawa, calculating income, calculating expenses, time period, and terminal value in the Rusunawa development plan. Based on the results of the analysis of flat needs and potential land for flats that has been carried out, the recommended model and type of flat is obtained, namely flats with a height of 10 floors with dimensions adjusted to the results of the previous analysis. The ideal rental rate uses a social rental rate because it is intended for Low Income Communities (LIC). Once the ideal rental rate is known, the feasibility mechanism for constructing the Rusunawa is then calculated using the NPV and Net B/C methods (Riskijah, 2013).

A. Rental Rate Analysis

The main target of the plan to build a 10-story flat in Surabaya is the LIC (Low Income Communities) group. The rental rate group used is the social rental rate group in accordance with Minister of Public Works and Public Housing Regulation Number 7 of 2022 concerning Implementation of Housing Development Assistance and Provision of Special Housing. The social rental rate is a rental rate that is determined based on the calculation of monthly maintenance costs divided by the number of sarusunawa. The formula for social rental rates is

Maximum Social Rental Rate	=	Operational Costs + Maintenance Costs + Maintenance Costs
Minimum Social Rental Rate	=	Maintenance Fee + Maintenance Fee

Based on the formula above, then:

Maximum Social Rental Rate	=	1,541,211,998 + 76,500,000 + 559,815,450
	=	2,177,527,448
Minimum Social Rental Rate	=	76,500,000 + 559,815,450
	=	636,315,450

Based on the calculation above, you can then calculate the monthly rental rate per unit, namely:

Maximum rental rate per month per unit	=	Maximum social rental rate / 12 months / 342 units
	=	2,177,527,448/12/342
	=	530,587
Minimum rental rate per month per unit	=	Minimum social rental rate / 12 months / 342 units
	=	636,315,450/12/342
	=	155,048

Rental Rate per Month per Unit = The average of the maximum rental rate with the minimum rental rate per month per unit

= (Maximum rental rate per month per unit + Minimum rental rate per month per unit) / 2

= (530,587 + 155,048) / 2

= 342,817 rounded up to 343,000

The monthly rental rate per unit is IDR. 343,000.- for residential and Rp. 530.00 ,- (maximum rental rate) for a commercial unit with the same area. The total rental cost for a year is IDR. 1,528,512,000 ,- .

B. Net Present Value (NPV) Analysis

After knowing the estimated income value of the flat which is calculated from the rental income of the residents, an NPV analysis can be carried out by looking at the income value of IDR 1,528,512,000,- and the expenditure value obtained from the operational costs, care and maintenance of the 10-story Rusunawa building of IDR 2,177. 527,448,-. To calculate NPV, a time period is needed.

The time period or period in NPV analysis is used to determine the time period used in calculating the expected cash flows from the project. This is important because the cash flow from the project will change over time. If the time horizon is too short, the project may not appear economically viable because the expected cash flows will not be high enough. However, if the time horizon is too long, the project may appear economically viable because the expected cash flows will be higher. The time period for the construction of this high-rise flat is set at 10 years.

Table 4. Net Present Value (NPV) Calculation Analysis

Year	Total income	Discount Factor	PV of Income	Total Expenditures	Discount Factor	PV Expenditures	NPV
	a	b	c = axb	d	e	f = dxe	
0		1.00			1.00		
1	1,528,512,000.00	0.95	1,459,200,000.00	2,177,527,448.00	0.95	2,078,785,153.22	- 619,585,153.22
2	1,604,937,600.00	0.91	1,462,682,577.57	2,286,403,820.40	0.91	2,083,746,454.30	- 1,240,649,029.96
3	1,685,184,480.00	0.87	1,466,173,466.77	2,400,724,011.42	0.87	2,088,719,596.20	- 1,863,195,159.39
4	1,769,443,704.00	0.83	1,469,672,687.46	2,520,760,211.99	0.83	2,093,704,607.17	- 2,487,227,079.10
5	1,857,915,889.20	0.79	1,473,180,259.50	2,646,798,222.59	0.79	2,098,701,515.54	- 3,112,748,335.14
6	1,950,811,683.66	0.76	1,476,696,202.84	2,779,138,133.72	0.76	2,103,710,349.71	- 3,739,762,482.00
7	2,048,352,267.84	0.72	1,480,220,537.46	2,918,095,040.41	0.72	2,108,731,138.13	- 4,368,273,082.67
8	2,150,769,881.24	0.69	1,483,753,283.37	3,063,999,792.43	0.69	2,113,763,909.34	- 4,998,283,708.64
9	2,258,308,375.30	0.66	1,487,294,460.66	3,217,199,782.05	0.66	2,118,808,691.94	- 5,629,797,939.93
10	2,371,223,794.06	0.63	1,490,844,089.44	3,378,059,771.15	0.63	2,123,865,514.60	- 6,262,819,365.08

Source: Calculation Results

Based on the calculation results above, the NPV value obtained in year 10 is -Rp 6,262,819,365.08 (NPV less than 1), so the project is less efficient, which means there are other, more profitable uses for the resources needed by the project. Therefore, it is necessary to intervene to increase the NPV value. The intervention that will be carried out in this research is the provision of subsidies from the City Government to cover part of the Rusunawa's expenses.

C. Net Present Value (NPV) Analysis with 20% Subsidies and 40% Subsidies

The intervention to increase the NPV value is with a 20% subsidy and a 40% subsidy of expenditure. The subsidy is provided in the 2nd year. An example of NPV calculation with a 20% subsidy and a 40% subsidy is explained as follows

Table 5. NPV Calculation Analysis with 20% Subsidies

Year	Total income	Discount Factor	PV of Income	Total Expenditures	Discount Factor	PV Expenditures	NPV
	a	b	c = axb	d	f	f = fxg	
0		1.00			1.00		
1	1,528,512,000.00	0.95	1,459,200,000.00	2,177,527,448.00	0.95	2,078,785,153.22	-619,585,153.22
2	1,604,937,600.00	0.91	1,462,682,577.57	1,829,123,056.32	0.91	1,666,997,163.44	-823,899,739.10
3	1,685,184,480.00	0.87	1,466,173,466.77	1,920,579,209.14	0.87	1,670,975,676.96	-1,028,701,949.29
4	1,769,443,704.00	0.83	1,469,672,687.46	2,016,608,169.59	0.83	1,674,963,685.74	-1,233,992,947.56
5	1,857,915,889.20	0.79	1,473,180,259.50	2,117,438,578.07	0.79	1,678,961,212.43	-1,439,773,900.49
6	1,950,811,683.66	0.76	1,476,696,202.84	2,223,310,506.98	0.76	1,682,968,279.76	-1,646,045,977.41
7	2,048,352,267.84	0.72	1,480,220,537.46	2,334,476,032.32	0.72	1,686,984,910.50	-1,852,810,350.46
8	2,150,769,881.24	0.69	1,483,753,283.37	2,451,199,833.94	0.69	1,691,011,127.47	-2,060,068,194.57
9	2,258,308,375.30	0.66	1,487,294,460.66	2,573,759,825.64	0.66	1,695,046,953.55	-2,267,820,687.46
10	2,371,223,794.06	0.63	1,490,844,089.44	2,702,447,816.92	0.63	1,699,092,411.68	-2,476,069,009.70

Source: Calculation Results

Based on the calculation results above, the NPV value obtained in the 10th year is -Rp 2,476,069,009.70 (NPV less than 1), so the project is less efficient, which means that a 20% subsidy cannot cover the negative NPV value. Therefore, it is necessary to intervene in the form of additional subsidies to increase the NPV value.

Table 6. NPV Calculation Analysis with 40% Subsidies

Year	Total income	Discount Factor	PV of Income	Total Expenditures	Discount Factor	PV Expenditures	NPV
	a	b	c = axb	f = d - e	g	h = fxg	
0		1.00			1.00		
1	1,528,512,000.00	0.95	1,459,200,000.00	2,177,527,448.00	0.95	2,078,785,153.22	-619,585,153.22
2	1,604,937,600.00	0.91	1,462,682,577.57	1,371,842,292.24	0.91	1,250,247,872.58	-407,150,448.24
3	1,685,184,480.00	0.87	1,466,173,466.77	1,440,434,406.85	0.87	1,253,231,757.72	-194,208,739.19
4	1,769,443,704.00	0.83	1,469,672,687.46	1,512,456,127.19	0.83	1,256,222,764.30	19,241,183.97
5	1,857,915,889.20	0.79	1,473,180,259.50	1,588,078,933.55	0.79	1,259,220,909.32	233,200,534.15
6	1,950,811,683.66	0.76	1,476,696,202.84	1,667,482,880.23	0.76	1,262,226,209.82	447,670,527.17
7	2,048,352,267.84	0.72	1,480,220,537.46	1,750,857,024.24	0.72	1,265,238,682.88	662,652,381.75
8	2,150,769,881.24	0.69	1,483,753,283.37	1,838,399,875.46	0.69	1,268,258,345.61	878,147,319.51
9	2,258,308,375.30	0.66	1,487,294,460.66	1,930,319,869.23	0.66	1,271,285,215.17	1,094,156,565.00
10	2,371,223,794.06	0.63	1,490,844,089.44	2,026,835,862.69	0.63	1,274,319,308.76	1,310,681,345.69

Source: Calculation Results

Based on the calculation results above, the NPV value obtained in the 10th year is IDR 1,310,681,345.69 (NPV more than 1). The NPV starts to have a positive value in the 4th year is IDR 19,241,183.97 so that the plan to build a high-rise flat (10 floors) in Surabaya can be accepted using a subsidy of 40%.

D. Benefit Cost Ratio Analysis

Benefit-Cost Ratio (BCR) is the ratio between the expected economic benefits of a project or investment and the costs required to execute the project. BCR is used to evaluate the economic feasibility of a project and to compare different projects.

To calculate BCR, the formula used is:

BCR = Total Economic Benefits / Total Costs

Total economic benefits are the sum of all cash flows expected from the project, including revenues and savings. In this case, the total economic benefit is the PV value of income. Total costs are the sum of all costs required to execute a project, including procurement, construction and operations costs. In this case, the total cost is the PV of expenditure. So the BCR calculation is as follows:

Total Economic Benefits	=	Total PV Income from year 1 to year 10
	=	IDR 14,749,717,565.06
Total cost	=	Total PV of Expenditures from year 1 to year 10
	=	IDR 13,439,036,219.38
BCR	=	Total Economic Benefits / Total Costs
	=	IDR 14,749,717,565.06 / IDR 13,439,036,219.38
	=	1.1

Based on the calculation above, the BCR value is 1.1 (BCR more than 1) thus indicating that the project is economically feasible because the expected economic benefits are greater than the costs required.

CONCLUSION

After conducting research on the Analysis of Rusunawa Development in the West Surabaya Area for Low-Income Communities (LIC) in terms of investment and spatial planning, the following conclusions can be drawn:

1. The need for rental flats (Rusunawa) in the West Surabaya area is that with a total of 2.052 applicants, 6 blocks of flats are needed with 342 units per block and 10 floors per block.
2. Potential land for the development of Rusunawa in the West Surabaya area with assessment variables, namely identification of potential asset land in West Surabaya, suitability to spatial planning, and land area requirements, is in the asset land Persil 19 in UP XI Tambak Osowilangun and GS 172/U/1991 in UP XII Sambikerep
3. Technical and non-technical recommendations for the development of flats in the West Surabaya area in terms of spatial physics, technical development plans and socio-cultural conditions of the community. After reviewing these three aspects, the two potential locations for the development of flats can be said to be feasible
4. The ideal rental rate for Rusunawa residents in the West Surabaya area is IDR 343.000,- which is the social rental rate. Meanwhile, the economic mechanism for the construction of a 10-story flat is feasible, it is necessary to use a subsidy calculation of 40% so that the NPV value is more than 1 and the BCR value is also more than 1.

REFERENCES

Alifna, A. N., & Ariastita, P. G. (2021). Penentuan Lokasi Rusunawa di Kawasan Surabaya Timur. *Jurnal Teknik ITS*, *9*(2). https://doi.org/10.12962/j23373539.v9i2.55504

Dirgawinata, V. C. (2020). *PENETAPAN COST PER UNIT JASA SEWA KAMAR INDEKOS DENGAN METODE FULL COST (Studi Kasus pada Salah Satu Usaha Rumah Indekos Baru di Kota Bekasi)* [UNIVERSITAS ATMA JAYA YOGYAKARTA.]. http://e-journal.uajy.ac.id/id/eprint/22733

MZ, S. F., Ariastita, P. G., & Septanaya, I. D. M. F. (2021). Tipologi Rumah Susun Sederhana Sewa (Rusunawa) di Kota Surabaya. *Jurnal Teknik ITS*, *9*(2). https://doi.org/10.12962/j23373539.v9i2.54718

Octavionesti, A. A., & Mardiansjah, F. (2017). PENANGANAN PERMUKIMAN KUMUH MELALUI PEMBANGUNAN RUSUNAWA: STUDI KASUS RUSUNAWA KALIGAWE, KOTA SEMARANG. *Riptek*, *II*(1).

Perda Kota Surabaya Nomor 4, (2011).

Permen PUPR Nomor 7, 54 (2022).

Rahma, N. A., Hardiana, A., & Rahayu, P. (2020). PEMILIHAN LOKASI RUMAH SUSUN

SEDERHANA SEWA: STUDI KASUS RUSUNAWA PUTRI CEMPO, SURAKARTA. *Desa-Kota*, *2*(2). https://doi.org/10.20961/desa-kota.v2i2.34404.158-174

Riskijah, S. S. (2013). ANALISA FINANSIAL PADA PROYEK PEMBANGUNAN RUSUNAWA (STUDI KASUS PADA PROYEK PEMBANGUNAN RUSUNAWA X DI SURABAYA). *PROKONS Jurusan Teknik Sipil*, *7*(2). https://doi.org/10.33795/prokons.v7i2.49

Sutrisno, A. M., & Prabawati, I. (2019). IMPLEMENTASI PERATURAN WALIKOTA SURABAYA NOMOR 12 TAHUN 2018 TENTANG TARIF SEWA RUMAH SUSUN SEDERHANA SEWA (RUSUNAWA) …. *Publika*.

Tvonenews.com. (n.d.). *Antrean Hunian Rumah Susun di Surabaya Mencapai 11 Ribu Pendaftar*. Tvonenews.Com. https://www.tvonenews.com/daerah/jatim/155980-antrean-hunian-rumah-susun-di-surabaya-mencapai-11-ribu-pendaftar?page=2

Vialita, E., & Rahmawati, D. (2020). How Liveable is living in public housing? a Liveability measurement at low-income apartment of Kompleks Rumah Susun Sombo, Surabaya. *IOP Conference Series: Earth and Environmental Science*, *452*(1). https://doi.org/10.1088/1755-1315/452/1/012129

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