

Technical Assistance in Identifying and Structuring Slum Infrastructure in Danukusuman Area, Serangon, Surakarta City

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ABSTRACT

Surakarta is a city located in Central Java province and is one of the largest cities in Central Java Province. The high population density will be a problem in the future that needs to be considered. The slums in Surakarta city are scattered in several urban villages the slum area is Danukusuman area of 8,178 Ha, It consists of Danukusuman Village covering 1,173 Ha, Joyotakan Village covering 5,753 Ha, and Pasar Kliwon Village covering 1,252 Ha. The typology Danukusuman area is a slum area located on the banks of the Bengawan Solo River with buildings that are classified as illegal. On the other hand, this area faces quite complex problems including unorganized housing conditions, narrow neighborhood roads, poor drinking water supply and sanitation conditions, poor drainage systems, and lack of provision of other infrastructure facilities. This community service aims to identify slums to obtain slum characteristics and the level of slums. In addition, it makes a plan for infrastructure arrangement. The method is done through observation and scoring based on slum identification standards. The results obtained in this Community Service are the characteristics of slums and the level of slums and the design of infrastructure arrangement planning in the Danukusuman area.

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INTRODUCTION

The development of a city has an impact on the activities of the city community (Astuti et al., 2021), (Pramantha et al., 2021). Rapid population growth without the addition of facilities, facilities, infrastructure, and arrangement of residential areas can form settlements into dense slums (Istikasari et al., 2014), (Legarias et al., 2020). Slums are neglected residential neighborhoods that experience a decrease in the quality of infrastructure, socio-economic and cultural services, and very minimal infrastructure (Halim, 2020), (Puspita & Djunaidi, 2017), (Wijaya, 2016), (Nurdiansyah, 2018). Population density will be a problem in the future so it needs to be considered, with limited land in urban areas, especially for low-income residents occupying buildings that are not suitable for occupancy (Sakdiah & Rahmawati, 2020), (Qonita et al., 2020).

Surakarta is one of the most populous cities in Central Java. The population density in the city is quite high and slums are spread across several urban villages with a total urban slum area of 135,971 Ha and a slum area of 135,971 Ha (SK Walikota Surakarta, 2020). The Danukusuman area covers an area of 8,178 hectares, comprising 1,173 hectares of Danukusuman, 5,753 hectares of Joyotakan, and 1,252 hectares of Pasar Kliwon. The existence of slums in an area must exist and cannot be avoided due to the development of an area/city. (Aly et al., 2020).

The problems of slum areas in this area are quite complex, including the condition of houses that have not been organized, the condition of environmental roads is not adequate, the condition of the drinking water network is still not well served, there are puddles in the environment, and the condition of drainage is almost not functioning because it is damaged and not maintained. Household wastewater disposal and drainage installations are not yet separate. There are no garbage dumps and no transportation of garbage to the landfill (TPA), causing people to litter. In addition, there is no fire protection service that can cause existing buildings to be prone to fire and road infrastructure is damaged so that the neighborhood roads look unfit.

This community service aims to identify slums so as to obtain slum characteristics and the level of slums. In addition, it makes a plan for infrastructure arrangement in the Danukusuman Area, Serengan, Surakarta City before development is carried out. The slum conditions that occur in the Danukusuman Area have been handled by slums but have not shown changes in the arrangement and improvement of slums.

Currently, efforts to overcome slums in the Danukusuman area by structuring settlements through the Government Program in this case the Cities Without Slums Program by carrying out development by building infrastructure supporting economic development and handling settlement infrastructure in slum areas by preparing with the aim that housing and settlements are decent, safe and affordable, providing access to decent and safe drinking water, and providing decent and safe sanitation.

This requires good data collection to organize the settlements of affected residents so that the affected community is not disadvantaged and reduce land conflicts in the location. So it is necessary to identify to get data on affected residents, determine the extent of slums, and determine the level of slums based on environmental, economic, and social characteristics of the community. The identification results are a reference used in making the concept of handling settlement infrastructure in slum areas located in Danukusuman, Serengan District, Surakarta City.

METHOD

The method used in Community Service in the Danukusuman Area is descriptive quantitative. not only data collection but data processing in the form of numbers and planning. Data collection through surveys and field observations, which were carried out by a team of 2 (two) lecturers and 2 (one) students of Indo

Global Mandiri University. The implementation of this activity consists of several stages of activities presented in Figure 1.



FIGURE 1. Activity Stages

Preparation Stage

The preparatory stage in the implementation of this activity is to coordinate with the kotaku team, stakeholders for the preparation of a preliminary survey implementation plan. Media preparation includes location maps, survey forms, slum decree.

Survey and Field Observation Phase

The next step with the owner, the kotaku team coordinates with the village head and residents to determine the location of the area where infrastructure arrangement will be planned in the Tipes Village area.

Activity Implementation Stage

This stage of the activity is carried out by identifying the location of slums, the condition of slums, recording land legality, inventorying the assets of residents affected by the project during the implementation of development projects, and other considerations.

Data Processing

Processing the survey data using Excel software to calculate the total area of slum areas and calculate the level of slumness.

Planning

Preparation of detailed technical plans (DED) on development areas within priority residential areas for handling, making infrastructure arrangement plans in the form of site plans for the Danukusuman Arrangement Plan, development plans, and top view drawings.

RESULT AND DISCUSSION

Community service for slum areas in Danukusuman was carried out in the form of counseling. The result of this community service showed high enthusiasm from the participants which can be seen from the active discussion and participants can understand the material presented (Aeni et al., 2022).

Slum Area

Slums in the Danukusuman area in Serengan and Pasar Kliwon sub-districts amount to 8.178 Ha, the area of the slums can be seen in Table 1.

TABLE 1. Area of Slum Area in Danukusuman Area

VILLAGE	DISTRICT	SEVERAL AREAS (Ha)
Danukusuman	Serengan	1.173
Joyotakan	Serengan	5.753
Pasar Kliwon	Pasar Kliwon	1.252

In Table 1, The area of Danukusuman Slum Area in Serengan and Pasar Kliwon Sub-districts is 8.178 hectares, consisting of Kliwon is 8,178 hectares, consisting of 1,173 hectares of Danukusuman, 5,753 hectares of Joyotakan, and 1,252 hectares of Pasar Kliwon village covering 1.252 Ha.

Affected Residents

Data on the results of data collection of residents affected by the implementation of development in Danukusuman area in **Table 2**.

TABLE 2. Affected Residents

Description	Units	Total
Total residential buildings	Unit	63
Total family heads	KK	63
Total household members	Soul	176
Total female household members	Soul	90
Number of residential buildings occupied by more than 1 coconut family	Unit	2
Residents of KTP Surakarta city	KK	63
Residents of KTP outside Surakarta city	KK	-
Number of households with landowner status	Unit	63

TABLE 3. Assets affected by the project

Description	Units	Total
1. Number of buildings affected:		
- Permanent	Unit	44
- Semi-permanent	Unit	8
- not permanent	Unit	11
2. House as a place of business:		
- Permanent	Unit	6
- Semi-permanent	Unit	3
- not permanen	Unit	2

Level of squalor

The results of data collection obtained the initial level of a slum in the Danukusuman area of Surakarata city with a total of 104 buildings, a population of 406 people, and 117 households as shown in Table 4.

TABLE 4. Calculation of Initial Slum Level

Aspects	Criteria	Initial Condition (Baseline)			
		Volume	Units	(%)	Value
Building Condition	a. Building Irregularity	50.00	Unit	48.08	1
	b. Building Density	-	Ha	0.00	0
	c. Non-conformity with building technical requirements	50.00	Unit	48.08	1
Average Building Condition				32.05	
Neighborhood Road Condition	a. Neighborhood Road service coverage	-	Meter	0.00	0
	b. Neighborhood Road Surface Quality	450.00	Meter	50.00	1
Average Neighborhood Road Condition				25.00	
Condition of Drinking Water Supply	a. Availability of Safe Access to Drinking Water.	51.00	KK	43.59	1
	b. Unmet need for drinking water.	-	KK	0.00	0
Average condition of drinking water supply				21.79	
Environmental Drainage Condition	a. Inability to drain water runoff.	-	Ha	0.00	0
	b. Unavailability of drainage				
	c. Quality of drainage construction	100.00	Meter	11.11	0
		350.00	Meter	38.89	1
Average Environmental Drainage Condition				12.96	
Wastewater Management Condition	a. SPAL system does not meet technical standards	60.00	KK	51,28	3
	b. Infrastructure and wastewater management not in accordance with technical requirements	92.00	KK	78.63	5
Average Wastewater Management condition				64.96	
Management Condition Waste	a. Waste infrastructure and facilities are not in accordance with technical requirements	117.00	KK	100.00	5
	b. Waste management systems that are not in accordance with technical standards	-	KK	0.00	0
Average Waste Management Condition				50.00	
Fire Protection Condition	a. Unavailability of Fire Protection Infrastructure	46.00	Unit	44.23	1
	b. Unavailability of fire protection facilities	104	Unit	100.00	5
Average Fire Protection condition				72.12	
Total Value					24
Slum Level				Slum Light	

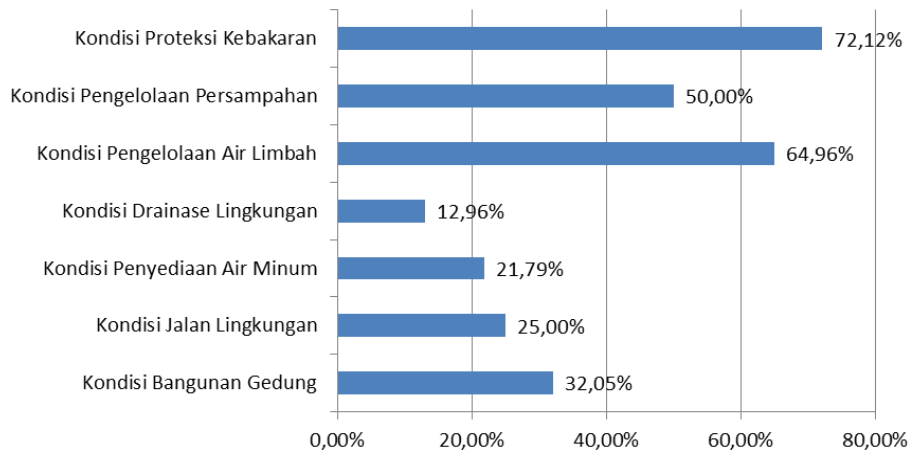


FIGURE 2. Initial Slum Level

The planned locations affected by development and the level of slums in the Danukusuman area are listed in Table 5. The results of field identification showed that the level of slums in the Danukusuman area is categorized as moderate, as shown in Table 5.

TABLE 5. Initial Slum Level

Rt/Rw)	Extensive (ha)	Population		Slum		Other Pert		Land legality
		Number (jiwa)	Density (jiwa/Ha)	Value	Level	Value	Level	
001/009	0.551	212	385	23	Slum Light	8	Medium	Legal
002/009	1.329	180	135	27	Slum Light	6	Medium	Legal
003/009	0.944	226	239	22	Slum Light	9	Medium	Legal
004/011	0.082	117	1427	20	Slum Light	10	Medium	Legal
004/012	0.356	84	236	25	Slum Light	8	Medium	Legal
004/015	2.225	91	41	18	Slum Light	6	Medium	Legal

Infrastructure Arrangement Plan

The results of data processing planned the infrastructure arrangement of the Danukusuman area with an area of approximately 1896 m² and obtained 63 lots, 356 m² of road area and 48 m² of public facilities, 212 m² of Green Open Space as shown in Figure 2.

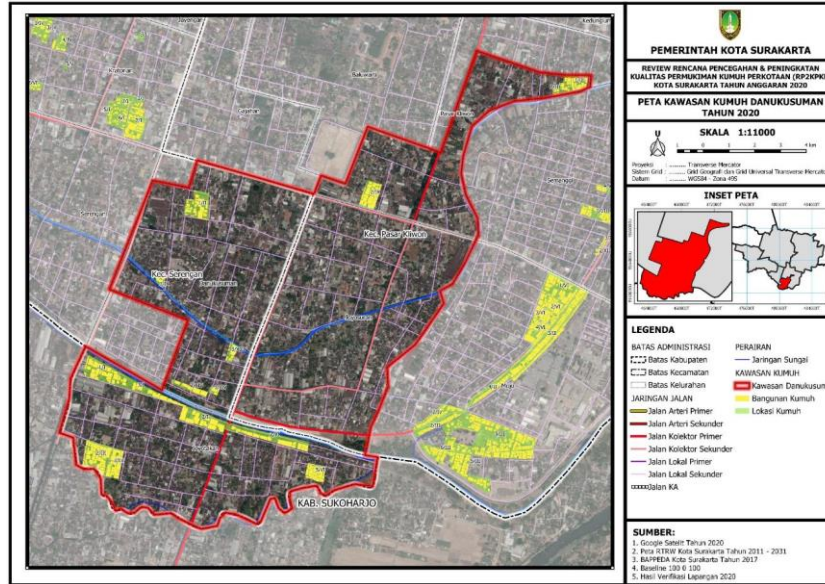


FIGURE 2. Siteplan of Danukusuman Area

CONCLUSIONS AND RECOMMENDATIONS

The results of the identification of slums in the Danukusuman area in the delineation obtained a total slum area of 5.487 hectares, data collection of the initial slum level of 2,273 hectares, with a total of 104 units of buildings, a population of 406 people, and 117 households. The average value of fire protection conditions is 72.12%, with a value of 24 and the level of slums including light slums. The results of the site plan of the house infrastructure arrangement plan obtained 53 lots including public facilities, green spaces, and roads with a width of 3 m.

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