International Journal of Engineering & Technology, 7 (2.14) (2018) 256-259

International Journal of Engineering & Technology

Website: www.sciencepubco.com/index.php/IJET

Research Paper

Obstacle and Driving Factors of Ciliwung River Revitalization and Community Acceptance of The New Land Use

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Abstract

This research was conducted to understand community acceptance of the new land use and to reveal the obstacles and drivers' factors of the river revitalization process. Using questionnaire and interview to 100 respondents in Kampung Pulo, the result shows that 98% of respondents are agree with the revitalization, 62% of respondents stated that the new land use is good. 82% of community expectations for the new land use as green open space, 11% of community expectations for the new land use as a place for cultural show, 5% of community expectation as a recreation park/playground, and 2% of responded expect the new land use as place for sport. It can be concluded that green open space is the most expected new land use. Plants and trees are still limited so that the area is hot and arid. However, there are many obstacles and driving factors in Ciliwung river revitalization, such as the promise of replacing land that occupied by the displaced people, free placement at the new place (Rusunawa Jatinegara), and the demonstration also the mass action during the evictions. Besides the obstacles, there are also driving factors of Ciliwung river such as its widened area, flood control, and the creation of the new road access. There is a model that can be applied in the landscape or urban planning area study with reference to the stages of: residents settlement on the banks of the river, clearance of settlements, develop green open space in cleared areas, and safe guarding of the new land use. This research model can be applied in other areas using the same variables, with the assumption that the area has the same river morphology, urban slum and densely populated areas

Keywords: *Environmental Planning, Revitalization, Landscape Planning, Biophysical Aspects.*

1. Introduction

Developing countries in the world often face similar problem; high population growth, poverty that exist not only in in rural areas [1] but also in urban areas [2], [3] income gap [4], increasing in resource consumption, and urbanization. As a sign of development, urbanization has lifted many people out of poverty [5], but uncontrolled urbanization can cause many problems in city areas. Lack of government capacity to provide job, housing, infrastructure and public facilities resulted in poverty [6], [7], and unsuccessful urban development; slums area, waste problems, pollution [8], congestions, shortage of save and palatable water supply, epidemic and man-made disaster. On top of that, climate change has brought more complicated impact to the environment [9], [10], a vicious cycle of bad environmental management and the impact of climate change resulted in disaster-induced by climate change [11]–[16]. In rural areas, climate change has impact on farming [17], decrease in yield that caused farmers to seek other opportunities in urban areas [18], [19], in this case, increasing the number of urban population. Urban areas also facing the threat of climate change, increasing in temperature, longer dry or rainy seasons, extreme temperature, limited resource of clean air and water and also has to adsorb the incomers from rural areas that come to seek better opportunity in the city.

This research study Jakarta's plan of Ciliwung river revitalization in Kampung Pulo area. This area is frequently flooded during the rainy season. Kampung Pulo is located in East Jakarta, in the banks of Ciliwung River. In 2016, there were around seven thousand squatters lived in this area, most of them has been living there since they were born and inherited the house from their parents who were migrated to Jakarta from outer areas. Without land ownership, these incomers tend to use common place such as riverbank, the side of railroads and any other common spaces. Jakarta as the capital city of Indonesia has more than 10 million population [20], with 15,366.87 inhabitants per square kilometers has made every inch of land in Jakarta as a valuable asset even though they have to live in the riverbanks without proper facilities and the risk to be exposed to live in unhealthy environmental condition.

Flows from Mount Pangrango to the coast of Java sea, Ciliwung River Basin Area consist of ±337 km^2. Revitalization of the region is expected to contribute in minimizing urban problems such as slum degradation, overcome potential disaster of flooding, and increase the value of Ciliwung River banks. Revitaliza-

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tion is defined as an effort to increase the value of land or area through rebuilding in an area that can improve the function of the previous area[21]. The governor of Jakarta has the authority to manage the river and water resource in his area [22]–[24], Ciliwung River revitalization in Kampung Pulo area are consists of three steps: The government carried out the land clearance and control of the land which is part of the river banks, dredging to increase the river capacity, and moving the people that live in the riverbank (affected river side) to a simple apartment (Rusunawa Jatinegara). The public facilities which support the residential areas in some places are very less, for example the public toilets, mosques, and others. In additions, the lack of existence of public facilities on the site causes the river as a target for the community to dispose the waste into the river. This causes a decrease in the biophysical quality of the river such as the occurrence of siltation, the quality of river water becomes polluted and the flow of the river water is stopped caused by the accumulation of the waste. So that flooding had become a potential disaster in Kampung Pulo [25].

Revitalization of Kampung Pulo consist of eviction of people live in the riverbank and moving them to a new simple rental apartment (Rusunawa Jatinegara). Previous research has analyzed the revitalization process on Kampung Pulo segment by observing the biophysical condition before and after the eviction [26], also analyzed the perception of environmental health in Rusunawa compare to Kampung Pulo [27]. The aims of this paper are to understand the community's acceptance of the new land use in Kampung Pulo and to reveal the obstacles and the driving factors in the process of revitalizing Ciliwung River in Kampung Pulo.

2. Research Methodology

This study uses primary data that obtained from the respondents of Kampung Pulo community which were interviewed by using questionnaires. The questionnaires were distributed randomly to the household in Kampung Pulo, those who were not evicted to Rusunawa. To determine the number of the taken samples, Slovin Method were used [28], [29]. Field survey also conducted to observe and collect data focused on the parameters to be analyzed, documented and interviewed. Data analysis were conducted to determine the potential (driving factor) and constrains (obstacles) during the process of river revitalization. The data and information obtained are analyzed descriptively and qualitatively.

Kampung Pulo subdistrict is consist of eight segments (RW), the inhabitant in RW 2 and RW 3 are not evicted to Rusunawa Jatinegara. There are 1076 household in RW 2 and 1015 household in RW 3. Therefore, the sampling is done by presenting the sum of both RW. The calculation is as follows:

$$\text{RW 02} = \frac{1076}{2091} \times 100 = 51{,}45 \approx 51 \text{ KK}$$

$$\text{RW 03} = \frac{1015}{2091} \times 100 = 48{,}54 \approx 49 \text{ KK}$$

Interview and questionnaires were distributed randomly, from 100 respondents, 34 are male and 66 are female. The youngest respondents are 25 years old and the oldest one is 65 years old.

3. Results and Discussion

Based on the questionnaire, the inhabitants of Kampung Pulo is predominantly having original status of Jakarta residents, all respondents are having Jakarta's ID card. It means no new comer or guest from outside Jakarta. The community has more than 10 years residing in Kampung Pulo area. Tabel 1 shows the description of respondents. Majority of the respondents are elementary school graduate with monthly income of IDR 1.5 – 2.49 million per month.

Table.1: Respondents Characteristics

Education			Income			
Elementary School	Junior/Senior High School	University	Below IDR 1.5 mill./month	IDR 1.5 – 2.49 mill./month	IDR 2.5 – 3.49 mill./month	Above IDR 3.5 mill./month
55	45	0	16	65	15	4

Among four options of the reasons to live in Kampung Pulo; economic factor, strategic location, cultural factor, adequate facilities. 46% of the respondents said the reasons of people choose to live in Kampung Pulo is due to its strategic location, 44% said because of cultural factors (the people around Kampung Pulo always help each other), 10% of the respondents stated the reason is for the economic factors, and none of respondents chose the reason because of adequate facilities. While they aware of living in Kampung Pulo does not provide them with adequate facilities such as water supply, it can be concluded that the majority of community chooses to live in Kampung Pulo especially on the river banks is due to strategic location; to Ciliwung river, near to Jatinegara market and city center. This result shows that improvement in public facility, and provision of adequate living condition [30] is needed. Those basic needs fulfillment can lead to a better socio-economic condition [6], [31]. The better socio-economic condition will increase the resiliensi in facing illness [32] and disaster [33].

The questionnaires were given to the house hold of RW 2 and RW 3 after the eviction and land clearance of the slums and houses in the river banks. The friends or neighbors of the respondents who were evicted already moved to Rusunawa Jatinegara. In the new settle of land use, no more slums or house right in the river side. Along riverside is used for road, greenery and open space. Figure 1 shows Kampung Pulo area before revitalization in 2014, houses were built by the river, while the inhabitants use the river water for cooking, drink, washing clothes, dishes, bathing as well as for discharging human and domestic waste. Figure 2 shows the condition of Kampung Pulo after the revitalization in 2017.



Figure.1: Kampung Pulo slums before revitalization



Figure.2: Kampung Pulo nowadays

Based on figure 3, 62% of respondents stated that the new land use is good, 32% stated that the new land use is not good, 4% states that the new land use is bad, and 2% stated that the new land use of Kampung Pulo is very good. It can be concluded that the circumstances of the new land use of Kampung Pulo is already improving. The new river bank area is used for pathway to access to the main road, it has made people accesses to the main road easier and faster. But with the new condition, Kampung Pulo become prone to thieves and the noise level is higher compare than before the revitalization. The thieves are targeted motorcycles. Also, there is no a security, no main gate to the area, the area becoming more exposed to public, this has brought an insecure feeling to the Kampung Pulo community who thought that the previous condition is more save and exclusive only for their community. There are 24 respondents who want to have gate or security officer guarding the area.

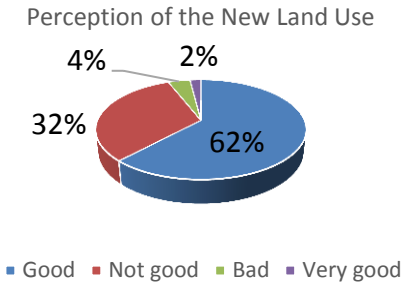


Figure.3: The Perception of Kampung Pulo Community about the New Land Use

Based on figure 4, 82% of community expectations for the new land use as green open space, 11% of community expectations for the new land use as a place for cultural show, 5% of community expectation as a recreation park/playground, and 2% of responded expect the new land use as place for sport. It can be concluded that green open space is the most expected new land use. Plans and trees are still limited so that the area is hot and arid.

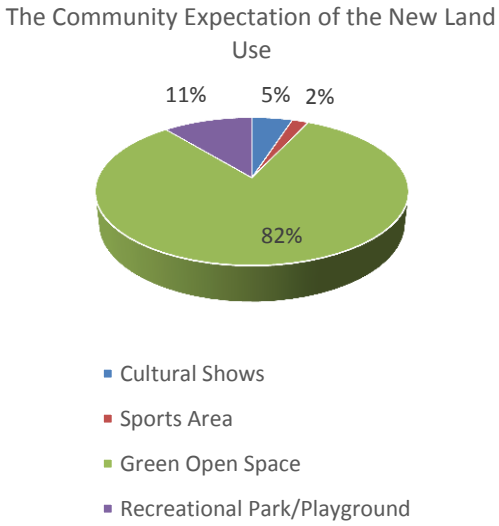


Figure.4: the Community Expectations for the New Land Use in Kampung Pulo

The majority of respondents agreed in the effort of Ciliwung River revitalization. The number of respondents who answered agreed in the revitalization of Ciliwung River as much as 98% of 100 respondents. Then 2% of 100 respondents said they they did not agree in Ciliwung River revitalization effort. The reason of the community who answered of not agreeing is because the community has several houses in Kampung Pulo. Then one of their homes affected by the eviction which is not getting a replacement by the government.

The revitalization is an effort to increase the value of land/area through rebuilding in an area which can improve the function of the previous area. The purpose of revitalization is to increase the vitality of the developed area through the urban intervention which is able to create the growth and stability of the local economy, integrated with the habitable city system, social justice, cultural and environmental insights.

According to the interview, the obstacle in the process of revitalizing Ciliwung River according to Kampung Pulo are:

a. The government promised that the affected land by the evictions will get the replacement land. The governor of DKI Jakarta at that time, Mr. Joko Widodo said, the land will get a replacement even for the chicken coop. But the successor governor of DKI Jakarta (Mr. Basuki Tjahaja Purnama), the land affected by the eviction did not get any replacement at all. Displaced people feels disappointed by the changes in government's statement.
b. Kampung Pulo villagers who displaced to Rusunawa Jatinegara were promised to be able to occupy the Rusunawa Jatinegara for free. But the free rent is last for only the first 3 months, after that they have to pay the rent/management fee as much as IDR 300K in addition to the water and electricity bill.
c. At the time when the government apparatus will carry out the evictions, Kampung Pulo villagers conduct the demonstrations and the mass action are large, because the cleared land does not get any replacement at all. The surrounding community went upset when the government did the evictions.

The driving factors in the process of revitalizing Ciliwung River according to Kampung Pulo respondents are:

a. The cleared land will widen the Ciliwung River of 35 – 50 cm.
b. After the revitalization of Ciliwung river, Kampung Pulo area is no longer flooded, in the heavy rain, condition, then the local people will call the officer to pump the water to be discharged into the river.
c. The cleared land has become a pathway for the new road access.

Landscape planning is a land-base planning activity through the problem-solving activities and it is a long-term decision-making process to obtain a functional, aesthetic and sustainable landscape model that support the various needs and wants of the humans in an effort to improve a comfort and a well-being. Based on the result of the research, Ciliwung River landscape which flows in Kampung Melayu Village found the lack of green open space in RW 002, RW 003 and RW 005 segments. Then the lack of land for public facilities in RW 002, RW 003, RW 007 and RW 008 segments. In that segment, the government can provide the land for green open space so that the catchment area increase, hot and arid area decrease. Also, for public facilities such as mosques, and public toilets.

A suggested model for slums eradication and riverbank revitalization are as follow:

a. Freeing the settlement of residents on the banks of the river.
b. Clean up the resettled settlement areas.
c. Performing the greenery in cleared land.
d. Safeguarding the new land, otherwise squatters will return or the new incomers will use the land for housing.

4. Summary

Summary from the paper are listed as follows:

a. In the revitalization process of Ciliwung River in Kampung Pulo area, the stages of the revitalization are as follow:
    1) The government carries out the clearance and control of the land that is part of the river
    2) Conducting the dredging to increase the river capacity.
    3) Providing flats for the residents located on the banks of the affected river.

b. Based on the result of the study, the villagers of Kampung Pulo considered the new land use is in good condition.
c. The obstacles in the process of revitalizing Ciliwung River according to respondents are: the government promised if the land affected by the evictions will get the land replacement, and the displaced people can occupy Rusunawa Jatinegara for free, these promises were annulled, when the government apparatus did the eviction, Kampung Pulo community did a demonstration because the land that cleared do not get the replacement at all.
d. The driving factors in the revitalization process of Ciliwung River according to respondents are: the people support that widening for Ciliwung River as wide as 35 – 50 cm, after the revitalization of Ciliwung River, Kampung Pulo area is not flooded anymore, the cleared land had become wide for a road access.
e. The stages of this research model can be applied in areas with similar variables; such as river morphology, urban areas, slum areas, and densely populated areas. Note that Ciliwung River type includes the meandering type.

5. Conclusion

Suggestion based from the research are:

a. The results of this study can be used as a reference for the government to provide the counseling and socialization to the community that aims for a good environment so that Ciliwung River can be a cleaner and better.
b. The government to increase the green open space at RW 2, RW 3 and RW 5, and the government to provide public facilities in RW 2, RW 3, RW 7 and RW 8.
c. Guarding of security for the new land, use due to many thieves who entered into residential area of Kampung Pulo.
d. There is a model applied in this landscape plan with reference to the following variables:
    1) Freeing the settlements of residents who are on the banks of the river
    2) Clean up the resettled settlement areas.
    3) Performing the greening in areas which are already affected by revitalization, such as made the land for green open space
    4) Safeguarding the new land use.

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