Resource identification of Jambangan Kampong Surabaya City through “Asian New Urbanism” approach

S N Rukmana¹,² and A A S A Widyastuty¹,²

¹ Urban and Regional Planning Department
² Universitas PGRI Adi Buana – Surabaya, Indonesia

Email: nuurlaily_rukmana@unipasby.ac.id

Abstract. The effort of handling Urban problems must be balanced with community’s awareness. Surabaya city is one of cities that uses environmentally sound principles in its management especially in kampong area. It is proven by the achievements in national and international level in decreasing urban problem. This research focused on identification of potential in Jambangan Kampong in Surabaya city through Asian New Urbanism approach followed by priority development directions according to the potential. Research method used qualitative description and quantitative description methods. Method of collecting the data used observation and interview with competent informants (Analysis Hierarchy Process/AHP). the result of the research showed that Jambangan Kampong in Surabaya city was in accordance with Asian New Urbanism approach through 5 indicators such as self sufficiency, shifting and floating values, transport route, conservation of environmental, and land as resource to develop focus priority on policy (43.5%), modal (21.8%), knowledge and cooperation (17.4%).

1. Introduction

There are three types of settlements in Indonesia including planned settlements, unplanned settlements, and squatter settlements. Each type of settlement has different characteristics. Planned type settlements have good and complete infrastructure management; unplanned type settlement is the type of old or original settlement in the city with houses within and accessibility which is difficult to reach by vehicles. Squatters type settlements are characterized by houses on the banks of rivers or build on state-owned land. [1] It cannot be denied that the development of many urban villages is characterized by various problems among others: it’s not supported by adequate facilities and infrastructure so that most of the villages become unhealthy residential for the city residents, unproductive, and the ownership status and legality of the land is unclear [2]

Surabaya City Government has implemented the Kampung Hijau or Surabaya Green and Clean program in improving the existence and quality of villages. This program has been held since 2005 and keeps increasing in the number of participants. This program is supported not only by the Surabaya City Government but also the private sector such as Jawa Pos and Unilever [3]. The Green and Clean program are one of the supportive approaches to sustainable villages. This approach was adopted from the concept approach of Asian New Urbanism. This concept is widely adopted in the lifestyle of East Asian people where the community has a planting approach [4]. Furthermore, the concept of Asian New Urbanism does not only focus on the community design, but it also focuses on the relationship of regional design to the design of small-scale cities and this concept is usually carried out in the
metropolitan area. [5] Thus, based on this background, the objective of this study is to identify the potential of villages in Surabaya and the priority of village development through the Asian New Urbanism approach.

2. Method
This research used mixed methods including descriptive qualitative and quantitative. This research used Asian New Urbanism approach. This approach is in line with [6]; [7] proposes indicators for the formation of urban settlements towards sustainability among others: Self-sufficiency, shifting and floating values, transport and mobility, conservation of environmental areas, and Land As Resources. The analytical method used to analyze the potential of villages through the Asian New Urbanism approach using the descriptive qualitative while analyzing the development of priorities using quantitative descriptive with AHP (Analytic Hierarchy Process) analysis techniques. The research location is in Jambangan Sub-district, Surabaya City, which is one of the areas that is still known as sustainable urban villages [8]. This study only focuses on RW 03, Jambangan urban village, Surabaya City (Figure 1).

3. Result and Discussions
3.1 The Identification of the Potential of the Jambangan Kampong in Surabaya City through the Asian New Urbanism Approach
The community of Jambangan Kampong, especially in RW 03, is categorized as a self-sufficient society, which is the community who have greater independence in the social, economic and cultural fields. The potential identified in this study focuses on the Asian New Urbanism approach. This approach was chosen because the Jambangan Kampong in Surabaya City has high density and limited area. The following are some of the potential adjusted to the Asian New Urbanism approach

a. Self-sufficiency
This point has a definition as an effort to fulfill optimal city needs. Its application is an area/kampong that has agricultural activities in the midst of limited land such as urban farming. In RW 3 of Jambangan Kampong, especially for 2-storey houses, they make an innovation to use the second floor to be planted such as hydroponic vegetables, medical plants, ornamental flowers.
b. Shifting and floating values
This point emphasizes the high population density in urban areas which is not balanced with the land area. The Asian New Urbanism approach emphasizes on land use in a mix-use way such as shop houses or housings which are built vertically. In the Jambangan Kampong, in order to maintain the feasibility of housing, a number of necessities are also provided in the environment such as shops (supermarkets), pharmacies, food stalls, bank. In order to reduce the density level, it has implemented “shifting and floating values” (see Figure 3)
c. Transport and mobility
The existing transportation in RW 3 of Jambangan Kampong passes through the secondary collector road which can usually be used by private vehicles and public transportation. The types of public transportation that pass through the Jambangan kampong are H2 and H2P. For the type of H2P, it passes through the Jambangan Subdistrict to the direction of Al Akbar Mosque Surabaya, while the type of H2 passes through the Wonokromo area. Until now, the community in Jambangan Kampong can still be using affordable public transportation (see Figure 4).

![Figure 4. Transport and mobility](image)


d. Conservation of environmental
This point focuses more on the environment that must be conserved, such as rivers that are usually covered by large amounts of waste. Seen from its history, Jambangan Kampong was used to be a gathering place for migrants outside Surabaya city. Even in the 1960s and 1980s, the number of settlements in this kampong became more crowded, so that the problem was in the form of waste. The problem of waste increases every year, so that the community of Jambangan Kampong forms an environmental cadre and starts forming a “Waste Bank” group. In addition, the current existence of the Jambangan Kampong has also undergone changes through the approach of “build houses, face the river” which means that the houses around the river faced the river. The purpose of this approach is to make the river as a yard and encourage the inhabitants to maintain and preserve the river (see Figure 5).
e. Land as resource
The potential and availability of land resources in RW 3 of the Jambangan Kampong to support sustainable kampong program activities are in the form of open land that is used by the community as a waste bank. Besides, RW 3 of the Jambangan Kampong also has a communal space in the form of a multi-purpose building that is used as a place for joint activities and gatherings of the entire community. In the RW 3 of the Jambangan Kampong, parks have also been developed which are used for medical plants (see Figure 6).
3.2 The Direction for Developing the Priority Potential of the Jambangan Kampong in Surabaya City

Analytic Hierarchy Process (AHP) method is broadly applied in decision making of a complex multi-criteria problem by breaking down the problem into a hierarchy. Saaty (1994) defined the hierarchy as a representation of a complex problem in a level structure where the first level is the goal, followed by the level of factors, criteria, and sub criteria. The AHP process involved three experts following the theme of this study, namely from academia, the government and environmental cadres.

Four criteria are used to analyze the priority development of Jambangan Kampong, including the existence of policies, capital, science and cooperation. In addition, the sub criteria measured in line with the concept of sustainable villages through the Asian New Urbanism approach include urban farming, backyard, open space, mix use land, shophouse/apartment, shelter/public transportation, pedestrian circulation, heritage conservation, suitability of the building, communal area, economic activity space.

According to the results of the analysis (Figure 7), the priority development of the Jambangan Kampong is prioritized to policies (62.9%); capital (20.6%), cooperation relations (11.2%) and science (5.3%). In addition, the inconsistent value is only 0.07, smaller than 0.1, indicating that the results of the experts' answers are consistent (see Figure 7 and Figure 8).

Figure 7. The Results of Development Priorities of Jambangan Kampong

Source: Analysis, 2019

Figure 8. Graphic of Pair-Comparison Value of Criteria Levels

Source: Analysis, 2019

The next step is to perform a pair-comparison of the four criteria toward the level of 11 sub-criteria. It is explained below:

1. Policy Criteria
   At the sub criteria level, the policy criteria have an attachment to the sub-criteria score of urban farming of 8.6%, backyard of 7.4%, open space of 8.3%, mix use land of 5.6%, etc.
shophouse/apartment of 7.7%, shelter/public transportation of 7.2%, pedestrian circulation of 7.2%, heritage conservation of 6.9%, suitability of the building of 11.4%, communal of 10.3%, economic activity space of 12.2%. It can be interpreted that the development of Jambangan Kampong must have (preferably) a master plan policy on economic activity space (market) and suitability of building with spatial layout (Figure 9).

![Graph of Pair-Comparison Value of Policy Criteria Level](image)

**Figure 9.** Graph of Pair-Comparison Value of Policy Criteria Level  
*Source: Analysis, 2019*

2. Investment Criteria  
The investment criterion that has the highest influence on sub-criteria is the space for economic activity. The following results of the analysis show urban farming of 7.4%, backyard of 7.1%, open space of 8.8%, mix use land of 6.0%, shophouse/apartment of 5.5%, shelter/public transportation of 3.9%, pedestrian circulation of 5.8%, heritage conservation of 3.6%, suitability of the building of 12.6%, communal of 10.2%, economic activity space of 14.1% (Figure 10). Therefore, it can be interpreted that the priorities of the sub criteria in developing sustainable villages in the capital criteria are economic activity space, communal and suitability of building and urban farming. The three sub-variables are prioritized because they require high capital in developing economic activity space in supporting urban farming activities in Jambangan Kampong, Surabaya. Urban farming is performed with small capital through economic activities to support sustainable village development programs (see Figure 10)
3. Cooperation Relations Criteria

The criteria for cooperation are crucial to identify the development priorities of Jambangan Kampong, Surabaya. The cooperation criteria that have an influence on the sub-criteria of the Asian New Urbanism approach is the suitability of the building with spatial planning (13.4%), followed with the space for economic activity, and heritage conservation (4.6%) as the smallest one. Unlike the case with the capital and policy criteria, the priority of this criteria is suitability of the building with spatial planning. The relationship between the suitability of the building and spatial planning with the criteria of cooperation is a collaboration that will be developed if it has been supported by the provision of space that will be used to support sustainable activities of the village such as urban farming. The pair-comparisons at the level of sub-criteria of science/skills shows the value of criteria of urban farming of 5.9%, backyard of 6.0%, open space of 8.1%, mixed use land of 7.9%, shophouse/apartment of 7.6%, shelter/public transportation of 6.7%, pedestrian circulation of 8.5%, heritage conservation of 4.6%, suitability of the building of 13.4%, communal of 8.3%, and economic activity space of 12.6%.
4. Science Criteria
The science criteria are associated with the knowledge of the application of the Jambangan Kampong of Surabaya City towards sustainable villages. The science criteria that have the highest influence on sub-criteria are the space for economic activity, the suitability of the building with spatial planning, and shared space. On the other hand, the lowest is heritage conservation. The following are the results of the analysis (Figure 12)

![Figure 12. Graphic of Pair-Comparison Value of Science Criteria Level](image)

Based on four criteria, to determine the development of Jambangan Kampong, priorities using the concept of sustainable villages of the Asian New Urbanism approach focused on the existence of space for economic activity. It indicates implementation of sustainable Jambangan Kampong of Surabaya City begins with the welfare of the local community through providing space for economic activities. This is in accordance with [7] that sustainable development starts from equality and social justice which must be based on aspects such as: even distribution of land resources, factors of production and equal opportunity for roles by women.

4. Result and Discussions
The existence of villages is always related to dirty and dense urban areas. There is one approach to implementing sustainable villages which is through Asian New Urbanism. Based on the analysis of this study, it is known that (A) the potential of Jambangan Village which is adapted to the Asian New Urbanism approach, one of which is the existence of urban farming in almost every house. In addition to urban farming, the community also forms a “waste bank” team to help the people and the environment. The results of this “waste bank” can also increase people’s income through innovation from plastic/goods that are not used anymore. Moreover, Jambangan Village is also known as a learning village, educated village, healthy village, creative-innovative village, and safe village. [8] This is evidence that settlements in urban settlements in urban areas have sought to implement sustainable villages. Therefore, to develop the potential priorities of Jambangan Village, it’s prioritizing the existence of policies while the implementation process in the Asian New Urbanism approach is produced that sub-criteria of economic activity space is the most crucial factor in realizing sustainable villages in Jambangan - Surabaya.

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