

# Sustainable Green Settlement: The Arrangement Strategy Of Tambak Wedi Kampong Toward Sustainable Kampong

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**Abstract :** *Urban development should be able to accommodate the needs of the present without compromising the ability of future generations to fulfill their needs by considering the pillars of sustainable development , namely economic , social, and environmental. Development that currently become the spotlight in East Java is Defelopment of Suramadu Bridge Area in Surabaya (KKJS - SS). In Master Plan of KKJS , the area was planned as an area of Surabaya mix used consisted of residential, office and trade and services. The other side, the condition existing is kampong settlements. This study focused on the development of residential housing arrangement where necessary strategies to support sustainable development KKJS . The analysis is used to formulate a strategy arrangement is descriptive comparative analysis . The results of the analysis , which shows that the strategy needs to be applied from the physical, social and economic on community participation based . The involvement of an important community role is manifested in the physical improvement of the environment , economic growth and cooperation among government , private sector and communities in the development of the region.*

**Key word :** *Kampong arrangement, sustainable, community participation.*

## Preliminary

Based on the government regulation (UU 26/2007), spatial planning is to realize the spatial national to be safe, comfortable, productive, and sustainable. The principle of sustainable development which was adapted by that regulation contains a sense of development must be able to accommodate the needs of the present without compromising the ability of future generation to complete their needs by considering the aspects of sustainable development, namely economic, social, and environmental aspect. Therefore, the fundamental aspects needed to understand how to get sustain.

One form of the development that is currently discuss East Java Province is Suramadu. The existence of the bridge would be accelerate the equalization of economic growth in Madura Island. But behind the development, there are increase the impact in environmental, social, and economic on KKJSS.

Before the realization of the construction, the land use in the Tambak Wedi form of open space and low dense of settlements. As development progresses, the area around KKJSS growing into high dense settlements and trading and services building along the main road. That activities grow by itself. While the government has their own masterplan related to manage the area. Based on spatial planning regulation of KKJSS 2011-2031, Tambak Wedi will be planned with mixed

used area. There are Central Business District (CBD), central facilities and residential areas. But the existing condition is still a kampung.

In this study, will be reviewed the strategy to manage the existing condition become the spatial planning by government. That strategy include all aspect on sustainable development.

#### Literature Review

To support the preparation of the concept of Sustainable development in the Village Green Pond Settlement , conducted a literature review to formulate indicators of Sustainable Green Settlement . Here are some related literature will be reviewed Eco City , Eco Village Green and Sustainable Settlement .

Sustainable city is a city that is self -sustaining needs of the people in it to maximize local resources owned . Local resources need to be preserved so that the quality of the environment in the region is not damaged . In addition , local resources can also be the city's identity and community pride ( Arifin and Nakagoshi , 2011) .

Another definition of a sustainable city adding social and cultural aspects . A comprehensive sustainable city concept also incorporates elements of the balance of opportunity , beauty , encourage creativity , improve communication access and mobility , shorter distance , and cultural diversity ( Erick and Suskiyanto , 2007) .

Thus , some principles of eco city include:

1. Security/Safety
2. Comfortability
3. Productivity
4. Sustainability

Housing (sustainable settlement) depends on creating a better environment for human health and well-being , improve people's living conditions and reduce the gap in the quality of their lives ( UN - Habitat , 1996) . Therefore the environmental dimension also become part of the housing indicators berklanjutan .

Furthermore , UN - Habitat ( 2012) , housing is the interaction between humans and the environment that has several functions , among others :

1. The physical environment : building houses , building design , pengturan space , building materials
2. Social structure : the activities within the housing , economic social interaction , culture and community .

Karyono ( 2010) revealed that the basic concept of green housing ( green settlement) is to design housing that is focused on more and more people are accommodated and social activities therein , without reducing the quality of the environment with a specific spatial structure . Karyono ( 2010) provide some indicators of the concept of green settlement, among others ;

1. Environmental suitability
2. Save energy
3. Environmentally friendly material
4. Water

5. Disposal of waste

6. Quality space

Synthesis of the results of the literature review , the indicators obtained grouped into physical, social and economic aspects:

1 . Physical aspects , defined by the indicator :

- a. Infrastructure services effectively and efficiently
- b. Save the energy ( energy recycling )
- c. Environmental Sustainability

2 . Social aspects , defined by indicators :

- a. Science and Technology
- b. Regulation and management
- c. Environmental awareness
- d. Environmental efficiency
- e. the involvement of private

3 . Economy , defined by the indicator :

- a. Kind of economy that will grow / potential
- b. The poverty rate
- c. The rate of consumption society
- d. The proportion of green GDP

## Methodology

Method of this study is descriptive-explorative method and descriptive-comparative method. The descriptive-explorative method used to identified the area study on physical, social, economic, and culture aspects. That method may used to identified some indicators on manage kampong 1<sup>st</sup>RW(RW is the commune unit) of Tambak Wedi sub district with in literature review technique.

The descriptive-comparative method is used to analyze the existing condition based on some indicators that found before. This method can lead to find the potentials and problems on area study. Based on that result, the strategic program would be formulated.

## Result And Discussion

### *General Overview Of The Study Area*

The scope of this study is Tambak Wedi especially on 1<sup>st</sup>RW of Tambak Wedi Subdistrict. The administrative boundaries of this study areas :

- North : Madura Strait
- South : 4<sup>th</sup>RWof Tambak Wedi Subdistrict
- Western : Tebu River
- East : Tambak Wedi Tengah Street, 2<sup>nd</sup>RW of Tambak Wedi Subdistrict

Physical Aspect

Land use on the area study was dominated by settlement area, pond, and vacant land (Figure 1). Nevertheless there are also underlined coast mangrove area is industrial and warehousing on the main road Cane River. In general, extensive land use in the study area can be shown in Table 1.

Table 1. Existing Land Use In The Study Area

Penggunaan Lahan	Area (m2)
Public facilities	3.958,65
Settlement	135.719,86
Vacant Land	38.030,59
Tomb Land	2.975,29
Funding and services area	793,39
Industry	5.263,76
Pond	118.193,92
Mangrove	36.461,52
<b>Total</b>	<b>341.396,98</b>

Source : Observation, 2013

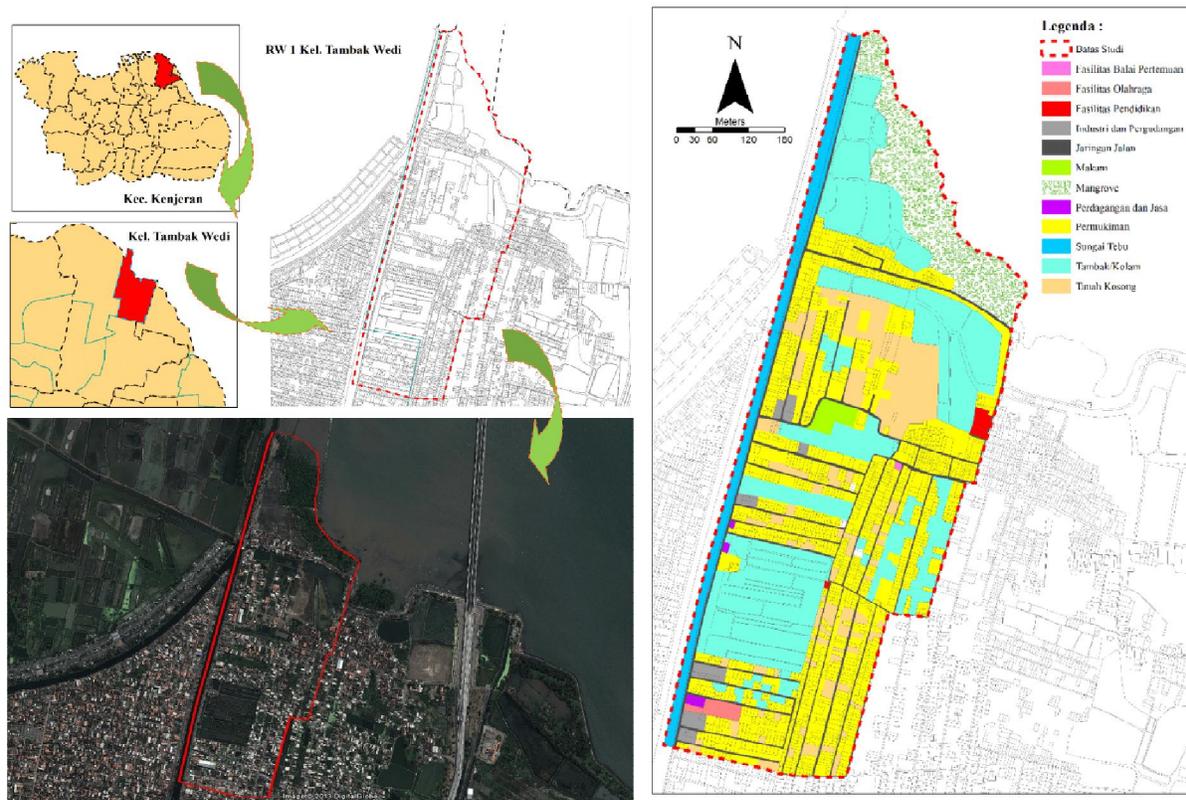


Figure 1. Existing Land Use In The Study Area  
 Source : Primary surveyand Google Earth Imagery, 2013.

Housing conditions in the study area is a form of self-constructed village land conversion results at a glance tambak. meskipun settlement form has a grid pattern but has a narrow width of the road. The shape of the building is dominated by a permanent home but not well ordered. Settlements built sporadically also not equipped with the channel adequate drainage. Nevertheless, the growth of housing units increased by making villages in the region increasingly disorganized and appear dirty. It is also caused by people who are less motivated to maintain the housing environment to be good. Depreciable village - corner and vacant land are often found piles of garbage. These conditions resulted in some point occurs when it rains floodwaters.

Studies in the region in terms of infrastructure, there are some existing facilities in the study area among other facilities elementary education, early childhood education and kindergarten facilities, neighborhood health center facility or health centers, where public cemetery, garbage depots and meeting hall facilities. Based on the results of field observations and interviews to population in the study area showed that the means in this region is sufficient and easily accessible by distance.

In contrast to the good condition of the road network infrastructure and drainage network. The road network in the study area has many paved with paving but many conditions have been damaged and dangerous.

### *Social Aspect*

Population in the study area are predominantly immigrant communities originating from human good in and outside Surabaya Surabaya East Java and even outside. But still artifacts that are native coastal communities that have special characteristics that differ from Surabaya society in general. Communities in the region tend to work in the fishing sector and have low education levels when compared with urban communities. Condition of the people is very hard and difficult to accept change (the interview).

Communities in the study area are known as the people who are religious (Islamic). The values and teachings of Islam are always used as role models and guidance of their lives, because the community is known as a religious community, which means preferring pesantren-based education (religion) rather than general education. However, they generally also still believe and hold various ceremonies salvation, as salvation village ceremonies, birth, marriage, death, day-to-day religions, as well as the ceremonial congratulations related livelihood life.

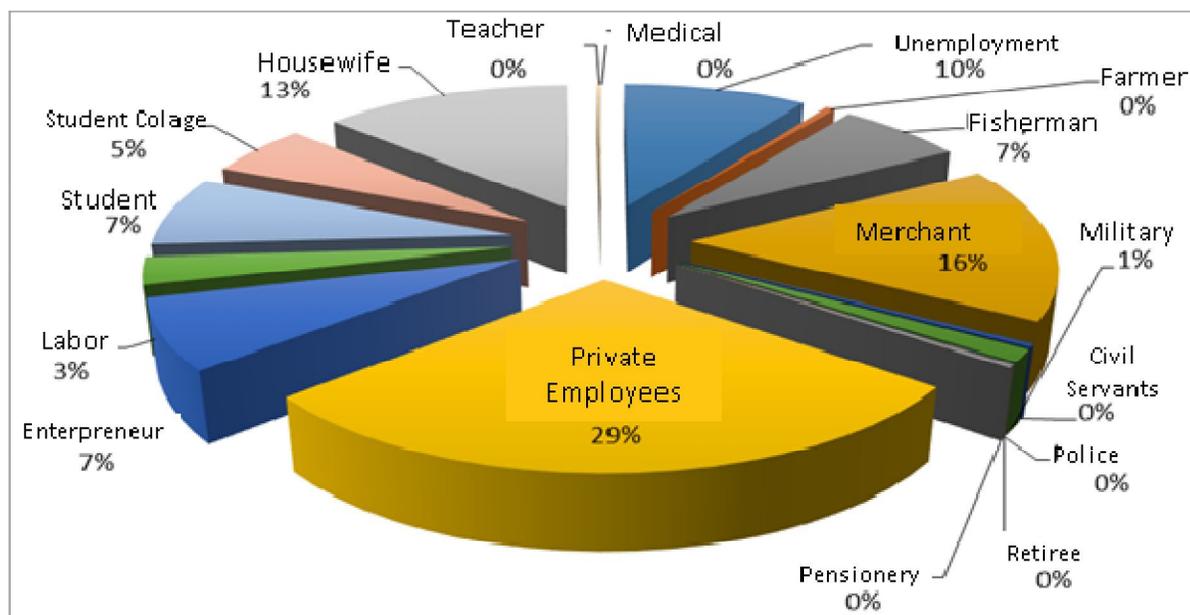
While the social conditions of immigrants in the community a little bit different. In general, people readily accept newcomers included changes KKJSS regional development plan. Viewed from the side livelihood, entrants have a background that is more diverse jobs as entrepreneurs, employees and civil servants. Social interaction is already well established among the people. The existence of social communities in the study area namely the existence of a group of fishermen. Community groups bring together fishermen fishing function and cooperate with each other in the welfare of its members. While the wives of fishermen to work together also in the process of the catch and market it. While the immigrant communities can be said to have not formed a special community. Parties and drives in the community both in kesdaran penyelesaian

environmental or social conflict is the RT or RW (RT is the neighbourhood unit community in the one commune (RW)).

### Aspek Ekonomi

Economic conditions in the region of the arrangement can be identified by knowing the type of community livelihoods . In 2007 , residents of Tambak Wedi Kampong most private employees livelihood as many as 2,551 inhabitants or 28.6 % of the total population . To more clearly related to the type of livelihood in Tambak Wedi Kampong can be seen in Figure 2 .

The planned development of the foot Suramadu Surabaya side impact on the activities that will be developed in the area of structuring ( RW 1 ). Under the Environmental Management Plan and Building, it appears that the arrangement around the site (block settlements) are the CBD (central business district) in the form of activities office and commercial .



**Figure 2.The Composition of Population Based Livelihood**  
**Sumber : Masterplan of Tambak Wedi Subdistrict, 2011**

In the framework of sustainable development , the presence of activity at the site in the form of a set of entity structuring settlements should integrate with the growing economic activity around it. Current condition of existing settlements at the site of the arrangement , the current tends to form a dense village . In the implementation of the CBD near the center of the location of the arrangement, it should be considered a pattern of management to integrate the two activities are mutually adjacent.

Analysis And Strategy Direction

Physical Aspect

Indication	Analysis	Strategy
<ul style="list-style-type: none"> <li>• Public infrastructure services efficiently and effectively</li> </ul>	<ul style="list-style-type: none"> <li>• Facilities are adequate both range and quantity of services such as education, health, worship or mausoleum.</li> <li>• However, the condition of the utility can not serve neighborhoods such as drainage and road which are still encountered either the damage or not connect each other.</li> </ul>	<p>The Strategy of public facilities development is revitalization neighborhoods through several programs:</p> <ol style="list-style-type: none"> <li>1. Drainage improvements between houses that are connected to the secondary channels of the city.</li> <li>2. Forming an environmentally conscious community in the first neighbourhood unit level</li> </ol>
<ul style="list-style-type: none"> <li>• Efforts to recycle energy</li> <li>• Preserving the environment</li> </ul>	<ul style="list-style-type: none"> <li>• In the study area there is no effort to recycle waste or energy. as in the case of garbage, people do not have the initiative to recycle or re-process it. There are no waste transportation merely dumped and burnt on vacant land around the house.</li> <li>• Environmental sustainability is less a concern of society especially in garbage management and coastal mangrove preservation.</li> </ul>	<ol style="list-style-type: none"> <li>3. Provide garbage bins and waste transportation system periodically in the first neighbourhood unit area.</li> <li>4. Provide periodic training regarding recycling and waste banks.</li> <li>5. Hold a competition between kampongs periodically to provide stimulus and foster environmental stewardship.</li> </ol>

Source : Analysis Result, 2013

Social Aspect

Indication	Analysis	Strategy
<ul style="list-style-type: none"> <li>• Technological knowledge</li> <li>• Regulation and Management</li> <li>• Environmental Awareness</li> <li>• Environmental Efficiency</li> <li>• Private Sector Responsiveness</li> </ul>	<ul style="list-style-type: none"> <li>• Intervention of technology in social activities is still not clearly visible. Fishing activities are still carried out by traditional means.</li> <li>• In this kampong there are no specific community to drives environmental awareness. But on the other hand quite a worrying picture of the environmental conditions seen from garbage management. So</li> </ul>	<p>Some strategies to improve community participation in the realization of a sustainable kampong arrangement through several programs, among others:</p> <ol style="list-style-type: none"> <li>1. Increasing knowledge based on technology in fisheries activities.</li> <li>2. Establishan environmentally conscious community that stems from forming cadres</li> </ol>

Indication	Analysis	Strategy
	<p>far, that serves as the driving force of social activity is neighbourhood/commune leader.</p> <ul style="list-style-type: none"> <li>• Awareness of environmental have not owned by every element of society. There are still found many people who taking out the trash on the vacant land.</li> <li>• There is no waste management activities.</li> </ul>	<p>to drive environmental awareness that it is not only pursued at the level of the government but along with the support of the entire community.</p> <p>3. Cultivating expertise recycling bin. Through the involvement of communities and fostering creativity will foster sustainable kampong on the social interaction aspect and economic growth activities.</p>

Source : Analysis Result, 2013

### *Economic Aspect*

Indication	Analysis	Strategy
<ul style="list-style-type: none"> <li>• The level of public consumption</li> <li>• Poverty residents</li> <li>• The proportion of green GDP</li> <li>• Type of economic growth</li> </ul>	<ul style="list-style-type: none"> <li>• The citizen majority in the study area are migrants, who on average had been domiciled for 5-7 years. Based on the results of the primary survey, both natives and immigrants have high levels of spending only on primary necessities such as shelter, food, education and employment. It shows that the population in the study area is a low-middle class economy. In support of sustainable development needs to be regulated the level of consumption which cause of environmental damage. it should be minimized. However, to meet the needs of sustainable food efforts need to continue to maintain land productivity as related to the food needs of the community, the fisheries</li> </ul>	<p>The development strategy in the economic aspect is shaping the human resources competitiveness :</p> <ol style="list-style-type: none"> <li>1. The establishment of a good communication network between government, local NGOs, msayarakat, and academics in the study and implementation of sustainable settlements</li> <li>2. The delivery of public education related to sustainable settlements</li> <li>3. Intensive training to the local communities in the management of household waste that can be empowered to sell.</li> <li>4. Pelalithan intensive effort in creating creative economy thereby</li> </ol>

Indication	Analysis	Strategy
	<p>activities.</p> <ul style="list-style-type: none"> <li>• A central district development plan in the study areas such as offices area, trade and services provide opportunities for residents of the study area to find jobs in offices and commercial centers. These opportunities can be utilized by appropriate local community. Therefore, to support the sustainable development, efforts to increase human resources is very needed. need for efforts to stimulate creative economy inovation in the local community which can raises the competitiveness of the community along with the development in this area.</li> <li>• The need for efforts to increase the proportion of green GDP. So far the economic activities in this study area has raised impression of slums due to the number of locations of junk collection activities. It will not contribute a large proportion of green GDP, so that the management effort is required to set the pattern of growth of economic activity in the study area.</li> </ul>	<p>increasing the purchasing power</p> <ol style="list-style-type: none"> <li>5. Forming a group of environmentally conscious people who are empowered and accompanied by a local NGO and local government.</li> <li>6. The increasing hard skills and soft skills human resources by training provision.</li> </ol>

Source: Analysis Result, 2013

## Conclusion

Based on the analysis and discussion before, the realization of a sustainable kampong should consider to the sustainable physical, social and economic aspect as follows :

1. The condition of the study area is classified as poor and the environmental infrastructure has not been met. The development strategy is formulated to repair urban facilities which consist of utilities and facilities. Required the participation of the communities towards environmental

- improvement that can be initiated with green kampong competition to stimulate community participation.
2. In the social aspect, the study area was divided into two groups, namely the natives and settlers who both have different characteristics. neither environment cadre nor specific communities is not exist to drives public awareness of the environment quality. To realize a sustainable kampong is very important to increase community participation in environmental improvement and economic growth based on technology.
  3. In the economic aspect, the population of the study area was classified as middle class society, so the strategy is formulated to economic empowerment and environmental improvement concern. The establishment of a good communication network between government, local NGO, citizen, and intelektual in the planning and implementation of sustainable settlement development process which program consist : the delivery of public education, intensive training in local communities, Shaping environmentally conscious society groups that empowered or accompanied by either a local NGO or government, Increased human resources with hard skills and soft skills training.

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