



The Importance of Natural Preservation for Kampung Livability

**Case study: Coastal village, Kampung Wonorejo,
Surabaya-Indonesia**

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Abstract: Natural preservation of a settlement is very important for a sustainable life. Especially when the livelihood of inhabitants in the settlement depends on the surrounding natural resources. As happened in kampung wonorejo, some of the inhabitants work as fishermen, fishpond farmers, and catfish farmers. Kampung is a typical dense urban settlement and inhabited by the lower middle income people, formed without planning and the infrastructures tend to inadequate. The aim of this research was to examine the state of the settlement and the importance of preservation in relation to life support in coastal village. The method used was explorative survey and observation to find the actual field condition. The result showed that the inhabitants of kampung wonorejo have utilized the nature as well as did natural preservation. With the potential of existing natural and awareness of the community to improve their quality of life, kampung wonorejo will be a livable kampung.

Keywords: Kampung, livability, natural preservation.

INTRODUCTION

It is proved that if human against nature, they will lose, because nature always win. Actually the human's last choice is to compromise with nature. Related to the current issue of global warming or climate change, human is required to be more sustainable in many aspects. Human dimension and environment dimension are always connected, because environment is a place of human's life. Including in human dimension are social, culture, economic, and technology. Nature exists to be utilized wisely, not exploited heavily. Excessive exploitation of natural resources will lead to danger and greater cost than economic benefit that can be taken when "mother nature fights back" in the form of natural disasters and the impact of environmental damage to the continuity of human's life. Natural preservation effort will be mutualism symbiosis both for human and nature as long as done properly.

Each area has specific natural features and every natural feature has the potential to be developed by human who lived nearby. In this case the object of research is kampung. It's important to identify any natural resources that exist in the Kampung, because this can improve the quality of human's life that utilize it, including the Kampung. Moreover the current settlement requirements are increasingly emphasize the aspect of sustainability. Hence human behaviour towards the Kampung environment becomes very important.

THE POTENTIAL OF NATURAL RESOURCES IN SUPPORTING LIVABLE KAMPUNG

Natural resources are all the earth's wealth both biotic and abiotic which can be utilized for human's welfare¹. In supporting livable settlement natural resources can be used. Although it can't directly impact the livable settlement, but the utilization of natural resources can support through the human economic.

Wonorejo coastal kampung is geographically located in the eastern of Surabaya city (**Fig- 1**). Although it called coastal this kampung is not directly adjacent to the sea, but separated by very wide fishpond. That fishpond area at the same time is utilized as mangrove conservation area. Since the establishment as Surabaya Mangrove Center, Wonorejo has been famous. In addition Kampung Wonorejo is also passed by the river and has fertile land. From the brief description above shows that the natural potential in this Kampung is very large. With such condition nature provides livelihood for the inhabitants to work as fishermen, fishpond farmers, and mangrove cultivators.

- **Fishermen:** Based on the catch, there are 3 types of fishermen: those who catch fish, shell, and crab.
- **Fishpond farmer:** Total there are 70 fishponds in Wonorejo. The fishpond farmers are not just people who have fishpond, but also people who keep other people's fishponds. The average, each fishpond farmer has more than one pond. Prawn and milkfish become major commodity of this Kampung.
- **Mangrove cultivator:** Cultivation of mangrove has many great benefits both for nature and for human. For nature mangrove serve to prevent erosion. In addition mangrove also become habitat for terrestrial, water, and air fauna. Mangrove is a place for migratory birds. For human, especially for fishpond farmers, mangrove which is a habitat for crab, may indirectly increase the revenue at harvest. Therefore, people also cultivate mangrove in the edge of fishpond area.
- **Catfish farmer:** Beside three livelihoods depend on the nature above, there is a side job done by the inhabitants of Wonorejo, i.e. cultivate catfish. However, not all people do farming catfish, just a few families.



Fig- 1: The location of Wonorejo District in East Surabaya. Source: maps.google.co.id

KAMPUNG AND THE SETTLEMENT REQUIREMENT

As mentioned before, kampung is a typical dense urban settlement and inhabited by the lower middle income people, formed without planning and the infrastructures tend to inadequate. Kampung is often associated with poverty and poor quality of life of city dwellers. Urban Kampung in Indonesia is often considered synonymous with the term of slums and squatter settlement (illegal slums), but it is not always true. Kampung is not an illegal settlement and slum, but a form of self-help settlements built by its inhabitants without following the formal provisions of the government. Each Kampung is unique because it is the embodiment of ideas, creativity, ability, dreams, and pressures of its citizens².

Kampung in relation to the concept of sustainable human settlement development in an urbanizing world, will be discussed with the points contained in the National Agenda 21, among others:

1. Accountable autonomy with improvement of the capacity of local government in managing settlement development.
2. Acceleration of partnership among government, private sector and the community in settlements, infrastructure and service development.
3. Safe, healthy, green and socially integrated settlements.
4. Employment opportunity for all.
5. Sustainable spatial and land use development.
6. Safe, convenient, formal, affordable and efficient transportation system for all.

7. Sustainable settlements system that promote regional and national economic development.
8. Efficient, effective, transparent and environmentally sustainable settlements management.³

The following is a depiction of the National Agenda 21 points related to the case of Kampung Wonorejo, among others:

1. Acceleration of partnership among government, private sector and the community in settlements, infrastructure and service development: In kampung life, the main partnership is established between people. Kampung Wonorejo has good social conditions, like kampung in general. Only, in the interest of particular concern then comes blocks/groups that seemed to stand on their own, even though the group is in the same pathway, such as group in mangrove conservation. Meanwhile in partnership with government, private and community can be seen from many forms of cooperation in mangrove conservation assistance. Government plays a role here as stakeholder and policy maker, private as outsider which support and community as direct actor.

2. Safe, healthy, green and socially integrated settlements: the environmental unit with a population < 30.000 people, should owned at least:

- one unit Polyclinic / 3,000 people
- one unit Maternity hospital / 10000-30000 people
- one unit Health Centre / 30,000 people⁴

Kampung Wonorejo has 13.506 inhabitants. While the available health facilities are four Clinics/Community Service Centres, four Pharmacies, ten IHCs, and one health centre⁵. Compared with the standard above, Kampung Wonorejo has already been in Minimum Service Standard. However, the location of health facilities is less prevalent. Especially in District Unit 7, health facility does not exist at all. In addition, local inhabitants tend to be get used to less clean neighbourhood condition. This become a habit in their daily lives.

3. Employment opportunity for all : Recently, the rapid of urbanization is not followed by the improving skills of migrants, it will be hard for migrants to find job. In view of this fact, kampung Wonorejo can be quite good condition. 6.901 people aged between 18-56 years (3.547 males and 3.354 females), 2.324 men and 1.345 women have basic/main livelihood⁵. Beyond that number, there are also people who's have side livelihoods, cultivation of catfish, and opening small shops. It shows that the unemployment in kampung Wonorejo is not too large compared to its population.

Dominance of the population in the kampung Wonorejo worked in private sectors. However, in District Unit 07, which is closer to the coastal environment, the majority of livelihood as fishermen, fish farmers, and catfish farmers. There are some trainings and capital assistance, either from government or other parties. It promotes job opportunities for all.

4. Sustainable spatial and land use development: Since the holding of urban farming, people have been using the vacant land and ground for catfish cultivation. In addition, they also took the initiative to plant pepper/chilli, eggplant, and banana for home consumption. The edge of the fishpond is also planted with mangrove as conservation efforts.

5. Safe, convenient, formal, affordable and efficient transportation system for all: There is no public transport through kampung Wonorejo, because there is no access or shelter facility. This leads to a private vehicle to the needs of every resident, especially for work.

6. Sustainable settlements system that promote regional and national economic development: The potential of the kampung that can be seeded are the farming of catfish and fishponds. Both of these livelihoods may persist and increase the economic level of the residents. But in order to remain sustainable, it should be increased. For example, innovation in processing the raw food into other forms of food. So far, there have been efforts in innovation, unfortunately, the local people are still reluctant to try.

7. Efficient, effective, transparent and environmentally sustainable settlements management: In terms of civic community, the relationship between the organization is less harmonious. According to the inhabitants, the personages in kampung Wonorejo are less united and sometimes crash.

While in accordance with Agenda 21 that was launched in Rio de Janeiro, sustainable development in the settlement sector is defined as a sustainable settlement development to improve the social, economic and environmental quality as a place to live and work for all people. So, sustainable settlement development is an effort to improve the quality of life in a sustainable manner. In the development of a sustainable quality of life there are three important aspects:

- **Social:** The social life in this kampung is quite good, especially in terms of friendship between neighbors. The cultivation of catfish and other joint activities are still maintained. The role of women can be seen when there is an event in Mangrove Ecotourism (Ekowisata Mangrove). They cook and process the raw food from kampung into other forms of food. But there are exceptions to the social relations in regarding particular principles. This makes gaps/blocks in the community.
- **Economy:** The geographical position and its potential of natural resources, the mangrove forest supported the kampung in fishpond development, mangrove refined products, and tourism. In supporting the local economy, many inhabitants rely on the fisheries sector. But there is a paradox in the presence of ecotourism. On the one hand it looks lucrative eco-tourism, but for the inhabitants, especially for fishpond farmers, the presence of ecotourism would decrease their income. The frequent passing of motorboat, disturbs the fish, shrimp and crab that will go into the fishpond. In addition, motorboat fuel increases the acidity of river so that pollute the river ecosystem. This conditions must be avoided.
- **Environment:** Public awareness of environmental quality is lacking. The clean living habits in daily life of the people are also less visible. The houses are messed by asbestos and zinc materials. It is apparent that the physical environment of the kampung is not quite good. On the other hand, mangrove environment is now beginning to be well managed.⁶

THE KAMPUNG DWELLERS' BEHAVIOR ON THE ENVIRONMENT

*"Settlement form includes both the spatial arrangement of acting people, and the spatial flows resulting from that--plus the physical features modifying space"*⁷.

From theory, it can be concluded that a settlement is formed in part by the person who acted in it. In this case, related to the human treatment towards the surrounding environment. The theory states that each region will not be the same, because the pattern of settlement and treatment of people who live there will not be the same.

Human's life is inseparable from environmental influences. Human's life needs encourage people to adapt to the environment through various ways according to their ability. Even this drive is not limited to the adaptation, but also motivate to empower them through the balancing of science and technology. The

development of human relationship with the environment is determined by the wisdom of nature and a sense of responsibility from the people as users of the natural environment.

In kampung Wonorejo, the inhabitant's care for the environment has increased. At first mangrove forest in this kampung is unnoticed. Mangrove is only regarded as natural resource that is available to be exploited. Inhabitants initially used to use wood of mangrove trees for firewood and as wood products for sale. They cut as much as they want without any rejuvenation effort.

Most people around, especially those who have fishponds in the mangrove area, cut down mangrove trees because they were too fragile and vulnerable to collapse due to abrasion. These illegal activities took place in their daily lives, because most people do not know if there are laws that prohibit illegal logging. As a result, mangrove forest became barren and arid. Until now mangrove illegal logging is a problem to be handled by the police.

Problems that arose because of logging became the turning point of mangrove conservation awareness by local residents. With this awareness, they together perform for the conservation of mangroves. Beginning with the formation of the group, it is expected that conservation activities can be engaged with the main focus on social activities, especially in the case of mangrove reforestation. This idea came from the local community. Efforts that had been done are planting mangrove seedlings on farms by the community (**Fig-2**).



Fig- 2: Mangrove that planted in fishponds

In addition to conservation efforts undertaken by community groups, there are several parties who participated in conserving mangroves in different ways. There are also parties that recycle the fallen fruits of mangrove trees. The fruits are processed and become mangrove products, such as syrup, soybean, cake, noodles, sweets, and colour for batik, that can be marketed. By marketing the product, may indirectly promote the mangrove to the public.

Inhabitant's treatment to the environment provides a positive start. But public awareness of the immediate neighborhood of the settlement is still less attention. As seen in **Fig- 3**, people still dump their household garbage on vacant land next to their house. This shows that public awareness of the environment health is still lacking.



Fig- 3: Societies habit of throw the garbage in vacant land around their houses

If such circumstances continue, it will result in less well against the sustainability of the kampung. Thus, the need to create community awareness to pay more attention of hygiene and environmental health, i.e. providing adequate trash bins and do not damage the environment, must be imposed.

NATURAL PRESERVATION FOR THE BETTER KAMPUNG

Natural resources are the capital that must be used optimally and certainly not disturbing the environment. It means that it should uphold the interest of sustainability for the future continuity. Natural resources are certainly an integral part of an ecosystem that includes the environment and the interrelationships that occur in the ecosystem, no exception in relation to the human environment.

Now the human environment is connected with the construction activities. These activities either directly or not, will certainly affect the basic structure of the ecosystem or cause changes, whether small or large. Therefore the use of natural resources to the development process should consider these aspects below:

1. The effectiveness and the efficiency must be viewed within the optimal bounds with respect to the preservation of natural resources that may be achieved.
2. Not reduce the capacity and sustainability of other natural resources in the ecosystem.
3. Gives the possibility to make choices in the use of future development.⁸

While talking about kampung, as explained previously that kampung is a form of urban settlement. Lynch (1981) divided in 5 dimensions to be able to measure the quality of the settlement. These include the following aspects:

1. Vitality, is settlement's ability to support the biological requirements and capabilities of human being.
2. Sense is the degree of how clear the settlement can be perceived and structured.
3. Fit is a measure of the behaviour settings: how the settlement form matches with action of people.
4. Access is the ability to achieve the different elements that are needed or desired to be achieved, and their quantity and diversity.
5. Control, the degree to which the space can be controlled by the people who use it.⁷

The first is vitality. This aspect is related to the economic level in support of the necessities of life. As mentioned before, there are many potential and existing dominant livelihood in Kampung Wonorejo, such as, the potential of coastal that support the fisheries activities. The ability, experience and knowledge of fishery has been helping people to find a permanent source of sustainable income. In addition, the geographical potential also gives a lot of helps to fulfill the inhabitant's needs. However, it's still constrained by lack of innovation in process and a reluctance to try.

The second is sense. Sense here more toward the completion of the conditions that occur. In addressing this, the kampung Wonorejo much learned from experience and social relation with neighbours. As in the mangrove forest conservation is the act of community awareness and responsibility after the illegal logging activities.

Third is fit, the measure of the behaviour of settlement's inhabitants. The main concern here is the physical condition of local resident's houses. Almost all the houses in this kampung use only modest material and are less concerned about the viability and health consequences, such as the use of asbestos. It is hoped that non-toxic building material is used in the housing construction.

Fourth is access, or the ability to achieve the required or desired element. Adequate road infrastructure is good for two-wheel or four-wheel drive. Improvements in the kampung are also being made in response to road damage.

And the last is the control, which is the ability to control. Kampung Wonorejo is a kampung in the city, but it still has a lot of open land. Ironically, of the many existing open land, this kampung does not even have a green space for the common interest. By facilitating green open space to helping provide public space for the inhabitants, and playground for children. It is also expected to train hygiene care attitude and to increase the sense of ownership of the inhabitants.

Based on the geographical position of the coast and supported by the availability of land and mangrove forest ecosystem, kampung community and the local government should be able to maximize the potential of kampung Wonorejo in the following ways:

- The utilization of natural materials
- The use of green spaces as public spaces
- Maximizing the infrastructure, particularly sanitary
- Maximizing the social life of neighbours to increase income and welfare
- Increasing communality and learning together to create innovations
- Maximizing the potential of land as a green area and the planting of food crops/ vegetables
- The utilization of the river to support fish farming

CONCLUSION

From the research, it can be seen that the natural potential is the initial capital that owned by the inhabitants in this kampung to improve the quality of life. Kampung location that close to coastal areas also give impact on social and economic life of the inhabitants.

The condition of the settlement in kampung Wonorejo is quite good and now it is improving the kampung physical condition. That condition is one of the factors that support the creation of livability in kampung Wonorejo. Certainly, it is not only simply repair any environmental damage, but also the support from the inhabitants to change their poor habits. The inhabitants effort to preserve the mangrove forest has shown good results. With the potential of existing natural and awareness of the community to improve the quality of life, kampung Wonorejo will be a livable home.

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