

# Green Open Spaces and Sustainable Settlements from the Islamic Perspectives – Case Study Kampung Kauman Malang

Nunik Junara<sup>1</sup>, Sugeng Triyadi<sup>2</sup>

<sup>1,2</sup>School of Architecture, Planning and Policy Development, Institute of Technology, Bandung 40132, Bandung, Indonesia

\*Corresponding author E-mail: [nunikjunara@yahoo.com](mailto:nunikjunara@yahoo.com)

## Abstract

Sustainable settlement in Islamic perspectives can be defined as a multi-dimensional process that seeks to achieve a balance between economic and socio-cultural aspects, and also the environmental aspect. There are many quotes of verses in the Quran and Hadith that leads to the belief that Islam as a Rahmatan lil Alaamiin, where men are encouraged to act wisely in treating nature and all living things in it. One aspect of the natural environment that closed to human is plants. In the settlement, the availability of green open space is highly recommended. The availability of green open space in the neighborhood, both the public and private green open spaces is expected to reduce the effects of global warming that has engulfed various parts of the world. Green open space that can be viewed from the angle of eco-aesthetic and eco-medical in sustainable architecture, is expected to increase the temperature and provide aesthetic impression to the surrounding environment. This paper attempts to discuss the principles of Islamic values related to the green open space. This paper also aims to raise awareness of the importance of the theme of sustainability in settlements, especially in big cities. Analysis of the availability of green open space in Kauman Malang is one example of the effort to apply the principles of sustainable settlement.

**Keywords:** Green Open Space, Sustainable Settlements, Islamic Values. Kampung Kauman Malang

## 1. Introduction

Green Open Space will have been more value for improving the ecological and aesthetic quality of the surrounding environment. The existence of green open space (RTH) was very important in determining the integrity and quality of the environment. In Indonesia, the basis for determining standards for environmental through the Regulation of Spatial Planning no. 26/2007. Section 29 mentions that the minimum of total city area available is 30%. It also said that at least 20% of the area is a public green space. Thus, in order to comply with 30% of the area can be covered with private green open space 10%. Therefore a green open space area raising alternatives through community participation in developing the private green open space.

Community participation is a key element of planning private green open space, as well as in maintaining quality. The benefits of this study as one of the ideas to increase the presence of green open space in settlements areas that have an impact on the community welfare, especially facing threat of global warming. Private green open space in Malang realized through regulations requiring the availability of parks, gardens at least 10% of housing area. The use of roof garden and potted plants (tabulampot) placed on the top of the gutter, and the terrace on the roof can be taken into account for the increase in private green space area. Despite not being able to absorb rain water, but greening through tabulampot provide ecological benefits such as reduction in ambient air temperature, increase in oxygen, reduce pollutants and habitat of birds and other insects.

According to Hakim (2007) green open space is a region or area of land surface which was dominated by plants built to specific habitat protection, or a means of environmental/town, or network safety infrastructure, and agriculture or aquaculture. In addition to improving the quality of the atmosphere, support the preservation of water and soil, green open space in the middle of urban ecosystems also serve to improve the quality of the urban landscape.

Ideally green open spaces is 30% of the area. Most of the major cities in Indonesia, the achievement of green open space is now only 10% areas (Hakim, 2007). Green open space is needed for health care, play areas, sports and public communications. Development of green open spaces must follow the rules of both central and local governments with existing standards.

According to the Regulation no. 1/ 2007 green open space functions include:

- securing the existence of urban protected areas;
- controlling pollution and damage to soil, water and air;
- plasma nuffah sanctuary and biodiversity;
- controlling the water system; and
- means the aesthetics of the city.

## 2. Literature study

### 2.1. The six competing logics of sustainable architecture

The discourse about architecture and buildings as well as environmentally friendly home into the 21st century tendency. According to Guy Farmer Simon and Graham (2001), there are six logical approach is considered and followed by the designers and planners to build a building or house, as shown in table 3 below this.

**Table 1:** The six competing logics in sustainable architecture (Guy, Farner, 2003)

Logic	Image of space	Source of Environmental Knowledge	Building image	Technologies	Idealized concept of place
Eco-technic	Global context macro physical	Techno rational scientific	Commercial modern future oriented	Future oriented efficient high- tech intelligent	Integration of global environmental concerns into conventional building design strategies. Urban vision of the compact and dense city
Eco-centric	Fragile macro biotic	Systemic ecology methaphysical holism	Polluter parasitic consumer	Autonomous renewable recycled intermediate	Harmony with nature through decentralized, autonomous buildings with limited ecological footprints. Ensuring the stability, integrity, and "flourishing" of local and global biodiversity
Eco-aesthetic	Alienating anthropocentric	Sensual postmodern science	Iconic architectural New Age	Pragmatic new nonlinier organic	Universally reconstructed in the light of new ecological knowledge and transforming our consciousness of nature
Eco-cultural	Cultural context regional	Phenomenology cultural ecology	Authentic harmonious typological	Local low tech commonplace vernacular	Learning to "dwell" through buildings adapted to local and bioregional physical and cultural characteristic
Eco-medical	Polluted hazardous	Medical clinical ecology	Healthy living caring	Passive nontoxic natural tactile	A natural and tactile environment with ensure the health, well-being and quality of life for individuals
Eco-social	Social context hierarchical	Sociology social ecology	Democratic home individual	Flexible participatory appropriate locally managed	Reconciliation of individual and community in socially cohesive manner through decentralized "organic", nonhierchical, and participatory communities

The six approaches are not mutually exclusive, but each give priority to things or approach each other as a support medium.

Briefly explained that: the logic of eco-technics, base the development of science and technology to provide solutions environmental problems;

The logic of eco-centric, emerged from the standpoint of nature which emphasizes the dynamic interaction between the biological and non biological as a community of interdependent parts and that emphasize moral considerations;

The logic of eco-aesthetic, put forward about what is called the concept of a new discourse, which emphasizes spirituality in social relations and the environment that describes the vision idealistic global awareness, which stems from a reflection of individual and awareness of ecology, and which then can lead to the stability civilization and a new culture overall;

Eco-cultural logic, emphasis on decentralization and consider its characteristics and biological characteristics of the area;

Eco-medical logic, explores the medical rhetoric, to focus attention on the adverse impact of the built environment and the causes of stress that cause health problems, both physical and psychological. This points to the sick building syndrome, which has the potential to degrade in the environment;

The logic of eco-social, suggesting the creation of buildings, which expresses the idea of a social community where environmentally sound democratic values such as full participation and freedom is the norm followed.

Implementation in the kampung Kauman more emphasis on eco-techniques and eco-social as parameters are more visible in the study area.

### 2.2. Islamic values in sustainable settlement

Green open space implementation in settlement in harmony with islamic values which was adopted by most of Kauman community. Islam teaches that live in harmony with nature. Many verses of Qurqn and hadits that tells about environment. One verse says: "Laa tufsiduu fil ardhi ba'da ishlahiha (Do not ruin this nature, destroy this earth after extremely well done)

According Hamdi (2012), the fundamental basis of environment sustainability in Islam comes from two sources, Quran (Islam holy book) and Hadist Muhammad SAW. Hadith are all the words (sabda), deeds, statutes and approval of the Propeth who use legal provision in Islam.

Basic environmental conservation according to the Qur'an

- Preserving the environment is a manifestation of faith

“And don’t you make mischief on earth after the Lord improve it, which it better for you if they actually who you believe” ((QS . Al-A’raf [7]: 85)

- Damaging the environment is the nature of hypocrites and evildoers.

“And when he turned away (from you), he walked on the earth to make mischief therein and damage all kind of plants and cattle, and Allah does not like havoc” (QS. Al-Baqarah [2]: 205).

- The universe is a gift from Allah to human.

“And He has subjected the ark to you that its sail to the ocean with He will, and He has subjected the rivers to you, and anyway He subjected to you the sun dan moon are continuously circullated (in its orbit), and has subjected to you day and night”.(QS. Ibrahim [14]: 32-33)).

- Man is the vicegerent to maintain environmental sustainability

“And it was He who made you as sovereign on the earth and He raised some of you about most of (the other) a few degrees, to verify you on what He has given to you. Surely your Lord is swift torment and indeed He All forgiving and Mercifull” (QS. Al An’am [6]: 165)

Some hadith contains suggestion and prohibition to maintain nature surroundings. There are hadith about ban on cutting tree, ban urinating in holes in the ground, under the tree and in the stagnant water. Holes in the groung is tiny life. Under the tree are usually used by people to take shelter. While urinating in stagnant water ban is an attempt to prevent water pollutan and disease.

While Islamic Concept about environmental preservation by Yusuf al Qardhawi (2001) is as follows

- Planting and greenery
- Plowing and fertilization
- Maintain cleanlines
- Maintain natural resources
- Protecting human health
- Friendly environment
- Protecting environment from the damage
- Maintaining the balance of nature

One of the important concepts for green open space existence is planting and forestation. It is a form of eco-technique in which the concept of planting and greenery is one way that can be considered to solve environmental problem, especially pollutan and global warming. Within the limitation of land, the innovation of community like tabulampot, vertical garden, hydroponics, that became an alternatif in the green open space procurement. Whereas the application of community involvement concept in planting and greenery is part of eco-social in sustainable architecture. Society as a community was moved to care about the environment and want to do the planting and greenery in their neighborhood.

### 3. Methodology

Implementation and green open space quality assesed through comparison between the land, building and private green open space area in some plot were used as sampling. RT III RW 3 Kelurahan Kauman been due to the success of nominated for Kampung Hijau Malang Competition 2014. In this area, green open space materialized through the presence of trees and vegetation associated with the initiative and concern community to the environment. Calculation on a sampling taken from some units of each housing type (small, medium, and large). Therefore, it will be found the percentage of totally private green open space.

### 4. Discussion and conclusion

The data collected from counting on filed will be analyzed and discussed.

#### 4.1. Private green open space is one of environmental problem solve in urban kampung.

RT 3 RW 3 Kelurahan Kauman located behind masjid Jami’ Malang. There are approximately 36 head of families who occupy an area of 6800 m2. Dense residential condition and limited land become obstacles for greenery procurement in this area. Of the result survey and observation, there are several placement models of greenery in the house.

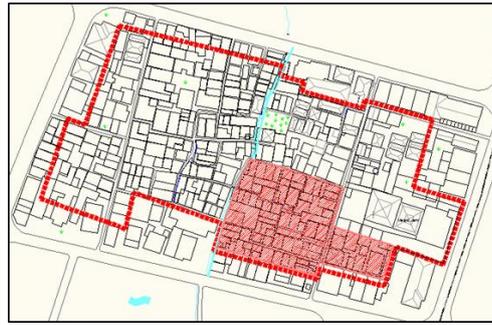


Fig 1: RT 3 RW 3 area in Kauman Malang



Fig 2: Placement models of greenery

Besides of ornamental, fruits and vegetables plants, medicinal plants are also encouraged as part of the community effort to maintain the health of the family. Medicinal plants are usually planted along side vegetables and ornamental plants. There is no special place for medicinal plants/herbs in kampung Kauman, but people planted it in between the existing plants. Benefit of plants such as kencur, ginger and turmeric is still frequently practiced people in Kauman. Kencur beneficial as cough medicine, ginger and turmeric as antibiotics, as well as medicinal plants that propagate like binahong and betel. In addition there laos, salam and kunci as a food seasoning.

Table 2: Types of fruit plants

No.	Fruits	Count
1.	Belimbing sayur	1
2.	Papaya	4
3.	Mango	3
4.	Starfruit	2
5.	Srikaya	1
6.	Jeruk pecel	5

Source: Survey 2015

There are at least three benefits of greenery communities experience. The first benefit is ecological, birds, butterflies and other insects that are present around the plants. The second benefit is economic, where people can save money for the purchase vegetables, fruits or medicine. The third benefit is the fresh air in the settlements due to abundant supply of oxygen during the day that can eliminate fatigue and stress.

#### 4.2. Community participation in implementation of private green open space

Community participation is strongly influenced by stakeholder as one of the key holder. In this case, the head of RT and his staffs are representative the head of Kelurahan. Forms of community participation are many kinds. There are active and passive participation. Active participation through direct activities carried out community like planting trees, participated worked together to build kampung infrastructures and helped maintain the cleanlines of environment. Whereas passive participation by supporting environment improvement programs such as pay dues cleanlines.

There are three tendencies attitude of community, the first people who behave well towards green open space will better participate in its management. Second, those who behave well towards green open space is not necessarily better participate in its management. And the third that behave and participate not always consistent over time (Azwar, 2005). For example in kampung Kauman Malang, base on research result of communities participation in private green open space management is **moderate**. Based on observation in the field, from 36 houses in RT 3, a small portion (30%) household has less private green open space circulated from 0-5% of the crop, the majority (60%) has a page that planted calculated 5-10% of the crop, while the remaining 10% with privat green open space more than 10%. Program socialization is done through various activities in the community, such as social gathering, PKK, recitals, and youth organization. One of them by forming groups *dasa wisma* (every 10 houses) with priority on greenery and waste management.

**Table 3:** Tipes of greenery and percentage of house participating

Type of artificial plants greenery	Artificial plants	Placement in the house	Count of house	Percentage
Plants grown in soil	Puring, soka, lidah mertua, sri rejeki, beras kutah, bunga sepatu, bambu kuning	Edge, fence	11	30%
Vines/ vertical garden	Markisa, labu, dolar, sirih merah, sirih hijau, sirih gading, gambas/ oyong	Edge, in front of the house	4	11%
Potted plants	Lidah mertua, lili paris, kuping gajah, sri rejeki, melati, mawar, bougenvile, bunga mangkokan, pandan, kaktus, gelombang cinta, sedap malam, wijaya kusuma, pandan wangi, dll	Edge, page	29	80%
Nothing	-	-	2	6%

Source: survey 2015

Increase private green open space in settlement has been done by community as one of local wisdom with work together to greenery, clean the waste, promote tabulampot, hanging plants, and roof garden in their narrow houses. Try to utilize every inch of the remaining lands as a means of increasing extents green open space. Increase green open space can lower the ambient temperature, reduce air pollutant, increase oxygen level and restore habitats for birds, butterflies and other insects.

The government implement the strategy through competitions between kampung in collaboration with the private sector. Kampung Greenery Program by acquiring privat green open space, counting the green courtyard, schools, office, etc, and is calculated as privat green open space (target 10%). Government Program Policies in UUPR will be reached if community was involved through activities such as social gathering, recitals, youth organization, etc. Understanding of greenery or green open space obtained through education, training, sharing experience and competitions programs, touch up community to make it happen. Implementation of greenery sustainable activities is one form of community participation in the improvement of private green open space on kampung environment.

## References

- [1] Al Quran, Al-A'raf [7]: 85, Al-Baqarah [2]: 205, Ibrahim [14]: 32-33
- [2] Al Qardhawi, Yusuf (2002), Islam Agama Ramah Lingkungan, Jakarta, Pustaka al Kautsar
- [3] Almath, Dr. Muhammad Faiz (2015), 1100 Hadits Terpilih: Sinar Ajaran Muhammad, Jakarta, Gema Insani Press
- [4] Azwar, Saifudi., (2005), Sikap Manusia (teori dan pengukurannya), Yogyakarta, Pustaka Pelajar.
- [5] Guy, Simon and Farmer, (2001), Reinterpreting of Sustainable Architecture: The Place of Technology, Journal of Architecture Education, pp 140-148, ACSA, inc.
- [6] Hakim, Rustam, (2009) makalah: Persepsi Masyarakat terhadap Aspek Perencanaan Ruang Terbuka Hijau Kota Jakarta (<http://rustam2000.wordpress.com/persepsi-masyarakat-terhadap-aspek-perencanaan-ruang-terbuka-hijau-kota-jakarta>)
- [7] Hermits, Ir. MT Herman (2007) Pembahasan tentang Undang-Undang Penataan Ruang (UU No. 26 Tahun 2007), Bandung, CV Mandar Maju
- [8] Peraturan Menteri dalam negeri No. 1 Tahun 2007 tentang Penataan Ruang Terbuka Hijau di Kawasan Perkotaan
- [9] Peraturan Menteri Pekerjaan Umum Nomor: 05/PRT/M/2008 Tentang Pedoman Penyediaan dan Pemanfaatan Ruang Terbuka Hijau Di Kawasan Perkotaan