Self-governing “Green Alley” implementation as the solution to address environmental challenge of public housing in Depok City

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Abstract. Conflict between increasing residential density and demand for comfortable life in a growing city is inevitable. This occurs not only in urban areas, but also at neighborhood level. These issues are increasingly aggravated by perception towards urban society characters, which are considered individualistic and ignorant to their residential environment. Collective efforts in resolving the issues are deemed as challenging. RW 16 in Baktijaya sub-district was selected as the research location because it is one of the first public housing projects, which was built around 1980 in the suburban areas of Jakarta. This research begins with two questions: “What is the history of landscape transformation in RW 16 of Baktijaya sub-district?” and “How did the community promote collective actions in addressing the greening problems in their settlement?” Primary data were collected by conducting transect walk and in-depth semi-structured interviews with several key informants. This study found several findings. First, based on historical transect, there has been a significant landscape transformation from 40% of Building Coverage Ratio (BCR) in 1980 to 90% to 100% BCR in 2017, which have reduced open green space in the public housing area. The second finding of this study represents a unique lesson. The citizens have created a new structure, with emphasize on spatial awareness and collective supports that have enabled them to become a community with a robust social capital, that can collectively respond to environmental issues. Collective efforts generate creativity in using space between buildings and streets and turning them into green corridor, which was refreshing the residential nuance. Various green competitions have allowed the community to express and channel their creative ideas. Collective efforts to convert aridity into green corridor in RW 16 of Baktijaya sub-district can be referred to as an interesting solution to resolve greening problems in urban area.

1. Introduction
Depok is a city in Indonesia that enjoys fast growth. Statistic shows that its population growth rate stands at 3.9% and the economic growth is recorded at 7.51% [1]. The strategic location of the city that is bordering DKI Jakarta, the national economic center and capital city, is one of the contributing factors to the high increase. In the 1980s, Depok was chosen as the first location of the pilot project for public housing development to overcome the housing issues in Jakarta. Based on the Government Regulation No. 26 Year 2008 on National Territory Spatial Planning (RTRWN), Depok is projected to become a new National Activity Center (PKN) in Indonesia.

One of the unique and interesting phenomena of Depok is the initiatives of its residents to independently create comfortable housing spatial planning despite the spatial density. An example of such initiatives can be seen in RW 16 of Baktijaya sub-district, Sukmajaya district, Depok. The residents have created an interesting and comfortable housing spatial planning, using neat, hygienic, and green concepts. Such phenomenon is the manifestation of the New Urban Agenda, that was defined in the UN Habitat III Conference in October 2016, which places human dignity as the center of the improvement of urban quality, above physical infrastructure development and other factors [2].
This means urban development paradigms should include all the potentials owned by urban residents, by allowing them to present their ideas in improving the quality of life of the urban society, be it physically, economically, and socio-culturally.

To begin this study, the researcher came up with two main questions, which are the history of the transformation of the spatial landscape of RW 16 in Baktijaya sub-district and the methods used by the society or local communities to foster collective actions in addressing greening issue in their residential area.

2. Research Location
The research took place in RW 16 of Baktijaya sub-district, Sukmajaya district, Depok. The location was chosen because of its uniqueness and visual contradiction compared to the outlook of other urban small public housing in general, especially in Jakarta, Bogor, Depok, Tangerang, and Bekasi. Most small public housings are dense, dirty, arid, and lacking in greening. However, the RW 16 area presents different display. The space looks clean, neat, and green, despite its density with Building Coverage Ratio (BCR) of more than 80%. This location has won several awards from various levels of competitions. Those facts encourage the researcher to learn about and study the implementation process of the green spatial planning of RW 16.

Figure 1: Research location in RW 16 of Baktijaya sub-district, Sukmajaya district, Depok.

3. Methodology
This research uses phenomenological approach to seek and find the meaning of visible phenomena and incidents [3]. According to Campbell (1994), as quoted by Wirawan (2012), phenomenological approach stems from subjective mindset and later attempts to find the meaning of certain visible symptoms [4]. This study uses inductive approach in managing data from field studies and reference, theories. Data from the social world are constructed into theoretical relations [5]. Surveys and in-depth interviews with key informants in RW 16 of Baktijaya sub-district were conducted to obtain data and information during the field studies. The informants involved in the interviews are an RW16 administration member, head of local integrated service center (Posyandu), a local health program activist, head of local women organization (PKK), and a leader of greening initiatives.

1 RT stands for Rukun Tetangga, which is a neighborhood organization that is formed by the residents within a neighborhood and serves as the partner of sub-district administration in empowering the said neighborhood.
RW stands for Rukun Warga, which is a citizenship organization formed by the neighboring RT administration members.
RW is structurally located below the sub-district and above the RT.
4. Result and Discussions

4.1. Spatial landscape transformation in RW 16 of Baktijaya sub-district

The public housing inside the territory of RW 16 of Baktijaya sub-district is one of the low-income public housing projects managed by the Government of Indonesia that is located in Depok. Exploration of the research locations concludes that the national public housing (Perumnas), built by the government from the 1970s to 1980s, is categorized as low-income public housing. The first informant, Mr. Abdullah, the secretary of RW 16, described this low-income public housing situation in the 1980s as "potluck" or "whatever is available". Ms. RA Sumarti, the head of the local integrated service center (Posyandu) and the second informant, used the term "standard house", while the third informant (Ms. Sri Indra Yati, a local health program leader) labeled it "low-income public housing" or "public housing for the poor". The fourth informant, Mr. Noer, a leader of greening initiative, referred to it as "start-from-basic public housing", and Ms. Harjito, the fifth informant who is the head of local women organization (PKK), called it a "public housing for migrants". Those descriptions of low-income public housing match a theory phrased by Laquian (1983) that the principle of providing low-income urban housing is referring to the principle of basic housing that is often incapable of fulfilling the necessity of the residents properly [6].

Within less than 30 years, the public housing has undergone big transformation due to several factors, which results in many phenomena. The public housing was a low-income public housing with approximately 16% BCR, but has now turned into a middle-income public housing with 80% to 100% BCR. The change occurs not only horizontally (extension), but also vertically (intensification) by adding more storey. The extension was conducted gradually by adding more buildings within a land slot area. Common buildings in the area consist of one bathroom and one multi-function room used as bedroom, living room, dining room, and many more. Such arrangement was changed by the residents into more complex buildings with different rooms for specific allocations (living room, bedroom, dining room, garage, etc). Intensification was carried out by adding another storey to the several buildings owned by residents with sufficient financial capability.

![Figure 2: Changes in building usage and in number of storey](image)

After processing the data and information from several key informants, it can be concluded that the following factors are influencing the building usage:
1. The increasing number of children, and the fact that children are growing into adults.
2. Better income (better financial capability).
3. Spatial necessity to host a big number of family members.
4. Spatial necessity for car or motorcycle garage.
Those factors have caused quite significant changes in the landscape of the public housing in RW 16. It turned from a public housing with less than 16% BCR into a public housing with tall buildings and BCR of almost 100%. Using Figure Ground Analysis [7] to analyze the textural relation between building mass and open space, the following transformation is presented:

![Figure 3: Comparison of Figure Ground Analysis of RW 16 in 1980 and 2017](image)

The accumulation of the whole transformation process, both extension and intensification, of the public housing in RW 16 has turned the area into a public housing with high density of tall buildings, heterogeneous building shapes, but similar pattern of change. Under such conditions, the only space available was the space between the buildings and the streets, or the space above the sewer. The available space was later used by the residents for greening using pots as the media. This method is mentioned by Irvine, et al. (2010) as potted plant [8].

4.2. Neighborhood work pattern of RW 16 residents in green alley implementation at the public housing

The Neighborhood Work concept, introduced by Paul Henderson and David N. Thomas (1980) in their book entitled Skills in Neighborhood Work, can serve as an approach to solve issues that occur within a neighborhood, using face-to-face interactions [9]. In the case of residents of RW 16 in Baktijaya sub-district, the early stage of the Neighborhood Work started from the migrants who came from heterogeneous socio-cultural background. Through repetitive, routine and long adaptation and interaction, the heterogeneous neighborhood was arranged into territorial-based organizations, which are the RT and RW. It was followed by the formation of norms, social interactions, solidarity, and social concerns among the residents in facing the issues that occurred in the neighborhood. In the early stage, the structural organizations in the RT and RW scope, such as PKK and Posyandu, were only running their usual, routine, and general activities, such as demographic service, road repair, construction or renovation of places of worship, family welfare empowerment, health services for babies and senior citizens, and many more. As time passes and development in the area intensifies, another social issue occurred, which is the aridity of the environment. This issue drove the residents to gather, have discussions, and work together on a solution. The efforts resulted in perceptions and imaginations regarding the ideal and expected environment condition.

Based on field study and interviews, there were at least four imaginations expected by the residents, which were:
1. Neighborhood condition that is refreshing in the eye;
2. Neighborhood that is loaded with many plants, to make the neighborhood a comfortable place to stay;
3. Green environment that is neat and able to cover the dirt parts of the buildings;
4. Neighborhood that implements the „green alley“ concept.
Those imaginations served as strong motivations in solving the environmental issues collectively. The residents worked together on their expected imaginations, turning the dreams into more than just utopian wishes. Stout (Stout, 2011:14-15) said, “A collective vision is not a utopian vision. It is grounded in reality. Grounded, collective vision creates a pathway to power. It keeps us focused on the destination as we travel together toward it” [10].

The followings are the steps of Neighborhood Work taken by the residents:
1. Neighborhood meeting to address the issue;
2. Door-to-door information provision by administration members of RW/RT/PKK;
3. Exemplary leadership by and motivation from local figures (greening leaders);
4. Free implementation of greening, “whatever is available”;
5. Implementation of 5 potted plants per house suggestion;
6. Implementation of continuous line of potted plants along the street or alley;
7. Competition between RT held by the administration members of RW and PKK;
8. Registration to higher level competitions by administration members of RW and PKK.

The Neighborhood Work and the creativity of the residents in creating and implementing the green alley concept have turned their public housing from an arid, hot, and uncomfortable neighborhood into a green and cool environment.

![Figure 4: Green alley in RW 16 of Baktijaya sub-district, Depok](image)

This research also finds another aspect that enhances the collective work of the residents, which was competition. By holding competition, the residents were driven to brainstorm the ideas and to work harder and better in implementing the green alley concept. The competition also motivated the residents because they received appreciation and recognition that all their hard works were not in vain. The findings of this research further support the opinion of Putnam (1993) regarding social capital. Putnam said that social capital is self-reinforcing and will not deplete [11]. It will, instead, increase with use. Competition evidently triggered the self-reinforcing character of social capital of the neighborhood, which eventually creates stronger social capital in the neighborhood.

5. Conclusion and Recommendation
The spatial and residential phenomena in RW 16 of Baktijaya sub-district, Depok show that changes in the intensity of spatial usage in urban areas are inevitable as there are more spatial needs for growing families. It has resulted in decreasing comfort of the neighborhood due to lack of space for greening. The issue eventually provoked the ideas and creativities of the residents to keep their neighborhood comfortable despite the limited space. With collective creativities and work, they came up with and implement the concept of green alley in their dense public housing.

This research has contributed by offering new solution for urban spatial management system at
neighborhood level (RT and RW) that can be self-organized by residents with strong social capital. The government, as the formal city administrator, does not have to be directly involved, but can contribute by making initiatives that motivate the residents in creating living environment as comfortable and appealing as possible.

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