*Generating Sustainable Green Open Space Development in Urban Residential Areas through Community Participation Approach*

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ABSTRACT

The increase of urban population is closely interconnected to the demand for living spaces that accommodate various urban activities. When the balance between the need for, and the availability of, such spaces is disturbed, unlivable spaces are generated which would eventually downgrade the quality of urban environment. Bearing in mind the increasing clamor over global warming during the last two decades, Urban Planners should carefully anticipate the issue and put their focus on, and even provoke the creation of Sustainable Green Space Development, including the creation of open green urban spaces. Accommodating the aspirations and participation of citizens, through the application of the development principle based on “from, by and for them”, becomes a most important part of the strategy to achieve sustainable development patterns. The worsening environmental deterioration due to the stakeholders becoming unheedful about the issue should be taken into serious consideration. In the study, observations have been conducted in a descriptive manner by using a non randomized experimental design using control at three neighborhoods in West Jakarta, with one of them being the controller. It was showing that after the first 6 months, the application of green environment approach in the neighborhoods was maintained through self-help and communal actions. Community organizations that have been established on the spirit of mutual cooperation becomes determinative for the success of such sustainable pattern; the sustainability would in phases also improve the people’s economy and their social interaction. The involvement of local governments, the private sector and the community would also greatly influence the creation of Sustainable Green Development Pattern, and should continuously be evaluated and improved for replications in other locations in an ever perfect process.

Keywords: sustainable, green open space, participation, partnership.

1. Introduction

Urban areas develop in line with the fast growing number of incoming people who are tempted to settle because of the seemingly great attractions offered by cities which become destinations of urbanization. As such, urban birth rate accelerates, increasing the demand for new housing areas. Urban spatial and land use planning develop horizontally and vertically, complemented by a proportional planning of the necessary infrastructure. Residential areas expand with the development of new settlements as well as through the renewal or improvement of several old housing areas located in the city centers, causing increased densities.

Ideal spatial planning is applied to the new settlement areas through the creation of proper balance between closed and open, green areas to foster quality, healthy and humane life for the people. Bearing in mind the increase of global temperature during the last decade, which has triggered a great number of natural disasters world wide, it has now become of utmost importance to apply the green-life principle for the benefit of the whole world.
Essentially, green-life principle is saving and maintaining natural resources in all activities which should be understood and applied by mankind.

Initially, this principle should be generated and applied within every household, and further extended to the respective settlement up to the entire district and urban levels with the ultimate goals of creating a green development. Several literature and practices around the world reveal that green development can be conducted through consistent green life style which should eventually result in a sustainable green development. It is therefore exigent to disseminate the principle properly, comprehensively and in a fast as well as in a target-oriented manner. Points to be publically communicated are for example the need to save and conserve potable water, decrease pollution by proper waste management, taking up healthy life style through the creation of clean, tranquil and verdurous environments which could well be done by increasing the number of shady and leavy trees in the dwelling environments. Furthermore, energy saving measures through making use of natural resources such as sun rays, wind, and waterfalls if available. The ultimate goal is to foster public awareness that would stimulate real actions.

In the context of urban settlements, the importance and meaning of this principle is integrated into the spatial planning process through the planning of green open spaces in proper balance with the closed environments. The creation of green open spaces in settlements should be followed by the necessary proper maintenance. This is a critical point as without maintenance all that have been initiated and planted would eventually disappear which would curtail the expected impact against all the expenditure and make the whole effort uneconomical. This would especially happen if the green environment campaign is left to the local administration without being complemented by any communal action or role; the whole campaign would be totally ineffective.

New residential areas that are planned and built by private developers, and which are generally catered for the middle and upper classes, have a well planned spatial planning with a properly balanced division between the closed occupied areas and green open areas. The maintenance of each green area in the front, side or back gardens is carried out by the respective occupant. The maintenance of green open areas outside the housing plots is initially carried out by the local administration, to be later taken over by the respective housing management and financed by the residents who are not directly involved in the proper activities. In densely urban housing areas of the middle and low income groups, besides the limited open space within the settlement areas, the management depends on the participative and mutual self help actions of the community. In settlements without the communal spirit and self help actions, the principle of green living is naturally absent. This study puts the focus on such settlements.

The clean city and green development campaign through the implementation of sustainable development has been conducted for one-and half decade. Quite a number of community organizations, communal self help institutions, community-oriented institutions within universities as well as programs of local authorities have been actively involved in the efforts to anticipate and address the problems of this issue. Some have succeeded to achieve positive results and persevered, some have booked initial success but then meandered off due to inconsistent actions, though some have even managed to achieve much more than planned. Those different cases in three settlements in West jakarta are elaborately discussed in the present study.

The non-physical aspect, community participation, is further referred to as soft technology which should be properly planned; then there is hard technology which refers to complying with technical computations. The two technologies should be integrated in a balanced manner in order to successfully generate sustainable development programs. By conducting a study using a non randomized experimental design through the application of control (Abramson, 1990), it has become clear that the program’s success is equally determined by the availability of partnership from the stakeholders which comprise the respective community, the local authorities and private developers. To obtain program
sustainability, it is exigent to have the commitments of those stake holders in the implementation of all the activities by also taking into consideration the aspect of process besides the technical aspect, through the integration of the respective social, economic and environmental aspects.

2. Sustainable Green Development through Community Participation Approach.

Currently, the term ‘sustainability’ has already become an everyday term that is so often used and widely spoken; however, we do sometimes wonder if its true meaning is equally comprehended. In addition, it is also important to distinguish between “sustainability” and “sustainable development”. From several discussions on a number of references, it is concluded that “sustainability” in general means the capacity of natural systems to endure, to remain diverse and productive over time. Sustainable development, on the other hand is the practice of humans arriving at a level of economic and social development that does not inevitably alter ecological balance (Slavin, 2011).

Sustainability in development programs is achieved through a multi-sector planning pertaining to the aspects of economy, food production, built environment, transportation system, utilization of water and energy and waste management, all of which should be environment friendly. Hence, sustainable development is invariably connoted to Green Development or Green Life Style. The ultimate result of sustainable development is an improved social life. It is therefore necessary to observe the following three main aspects pertaining to the implementation of sustainable development: the environment, social and economic aspects all of which should be integrally intertwined. This comprehensive meaning should be disseminated and socialized among all development stakeholders. The method of dissemination and socialization should be effective and should not follow the pattern of modern development theory which tends to be ‘top down’; but rather, it should be conducted with the active participation of all actors involved in the collective planning, formulation and implementation according to their different respective roles and abilities. It should be conducted in a participative approach by putting the interests of local communities as the focus of development programs which can be achieved by transforming ‘experts’ into ‘facilitators’ who collect local knowledge that enable all actors according to their respective capacities (Hickey & Mohan, 2004). The active participative role of stakeholders in development activities is determinative for the success of program sustainability in a holistic manner.

The implementation of sustainable green open space development should be conducted in all lines of development, including in the development of urban settlements through the integration of the respective environmental, social and economic aspects of the community. From several literature it can be summarized that the aspects of environment, sense of openness and space for reflection have become the main focus of interest in planning Green Open Spaces in the urban areas; this should first be commonly agreed by the community. The provision of green open space has the objective of creating a balance in the rapid physical urban development; it is like providing treatment to the psychological mental balance of the urban inhabitants (Carmona, 2003). Green life style will move the people to prioritize adopting natural sustainable system within urban growth that is currently solely motivated by economic development interests. Psychologically, the creation of green open space would improve community creativity due to the verdurous natural surroundings which would act as a mental refreshing agent for urban inhabitants, making them become more innovative and creative.

Viewed from the communal social aspect, there are three points that need to be taken into consideration in planning sustainable development; they are the principle of democracy, the principle of justice and the principle of sustainability. Pertaining to the principle of democracy, the interests of the community should be prioritized and all the
information obtained should be accountable to the public. Participatory planning that involves active participation of the public right from the planning process provides the solution to underline the democratic nuance (Servaes, 1996). The principle of justice is implemented in a transparent planning system as it provides the opportunity of proportional distribution of the benefit and cost. The principle of justice dictates equal treatment to everybody, underlining the importance to manage natural resources for the benefit of future generations. The principle of sustainability emphasizes the awareness of long-term planning. It is necessary to formulate development actions that put the focus on innovate breakthroughs in energy saving and conduct research in alternative proper utilization of resources so they can benefit the life of future generations.

The economic aspect entails economical fund management in the implementation of all development activities. Solution to limited funding can be achieved by implementing development in stages. Problems may arise when development in stages do not run consistently, and in some cases it may even be impossible to continue the implementation, resulting in uncompleted development due that is to absence of funds. For the implementation of successful and economically resilient sustainable development, it is most exigent to have a planning that would effectively take advantage of the available potentials; this could be achieved by building a sense of ownership among members of the community so as to encourage them to fund the maintenance independently. As such, environmental quality would be gradually established by the community themselves. The three above-mentioned aspects need to be scrutinized and adjusted particularly to the respective field conditions, issues and potentials. Community participation starting from the planning stage up to the implementation and evaluation of the program should be consistently maintained. Through discussions with the community, an analysis could be made as to which aspect should be decided as an entry point for all the activities, in order to avoid possible impeding constraints.


The terminology of ‘green development’ refers generally speaking to all environment friendly development actions, that emphasize maintenance and non-pollution of the natural environment, the innovative usage of renewed energy, water conservation, limiting air pollution globally; in short, all development activities that do not destroy the ecosystem.

In the following will be given several results obtained from field studies at a number of housing areas in West Jakarta, using the non randomized experimental design using control. The study observes the creation and maintenance of green open space and green life style in three study locations. Before the developments were observed in the three locations, exposures and trainings were first provided on the importance of sustainable management of green open areas by the community. The study locations were: RW 4 Housing Settlement, North Kedoya Subdistrict, RW 01 Housing Settlement, South Sukabumi Subdistrict and RW 5 Housing Settlement, Palmerah Subdistrict. In the last two settlements, implementation of the development activities had been continuously monitored through participative approach, and observations made in the first settlement, RW 4, North Kedoya Subdistrict, was discontinued after successfully conducting the initial training; the location was then determined as a point of control.

Physical data of the three study location show the same general characteristics: densely populated settlements located in the center of West Jakarta, people have easy access to enter and leave the settlement although the road access in front of the houses are pedestrian paths, have public electricity, accessible to potable water with each occupant having his or her own ground water well, and the average earning of the family head belongs to the middle lowe income group working as laborers, private entrepreneurs with a few being civil servants. Due to the population density, the housing plots are almost entirely covered by
houses and the public space comprises the pedestrian paths in front of the houses and very narrow front gardens.

The study was started in the beginning of 2005; the physical appearances of the green open public space in the three locations were the same: they all depended on the government maintenance initiative which in fact was very limited indeed. Community comprehension about green life style was also non existent, and as such the outside space tended to appear arid, hot and unclean. The action for clean living and creating verdurous and cool settlement environments by the municipality was conducted following the relevant programs of the central government which comprised increasing awareness of urban communities on environmental cleanliness and greening of urban areas.

Several locations in the city had been made as monitoring points for the “Adipura” award (for green and clean environments) which is a central government program. In the middle of 2005, the three study locations were part of more than a hundred monitoring points for the Award in West Jakarta. Consequently, the local authorities had intensified maintenance activities. The actions taken by the respective subdistricts were assisted by the West Jakarta Community Forum of Environment Conscious Community (an NGO in the field of the environment) and the Community Service Institute of Trisakti University which encouraged the inhabitants to actively maintain the parks and gardens by conducting information campaigns and periodic field actions using participative technology. Since the evaluation was done every four months and the findings were then disseminated nationally, the local communities were motivated to act in the third month after the first evaluation. Information material was drawn up with the participation of the community, and agreed upon before dissemination in the field. Members of the community were selected in a non-randomized manner since the people living in the study locations were given priority.

In the first location, RW 4 Housing Settlement of North Kedoya Subdistrict (Fig 1.1.), drawing up the program was started by giving initial information and conducting the Planning, Agreement and Implementation Program which was discussed during three participative meetings led by a facilitator from the Support Program who played the role of External Motivator. Initial Drawing up and Planning was done three times at the beginning of the first three months through the formulating and toing down the problems that need to be solved, and formulating the follow-up steps and action stages which were adjusted to the local available potentials. This was followed by monthly counselings and consultations in the fourth to the sixth months. Due to the chief of RW 4 Housing being very enthusiastic and the community’s high awareness and eagerness to achieve results in a short time, the creation of green clean and healthy environments could be completed in the 6th. month.

![Fig. 1: RW 4 North Kedoya](image)

After community participation had already been established, in the second month of the implementation of program 6, the chief Housing Settlement received funding assistance from the subdistrict head based on the results that had been achieved which was creating a clean, green and healthy housing environment. One year after the program was under way, the location won the price in the Jakarta competition of green and clean environments. As a present, the location received green support program phase two from private sponsors. In addition a number of green and clean cadres were appointed to follow training on Green Development; they were among others trained in appropriate recycling of waste water in order to maximize water usage, besides making simple absorbing wells. The community’s
initiative to participatively build a multi-purpose shelter as a meeting venue for the people had given a unique characteristic to the location. Since community participation had already been firmly established, the maintenance and utilization of green open space becomes one of the discussion topics during community meetings.

The sense of ownership of green open space has become an established part of the community’s daily life. In 2007, the location was chosen as model location for the surrounding area that has the intention to establish green and clean environments of their own. This year, RW 4 has become self-sustainable and independent as far as green and clean environment is concerned, and no more requires the assistance of outside motivators. That was the argument why in this study, RW 4 was made as point of control, since the other two locations are still working together with the supervisor who is acting as a partner consultant.

In the second case study, RW 1 Housing Settlement, South Sukabumi Subdistrict (Fig. 2.1.), the green and clean program was also implemented in stages using the participative approach. The implementation method did not differ too much from that in the first location. The movement to create a green environment through potted plants was started in the first third month. General environment cleaning activities were also conducted periodically, every first Sunday of the month as agreed by the community during a participative community meeting. At every community meeting, the location of the green spatial planning work program was discussed with inputs from invited outside resource persons. The new information transmitted to the community included management of household waste; waste is turned into compost for the benefit of the inhabitants and when there is a surplus of compost, it is to be sold and the proceeds transferred to the community chest. As such it was hoped that all activities organized by the Housing Settlement would be self financing.

![Fig. 2: RW 1, South Sukabumi](image)

Since all decisions were communally agreed upon, including the time table of community meetings, and although mass actions pertaining to green and clean programs were not too often conducted due to the citizens’ limited free time, it was still possible to establish and maintain green environments albeit at a slow pace. The people’s sense of belonging to the programs was gradually established. Green and clean activities were replicated in stages throughout the whole housing settlement during three years. As of today, there are 5 field cadres (internal activators) in the RW 1 community organization and consultations with supervisors who act as external motivators, are still being conducted. The third location comprises RW 5 Housing Settlement, Palmerah Subdistrict where maintenance of the clean environment, greening of the environment and generating green culture were all started in the middle of 2005.

Similar to the two previous locations, the RW 05 Housing Settlement at Palmerah Subdistrict (Fig.3.1) was inhabited by the low income group. Due to limited surface areas of the housing plots, the families in general, especially those with the status of extended families, had virtually no open space since the houses were gradually and informally extended, eventually covering almost the whole surface plot. The building density is very high and the open space has an average ratio of 10% of the house ground plan, while those
whose entire plot are covered by the building. The pedestrian paths running outside the houses are utilized as part of the outside open space. The atmosphere in this housing location is most suffocating and it is the typical housing settlement of the low income group that was gradually and informally built and expanded. This location was also included in the green and clean program with participatory approach. It turned out that within the first month, the inhabitants already started putting potted plants in the narrow outer space and even hanging potted plants above the pedestrian paths, and the pergolas along the pedestrian paths were hung with several decorative potted plants, even rare traditional medicinal herbs. Community participation was extremely high and every new program pertaining to clean and green environment was enthusiastically anticipated, among other things, by making compost from household waste and digging water absorption holes along the pedestrian paths in the housing environment. Mass cleaning programs were conducted every Sunday. The sense of program ownership had already been generated and had become a tangible part of the people's everyday life.

Fig. 3: RW 5, Palmerah

Although planning of green areas in stages had not yet been evenly conducted throughout the whole RW housing settlement, the initial supervised location already yielded more than expected as was partially evident in the activities of the environment cadres who participated in developing housing environments in other RW areas. Until today, the people in this location still work together with the initial supervisor playing the role of a consultant for the implementation of their program through the participative approach. Observations on the three locations were conducted during the last two years of 2009 – 2010 and the findings were quite astounding; the first case location which had progressed very rapidly has now fallen into a critical time. The quality of greening activities and the planning of green life style have declined. The program sustainability, that had been expected to be long term and sustainable, has become more uncertain; the situation is decidedly different compared to the last two locations where the participative approach in program development is still conducted consistently.

4. Discussions

The initial important step taken in the three case study locations was to transmit the comprehensive substance of sustainable green development to the respective communities, and to foster their awareness and appreciation towards it. Implementation of the program through participatory approach was carried out by treating members of the community as the main actors, and by transmitting information on an equal footing. Considerable time was required to convey the explanation and also since in the participatory process consensus by all participants was constantly sought, including training them to make self-assessments during the evaluation of activities.

From the trials activities conducted in the initial period in two locations, RW 4 North Kedoya and RW 5 Palmerah, in 2005 and in RW 1 South Sukabumi in 2006, it became evident that the participation rate tended to increase when the community’s way of deliberations and needs were taken into consideration when formulating information
materials as well as when implementing the program in the field. The same applied to the community’s awareness on the essence of sustainable development; they showed strong willingness to implement all development programs in their respective areas, including maintaining and developing open public spaces and green housing environments in the following years (2006 and 2007 for the second location). A number of external motivators were required in the process of developing community’s participation; this was done by the local authorities with the support of NGOs. In other cases, the community was able to make direct contacts with the NGO, without intervention of the authorities. In the first case of RW 4, North Kedoya and the third case of RW 5 Palmerah, facilitators as external motivators came in the initial period from the West Jakarta Forum of Environment Caring Community who worked together with several academics of the Community Service Institute, Trisakti University who provided the necessary technical assistance.

In the process of providing material pertaining to environment sustainability, social sustainability and economical sustainability, the local authorities had also been involved in their capacity as officials responsible for the area’s general well being. During the discussions, it was gradually realized who possessed the potentials as leaders among the community members; they would then be geared to become internal motivators and leaders at the same time. Such also happened in the second location, RW 1 South Sukabumi where the NGO person was also a local inhabitant. By adopting the existing community structure, comprising rukun tetangga (neighborhood association) and rukun warga (citizens association), the process of identifying people with leadership potentials in the three locations could be achieved in the third month during meetings conducted every three weeks. In the fourth month, the community organization for each location was appointed with the duty to draw up the organization rules that should be accountable to the community; in the end they were named ‘accountable organizations’. The process of establishing such organizations required some time and also the active participation of the community to develop social solidarity; this was necessary to ensure that the established organizations would function properly. Solidarity function is a social capital and is the wealth generated by participation. The higher the community participation rate, the higher is the social solidarity of its members. For example, maintaining the open space is conducted together in the spirit of partnership to minimize the expenditures. The saved money could then be allocated to acquire additional facilities and plants for the public open spaces.

Technical support provided by the academics in the spirit of partnership raised the community’s mobility. For example, members of the organizations in the three case locations were instructed by the technical support agents (NGO) in the technique of plant management and making compost manure from household waste. After implementing the acquired knowledge in their respective areas and having gained experienced, they represented their organization and became resource persons in other locations that require their expertise. As such, the spirit of solidarity to the community’s organizations was further enhanced and the solidarity among the members was strengthened.

The improved solidarity was complemented by the growing commitment among community members to keep their environments, located in such densely populated areas, clean and green; this took place through a process of several months. Working organizations among the inhabitants were also developed and through such organizations the inhabitants improved the cleanliness and greenness in their respective areas. It was first necessary to convince the inhabitants of the benefits of the several activities before the spirit of solidarity among them could be strengthened. Their eagerness to keep their environment clean and green by placing as many planted pots as possible was promoted to other sub districts. In 2006, the green and clean movements had been widespread among other densely populated neighborhoods in other sub districts. The Palmerah Housing Community for example had taught the technique of maintaining rare plants and they themselves were also taught by the community of RW 4, North Kedoya on how to turn discarded packages into saleable handicraft items.
The second location, RW 2 South Sukabumi also experienced the same process as the two already mentioned locations. However, it took a longer time. It was not possible for the external motivators to force the program implementation through the participatory approach, and the role of the respective stakeholders had to be called in. Green Development activities in the three locations were also monitored in 2009 and 2010. In RW 4, North Kedoya, which at the beginning of the 5-year time span had fastly progressed, showed a decline in activities during the last two years. This was due to the fact that at the end of 2009, no community meetings were conducted pertaining to participatory environment maintenance. It is not yet possible to establish the reasons why this had happened. What is already clear, however, is that the External Activator should be immediately called in to infuse fresh breath in the community organization in order for it to accomplish again its past excellent achievements.

The experience gained from the above cases indicates that external and internal motivators are indispensable in order to generate and improve the communities' awareness in maintaining and developing the potentials of their environments. Prior to this, it is necessary to establish the same perceptions and motivations among the inhabitants pertaining to what should be done. For their further development, it is necessary to involve other stakeholders in a partnership relation, such as private entrepreneurs.

5. Conclusions and Recommendations

Sustainable Green Open Space Development has an important role in supporting the social life of urban communities, as well as in balancing urban ecological conditions. Both points are important for the implementation of the sustainability principle into urban planning. Hence, it is necessary that all urban citizens should be informed of the importance of Green Concept in developing urban housing settlements; this is especially true for communities living in areas with limited open public space. The respective knowledge and new information should be continuously disseminated with the ultimate objective of creating a common perception that is to be used in the implementation of future development programs, particularly sustainable development.

The Principle of Sustainable Development through Community Participation Approach should be made known to all stakeholders and dissemination of this information should be conducted transparently in order to strengthen the sense of ownership among the community, which is indispensable for sustainable development. It is also necessary to conduct law enforcement of already existing local rules and regulations pertaining to the conditions for green open space in urban areas. An agenda need to be drawn up pertaining to the formulation of participative role divisions among the stakeholders, with the focus on sustainable development. Data bases on open public space owned by local authorities should be made and kept up to date.

It is necessary to establish a partnership between the government, communities and the private sector so as to arrive at a division of roles among the stakeholders, particularly pertaining to the creation of green open space in urban areas and to eventually maintain them and prevent them from deterioration. Such partnership would stimulate participative planning which would ensure that what have been mutually agreed would become the commitments of all parties concerned in conducting sustainable development activities.

References