Intervention Program to Change the Pro-environmental Behavior of the Riverside Community

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Abstract

The riverside communities devised a community-based program to negotiate with the local government to avoid eviction. As an intervention package,-which aims to upgrade the living environment and increase the residents' pro-environmental behaviour-, this program consists of organization and information, combined with social interaction, commitment and feedback performance. Intensive observations were used to examine the effectiveness of the program to environmental behaviour change and upgrading settlement. The findings reveal that having a common objective of renovation is the most influential variable in motivating individuals to increase environmentally friendly behaviour on the upgrading environment.

Keywords: behavior change, community-based, social interaction

1.0 Introduction

As the second biggest city in Indonesia, Surabaya experiences rapid population growth and struggles of economic development. In accordance with the idea of making Surabaya an international trade city, in 2002, more than 400 houses on the riverbank were demolished; the communities' homes and livelihood had been threatened with eviction for years. People did not know where and how to continue their living; since walk-up apartments provided by the government were unaffordable. It seemed that the dominance of the economic sphere shifted the environmental and social cost on to these poor communities with no political or economic power.

In response to this, residents of the riverbank settlement along Surabaya canal organized themselves and established the riverside community (*Paguyuban Warga Strenkali Surabaya* – PWSS) in 2004. They developed a community-based proposal to negotiate with the government, and showed how flooding could be avoided and city development could still be promoted, while still maintaining their living there without destroying the environment. Supported by Urban Poor Consortium (UPC) and Uplink, -non government organizations-, and experts from the universities, a technical study has been initially done. The result shows that in fact, the settlement of poor riverside communities was not responsible for most of the degradation of the river's ecological integrity, but the fast decline of forests on the upper hill, and the existence of industries and factories along the river were the main contributors. However, it is important to make people aware that the riverside settlements themselves could not be maintained as they are; they need to be upgraded, from a slum area to a healthy and sustainable settlement.

Resident's habits and decisions in using the river ultimately have a major effect on the sustainability of the river and their living environment. They did not show desirable and responsible environmental behavior. It is stated in their negotiation with the government that, they need to change their own behavior in their interactions with the riverside environment, in order to be more environmentally friendly.

After a 4-year struggle to propose the concept of renovating instead of relocating; in 2007 the government published a local regulation (*Perda* 2007) that allowed limited settlement's existence along the riverbank and gave the community five years time to upgrade their settlements instead of relocating them. This regulation is not the final objective of the community, but the first step which should be followed by realizing their own proposal. Considering that many behaviors need to be changed if they are to achieve a sustainable society, then priority and focus of the community-based program are of utmost importance. It is not a short term program, but rather,has been conducted for more than seven years to achieve their dreams of having a peaceful life that is free of eviction threat.

Over the past few decades, research that aims to increase environmentally friendly behavior or to reduce environmental degradation has received a significant attention. However, such research is lacking in developing countries, especially in poor community areas with huge environmental problems. This paper

is concerned with efforts of the poor riverside community to change their environmental behavior in their neighborhood. The main issues are to understand what happened to the people of the community before and after the government regulation was published to identify the variables that influence people to change their pro-environmental behavior and to examine the substantial and durable pro-environmental behaviors that change in relation to the upgrading of the settlement.

2.0 Literature Review

2.1 Environmental Behavior
Individual behavior toward the environment should have something to do with what they feel and what they think with respect to the environment and pro-environmental action. Study of behavior usually focuses on the determinant factors of personal variables, rather than situational variables which are related to the physical environment (Black et al., 1985). In their investigation, Joze AC & Jaime B (2000) pointed out that environmental behavior depends on personal (values and beliefs) and situational (physical environmental) variables in an interactive way. Interaction between personal and situational variables can be defined in terms of the degree of conflict or consistency between them. This conflict will be high when personal and situational variables are of different signs. This is when there is high/positive disposition to action but the situation makes it difficult, or when personal disposition to act is low /negative and the situation facilitates it. Consistency occurs when personal disposition and situational variables are of the same sign. This is when the personal disposition to the behavior is low and situation makes it difficult; or when the personal disposition to the action is high and the situation facilitates it. When the high conflict level is generated between personal dispositions and situational conditions, the predictive power of attitudes tends to be minimal. Meanwhile, it tends to be maximal when there is consistency between them.

Degree of conflict between personal and situational variables will influence people environmental behavior, whereas the influence of situational variables is found to depend on the environmental action considered. The understanding of these interactive processes will facilitate the raising of average levels of pro-environmental behavior, and propose a tentative explanation of differences in environmental behavior. Factors that motivate individuals to take pro-environmental actions are indicated in the study of Hines et al. (1986) and Aytul Kasapoglu & Mehmet Ecevit (2002) who identified the influential variables in motivating people to take pro-environmental action as cognitive, psychosocial and demographic**.**

2.2 Intervention Technique

Dwyer, et al. (1993) reviewed the effectiveness of some intervention techniques; they found that most of the techniques have difficulties in achieving durable behavior change, because there is a limited duration of the behavior change and generally they have only a limited number of behaviors as their target. Concerning the persistence of pro-environmental behavior change, De Young (1993) urged researchers to focus on developing interventions techniques that create self-sustaining change. He argued that durable pro-environmental behavior change can be facilitated by devising techniques that combine detailed procedural information, feedback of one's performance, and a supportive social environment. Geller (1990) also proposed this combination of elements to increase the effectiveness of intervention techniques.

Information is one of the most widely used means to promote pro-environmental behavior change. Information may serve to increase problem awareness, which in turn can affect behavior or inform people of other's efforts which may increase cooperation. Feedback of performance may increase the sense of individual and collective efficacy. Feedback may also trigger change through appeal to social and personal norms. However, without periodic application of feedback and information, the effectiveness at the individual level is reduced. Supportive social environment is the condition that employs social support. Lewin (cited in Staats, 2004) stated that one of the factors responsible for the success of changing behavior in a small group, is the social interaction that enables experience of group standards before an explicit decision is made. Hopper and Nielsen (1991) studied the impact of social interaction to change group standards, or social norms on recycling behavior, by identifying a person in the neighborhood who personally informed the people in the neighborhood about the program and encouraged them to recycle.

Henk Staats et al. (2004) developed an intervention program, the Eco Team Program (ETP), to overcome the limitation of the effectiveness of the intervention techniques. Unlike the general intervention techniques, this study examined the long term effects of participation in the ETP on changes in household behavior and environmental resources. This approach consists of (a) a group setting focused on the impact of social setting to discuss certain environmental household behavior, (b) information, which is presented in a workbook concerning the household problem, consequences of specific behavior change needed and details to execute the change (c) feedback sabout the accumulated results of the team stated in a newsletter form and given periodically. It shows that information, feedback and social influence from the ETP are successful in accomplishing long term pro-environmental behavior change, and increase the strength of intentions to explain behavior change, irrespective of previously existing change

3.0 Methodology

This study is based on a phenomenological approach, which aims to see more deeply and

unfold the essential nature of the community-based program. The data was collected through empathetic looking and seeing, a careful and comprehensive observation of the environment, in depth interviews with the communities. All of them are gained through visits and participation in the community's agenda since 2003. Documentary historical material and technical survey results conducted by was based on the literature review above, with the emphasis on discovering what and how concrete things, events, and experiences happened in the community. A holistic view seeks to maintain the uniqueness of the community-based program.

4.0 Results And Discussions

Discussions were made based on the collected data from 2003 to 2010. An initiative of the community to establish PWSS started in 2002, but it was formally announced in public as a community organization in 2004. Within that time, many agendas were taken individually by groups of residents in a particular kampong along the riverbank to protest against the government eviction. They were not yet well-organized as a big community, but indeed they were the pioneers of the PWSS. With the support and advocacy of some NGOs, in 2004 PWSS was established with members of 1033 families coming from 9 kampongs located along the riverbank. On average, they had been living on the riverbank for 30 years (51.4% = 21 years; 4.3% = more than 50 years). The main reason to live on the riverbank is economic value (42.1%) (56.1% have the work-place less than 1 km from their houses, 15.0% in 1-3 km away; and only 5.3% mentioned the river as the pull factor). Source of information that led them come to the riverbank were families (37.5%) and friends (17.1%) from the same village they originally came from.

All kampongs are very dense settlements; most of them are slum areas. Total area of the riverbank settlement along the Surabaya canal is 6.76 ha; there are 926 buildings (59.3% permanent, 30.9% semi permanent, 9.8 % non permanent buildings). Most of the buildings function as houses (57.8%) and some (33.6%) are used as work-houses or running businesses. The environmental condition of the neighbourhood is very poor. Some buildings are not proper buildings to live in; along the river, there are many houses or public toilets built on the reclaimed area of the river.

4.1 Organization

Intervention and Advocacy
In 2010, PWSS was reorganized. Management and leadership of the organization were shifted to the younger generation. The situation they face is different; the first generation had to convince the authorities about   their relocation concept and show that they could upgrade their living environment and increase their pro-environmental behavior, while the second generation had to give evidence about what they proposed after the government regulation (*Perda* 2007) was published.

Management of the first generation of PWSS was fully supported by the NGO's (UPC and *Jerit*; later on UPC and Uplink). As a new established organization, the community had to learn a lot, how to manage and what to do in facing the government plan of evicting their settlements. There were two advisory groups. The NGO performed as Advocacy Organizers (AO) who managed the organization and played the think tank role of PWSS; and people from the community became coordinator of the region.

AO conducted some intervention programs which aimed to raise the community understanding about their rights and sustainable environment, build and strengthen the social relationship amongst the residents, their self-confidence, do networking with experts from various disciplines and institutions, and advocate the community in negotiating with the government. The regional coordinators had to be responsible for communicating information to and among the residents in their own region. Internal meetings were held routinely, but mostly organized by the AO.

Intervention and advocacy of the NGO's (UPC and Uplink) during the first generation of PWSS managed not only to raise the community's understanding about their rights or educate people about some technical and social issues in relation with their environment, but it also indirectly acted as leadership training. Through all the intervention programs conducted by the AO, the community experienced how to manage the community's members. Talented leaders appeared in numbers. After seven years of advocacy, they decided that the organization had to stand on its own feet, not depending on AO anymore, and regeneration is needed.

Group Leader Approach

The second generation of PWSS has become a more formal organization with statutes and rules of association. Their mission is stated clearly, empowering the riverbank community to be a strong organized, autonomous urban poor society sides with the sake of the marginal. Their strategy is organization management, advocacy and networking. Philosophical views put autonomic value, social justice, gender, environment, transparency and equality. The role of NGO's in supporting PWSS management which formerly was performed by AO, has been taken over by all members of the board who are the community themselves. AO now performs a monitoring role.

There are three levels of leadership which work autonomously; the top management coordinates the whole program of PWSS; the second level is the region coordinator; and the smallest unit in the third level is the K-10, which is a group of 10 families living close to each other in the same region, or a group of 10 relatives coming from the same village (for example *Ponorogo, Probolinggo*) and living close to each other in the same region. The long history of staying in the neighborhood, made them know each other quite well, and have a close social relationship. Coming from the same village means they may have a similar culture, beliefs or values so they can choose the leader of K-10 amongst themselves. By identifying a person living in the neighborhood that should personally inform

people in the neighborhood about the community program, and actively encourage them to realize the plan; information and problems will be well communicated and discussed.

Applying "a group leader approach" is more effective than monthly reminder or information brochure distribution because they can meet at a flexible time and place. Gender becomes an issue in the composition of members of the board since there should be about the same numbers between male and female. This policy empowers women to play a role in the program as housewives have a more flexible time than the formal male workers. During the meeting, personal experiences, ideas, and achievement related to environmental household behavior are shared. Top management has a routine weekly meeting, while for the second and third level boards meet depending on their needs.

4.2 Community Program

Activities Following Negotiation with the Government

The first generation of PWSS had the task of implementing the first category of the program which consisted of preparing the technical evaluation report comprising of (a) engineering arguments to confront the government plan to normalize the river. PWSS and professional experts made a technical design proposal showing that floods could be avoided, without having to widen the river on both sides and clear the riverbank spread in 15-25 m (b) arguments about human rights, socio-cultural and economic aspects of the riverbank community. PWSS supported by NGO's, professionals in various disciplines and university students, made a detailed existing map of the whole riverbank settlements. The community participated in developing a new layout plan of their neighborhood. In this category, roles of the professional experts are dominant, but indirectly it is an education process for the community. By following the technical discussion and debates and participating in the research, the community is not only introduced to technical issues but also opens up their mind about their rights and the potential aspects of each region. For example, in the region of *Semampir,* the research found plenty of fish and reptile species. The community realized that they could be a good commodity but they could also be extinct if they did not maintain the environment properly. Experience is another form of information to increase problem awareness and change their existing environmental unfriendly behavior to pro-environmental behavior.

In the second category, the role of the professionals is minor to the role of the community. Most of the programs that started in the first generation of PWSS and continued to the second generation of PWSS were initiated by the community. They organized and proclaimed themselves as the river guardians. The intervention technique devised by the AO was facilitating details of information about being a river guardian, organizing discussions in workshops or seminars, inviting experts, sharing information and experience with other national and international communities, and doing cooperation with education institution. To be a river guardian means doing several actions: (a) Clear the river by demolishing all buildings, either houses or public toilets which were built on the

reclaimed area of the river, to make the river flow freely and not be impeded by building construction as before; (b) Build 3.00m inspection road along the river by cutting off all buildings which blocked the area, to enable inspection vehicles passing through; (c) Reverse orientation of the houses along the riverbank to face the river, enable people to always monitor the condition of the river; (d) Provide Sewerage Treatment Plant, as not to pollute the river; (e) Construct drainage system to create a healthy neighborhood; (f) Recycle the organic garbage communally using *Takakura* basket in a household scale. Collect the non organic garbage to be sold. By recycling, people do not throw the garbage away into the river; (g) Greening the environment by planting along the riverbank, especially with pollutant absorber plants; (h) Organize the Cultural Events in relation with the river, as an expression of gratitude to God. This is a traditional ritual, disposing an offering by floating it away in the river, in a traditional art festival.

The most important program to upgrade the environment is the savings program. As a poor community, it is certainly very difficult for them to realize their proposal without financial support. Therefore, the focus of the second generation of PWSS is to increase savings. Having constant savings shows the seriousness and persistence of increasing their pro-environmental behavior, increases opportunites of getting grants from foundations, or financial loans is possible. They organized saving groups in every region. The K-10 units play an important role in achieving the target of savings in every region.

Feedback Performance

Some of the proposed programs have been done while some others are in progress. Only program (a) has been totally completed in the whole riverbank settlements, but other programs, -for instance (b) and (c) -, are partly constructed in the whole region. Program (d), (f) and (g) are mainly concentrated in particular regions, because of the limited area available. The last program (h) was performed yearly in a different place until 2007

Since the *Perda* 2007 was published, activities of the community in relation with their program seem to be decreasing. Poor pro-environmental behavior relapsed, for example in *Gunung Sari* region, their houses are nice, but they tend to neglect maintaining their frontage area properly, using it as a garage or storage which potentially could become dirty. Former progress of their efforts in being a river guardian, or the progress of negotiation with the government were written in the community newsletter, and distributed to the community; however, the last edition was in 2007 in which they reported the success of their struggle by having *Perda* 2007. Boards of PWSS, with their new management organized activities to provoke and generate the new spirit. Realizing that there remains only 1 year of the time given by *Perda* 2007 to upgrade their settlement , they conducted priority programs, i.e., savings program and program (b)and (c) in two regions. They focused on renovating houses of particular K-10 unit of each region which shows persistent efforts as a group in running the savings program and maintaining their pro-environmental behavior. Grants will only be given to them. In this way, the community gains insight into their own behavior, individually or collectively with regard to the savings program. Feedback of performance of

each K-10 unit may increase the sense of individual and collective efficacy. Feedback may also trigger change through appeal to social and personal norms. In general, this kind of feedback has been helpful in changing the community behavior. Thus the savings program benefits partly as a result of increasing social and personal norms toward the benefit of saving.

For the designs of the renovated houses, PWSS and NGOs (UPC, RCUS,-Rujak Centre for Urban Studies, and Petra Christian University) organized a design competition. Seven prominent architects were invited to share their ideas, and the competition was won by Wiyoga, a young architect, with his ideas of making quilts of houses, using the concept of harmony in diversity.

4.3 Degree of Conflict and Consistency

The riverbank communities were not concerned about their environment, until the eviction threat in 2002. They did not pay attention to the condition of their neighborhood, which was unhealthy, crowded and dirty. There was no one coming to inform them about the benefits of having a sustainable environment. People did not have any knowledge in understanding their environment. They might also not have the ability to change the environment. They thought that it was the government's task to change the environment or they accepted their conditions as their fate. When this personal disposition to pro-environmental behavior is low and the situation they face makes them difficult to act, it means both variables are of the same sign. Then the degree of consistency is high, which means no pro-environmental behavior can be expected to occur.

Since PWSS was established, the variety of programs changed the personal disposition. They were informed about sustainable environment and pro-environmental behavior, trained to be responsible and have high commitment, which raises personal disposition to carry out certain environmental responsible behavior and perceived the situation as inhibitory to pro-environmental behavior. Then the degree of conflict is high, because both variables are of the different signs. It means that the attitudinal dispositions are partially blocked by the effect of the situational variables. Given this condition, various programs organized by PWSS are breaking the block and enabling pro-environmental behavior to happen. Over the past 8 years, since 2003, concern about the environment has led to an impressive number of actions intended to upgrade their environment. A host of initiatives is being taken, spanning from negotiating with the government, participating in professional research and technical studies, to collecting and recycling garbage instead of throwing them away.

Degree of conflict or consistency will influence the environmental behavior. Communities with a favorable disposition would always be expected to present more pro-environmental behavior than the group with an unfavorable disposition to pro-environmental behavior.

5.0 Conclusion

The community-based program of the Riverside Community plays the role as an intervention package in increasing the pro-environmental behavior of their living environment. The second generation of PWSS, manages the organization in a more autonomous way compared to the first generation, which was strongly supported by Advocacy Organizers from NGO. Applying a group leader approach in their programs enables the community to experience group standards before an explicit individual decision is made. It is the factor that is responsible for the success of the changing behavior in a small group setting, the K-10 unit, as compared to a large organization. Effects of group discussion are also favorably compared to individual instruction, ruling out the idea that the amount of attention given to each person individually was responsible for the change in behavior. The joint effect of group interaction and explicit decision made in public by the group members was apparently quite successful in changing behavior.

It showed the effectiveness of supportive social environment in increasing pro-environmental behavior. The effects of participating in a discussion group did not decrease with time, due to the possibility to discuss freely about the advantage and disadvantage of making an explicit decision. It showed the positive side of face-to-face interactions regarding changing behavior. Since its program was initiated by the community members, the interventions came from within and concerned their own problems. Having a common objective, -that is refusing the government concept of relocation, and promoting their own concept of renovation-, was a powerful agent in motivating them to persistently increase their pro-environmental behavior in upgrading environment.

Feedback on performance is needed to be applied regularly. Conditions that affect some pro-environmental behaviors will make other behaviors also susceptible to change because of the shared elements of their respective supporting conditions. It is argued that the intervention alone does not cause the effect but that the change in the environment and its interaction with the environment are responsible for the alteration. The community-based intervention package of PWSS has proven that change, was not only in one specific type of behavior, but it created a self sustained change in the community. With the sense of community and place, there was a wish to take responsibility for more than their immediate homes.

This program has a practical value for the organizations and policy makers, in identifying which actions are to be taken to increase the pro-environmental behavior and consequently upgrade the environment

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