



Community-Based Disaster Management in Kuala Lumpur

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Abstract

The goal of this study is to explore how flood-affected communities in Kuala Lumpur use their community-based organisation (CBO) in dealing with their vulnerability. Data was collected for this study through interviews, survey questionnaire, document analysis and field observation. The study finds CBO has a crucial responsibility in managing disasters affecting their communities especially in ensuring community members are ready for any eventualities and reducing their vulnerabilities. This research also found that the urban poor are the group that is hit the worst in most flooding incidents and the experience that they shared have shaped how they lead their lives.

Keywords: sustainable communities; community-based organisation; urban hazards; adaptation.

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1.0 Introduction

The rapid urbanization process in many developing countries have exacerbated processes of environmental degradation and contributed to disasters such as flooding. Malaysia is facing the same problem with many of its river-lined communities due to brisk growth of urban centres resulting in environmental problems together with built-up of impermeable surface areas. The indiscriminate dumping of garbage into rivers made the matter worse as it affects their handling capacity. Malaysia must address this issue immediately as 75 percent of its population expects to live in urban areas by the year 2020 (Federal Department of Town and Country Planning, 2010). The goal of this study is to explore how Segambut's flood-affected squatter communities use their CBO in dealing with their vulnerability (Obrist et al. 2010). The site selected was a flood-prone area within the capital city and involving evacuation of more than 2,000 squatter residents to safety in one flood incident just prior to the data collection exercise for this research.

2.0 Literature Review

2.1 Community-based Disaster Management

Literatures on social vulnerability in cities highlight the role of a local-based body helping in increasing the resilience of a community in dealing with disasters. Pelling (2003: 64) proposes that 'a supportive institutional framework social capital can be transformed into social organization to build (local) adaptive potential'. This is supported by Obrist (2006), arguing that social organisations shaping the allocation of, access to and use of resources at the household level (such as the CBOs) are vital for establishing resilience (see also Mazlan Che Soh and Siti Korotá'aini Omar, 2012). Chen et al. (2006) discuss on community-based disaster management program in Taiwan where community residents learned to analyze vulnerable conditions, discover problems, develop solutions, and establish an organization to implement disaster management tasks.

Community-based disaster management is one example of a programme that comes into existence as a 'reaction' to a problem. Shaw and Goda (2004) espouse that the major earthquake in Kobe of 1995 led to an increase in voluntary and non-government activities, and the enhancement of cooperation between local government and CBO in managing disasters. They add that the local network is effective in collective decision-making and representing the voice of the community in dealing with Japan's various disasters. Meanwhile, Yodmani (2001) suggests that the failure of a top-down management in addressing the needs of vulnerable communities has brought about the alternative; involving the vulnerable people themselves in the planning and implementation of mitigation measures while the affected communities are the best judges of their own vulnerability (see also Marcillia and Rohno, 2012; Xue Ma and Ryuzo Ohno, 2013).

2.2 Vulnerable Communities

Mileti and Gailus (2005) suggest the urban poor and the marginalised are the vulnerable communities often involved in risk communication when responding to hazards. Risk

communication means exchanging of information about health risks caused by environmental, industrial or agricultural processes, policies, or products among individuals, groups, and institutions (Glick, 2007). Risk communication often attempts to establish persuasive strategies to persuade the public in adopting a particular view regarding some risks. The poor in many countries try to survive in flood-prone locations because they have few alternative livelihoods; therefore they are forced to put themselves at risk since they have no other option while their hazard response is limited due to their lack of access to knowledge and resources. Additionally, Mileti and Gailus (2005) propose that the vulnerability of the poor can be considered 'self-inflicting' since they have knowingly chosen to occupy a hazardous area due to their limited resources. With reference to Malaysia, the migration of the poor from rural to urban areas in peninsular Malaysia is an important dimension of urban growth and it is this group of people who more often than not occupying the less safe squatter settlements on flood plains (Chan and Parker, 1996).

3.0 Methodology

Data was collected for this study through interviews, survey questionnaire, document analysis and field observation. The respondents involved in this study include gatekeepers of the study area of Segambut squatters, members of the flood-affected communities and officials from agencies involved in flood management. Data were gathered from households in the study area through survey questionnaires. The main objective of this survey was to investigate how these communities cope with recurring flooding with the assistance of the CBO¹. Documents analysis (including reports, periodicals, news articles and publications linked to flood hazard management agencies comprising of the local authority, the Department of Irrigation and Drainage, and the Malaysian Red Crescent Society) enabled the investigator to trace both factual and interpretive information about the implementation processes. The researcher paid close attention to the interactions among the community members and physical damages caused by the flooding as part of his field observation. All of the gathered data were triangulated to give credibility and internal validity to the research findings.

4.0 Results and Discussion

This section highlights the findings from this study and simultaneously discusses the role of CBO in assisting the members of the affected community in dealing with flood hazards.

¹ In Malaysia generally, and in the Malay society specifically, meeting the leaders or those in authority, in other words, the 'gatekeepers' (usually one of the leaders within CBO), is the polite and diplomatic way of accessing the community to be studied. On this issue, Creswell (1994: 148) suggests that it is imperative "to gain access to research or archival sites by seeking the approval of the 'gatekeepers'" [4]. As with squatter communities, the sense of distrust of strangers or outsiders is even more prevalent as they are usually under pressure to move elsewhere as they are occupying the land illegally and they are also being blamed by the neighbouring communities for various problems.

Following Chen et al. (2006), this section is categorised into three: before, during and after the flooding.

4.1 Prior to Flooding

4.1.1 Warning System

A flood warning system is one of the most vital adaptations in communicating to the public in preparing for the impending flooding (Seng, 2012; Sheppard et al. 2012). Officials of Kuala Lumpur City Hall and the Department of Irrigation and Drainage acknowledged that one way of relaying to the public at large the message about imminent flooding were through the installation of early warning system deployed at various spots in Kuala Lumpur. However, none are available in the study area probably because the area was not considered as a priority locality since it was not occupied by permanent residents with legally-owned properties.

With the lack of formal flood warning system, the CBO of the study area took the initiative of utilising the public announcement system at the prayer hall (surau) to alert their members about any imminent risk of flooding. The public announcement system was also used to instruct the affected residents to evacuate their houses and move to temporary shelters for safety and to receive assistance. The respondents reiterated that the public announcement system has helped tremendously especially when the flooding occurred on few occasions late at night when most of the residents were fast asleep.

Information gathered from the CBO and squatter residents revealed that the absence of flood warning system means that most of them personally monitor for sign of flooding. This is based on past experience shared among them which is one aspect of community-based risk communication. The most common method is for them to pay close attention to prolonged heavy rain (ranging from one hour to three hours) and observations of the water level of the rivers. According to a number of respondents, whenever it rains upstream, the water in the two rivers in the study area would usually flow faster than normal and this is regarded as a sign of impending flood.

4.1.2 Preparing for Flood

The research also investigates steps taken by the CBO and community members as a precaution to prepare for flood. Based on the feedback from the respondents, after experiencing the many flooding events affecting the communities, they have taken several precautions that are common knowledge among themselves. The CBO also share this knowledge with those who are new to the community including ensuring that the children are in a safe place, placing their belongings at higher levels within their house and constructing shelves above the ceiling to accommodate their belongings.

Based on these feedbacks it can be understood that the residents are under tremendous pressure whenever it rains heavily. They need to consider many elements, primarily the safety of their family members and their belongings. It can also be observed that frequent flooding also affects their lifestyles as flood hazards even restrict the choice of appliances or furniture they acquire, while leaving their homes for a long duration is another risk that they

may have to contemplate. This is one example of Beck's (1992) 'risk society' where risks play an important part in people's daily life in the modern world.

4.1.3 Familiarisation with Higher Grounds and Evacuation Centres

After experiencing many flood events and with CBO guidance, the squatter residents are already familiar with the measures that they should take whenever floods occur including evacuating to temporary shelters and higher grounds; but they were also reminded to ensure that their neighbours were alerted as well. This is an example of using the flood victims as valuable resources in risk communication; by empowering the people to help themselves (McEntire and Myers, 2004). Strong local support networks together with a willingness to act collectively may have also increased the level of squatters' social resilience. The behaviour of these flood victims is an example of social capital marshalling with the prevalence of collective action and evidence of social bonds that formed an important part of the community's adaptation, involving trust, reciprocity and common objectives (Pelling, 2003).

4.1.4 During Flooding: Evacuation and Temporary Shelters

The Malaysian Red Crescent Society (MRCS) is usually among the first organisations to arrive at the flooded communities to co-ordinate the evacuation of the residents and operate the temporary shelters. The gatekeepers of any hazard-prone communities would usually have the contact numbers of several MRCS officers whom they can call during any emergency - an example of the availability of risk communication network as a precaution for any eventualities. Other than being assisted by the above agencies, the evacuation exercise was also co-ordinated by the CBO. The residents also informed the researcher that they would also look after the safety of their neighbours during the evacuation, especially the elderly and the children, an example of a strong social network offering support to its members. This idea of social capital was very prominent among the squatters and felt they could rely on their neighbours for assistance whenever needed. They were quite confident that while they were willing to assist the others when disaster struck, the reverse would also be the same, and probably expected.

4.2 Post-Flooding

4.2.1 Damaged Properties and Compensation

Even though various precautions have been made in order to minimise the impact of flooding, there are still damages to property that were observed in the inundated communities. As highlighted earlier, one flood incident caused considerable damage to the affected squatter settlements in Segambut which led to the evacuation of more than 2,000 residents and this is another area probed in this study. The CBO helped to distribute and collect application forms for compensation from the victims and forwarded them to the Welfare Department for its consideration. This is another initiative by the community leaders in informing the residents on the availability of avenue for seeking compensation as not everyone are familiar with the bureaucracy of disaster management. Based on the forms submitted, the application for compensation from the affected households ranged from RM430 to RM19,750. In most

cases, the victims were claiming for costs of repairing their houses and vehicles, and damage to their belongings that include refrigerators, televisions and computers. However, there were other damages for which there was no financial compensation such as damaged legal documents and personal memorabilia. The residents of the affected communities also confirmed that each family that had been evacuated and relocated to the temporary shelters was given a financial aid of RM200.00 by the Welfare Department when they registered themselves at the temporary shelter.

Coming from low-income background, the squatters considered that their losses were high, as they had lost items that to them are essential assets. For instance, a damaged vehicle, such as bicycle or motorcycle, may mean that the victim might not be able to go to work. Therefore he may suffer loss of earnings for each working day missed. At the same time, the victim would need to set aside a budget to repair his damaged vehicle, which would further deplete him financially. The loss suffered is an example of Beck's (1992) idea that the poor attract more risks, or are more vulnerable to risks as their living arrangements are more precarious (see also Wakhidah Kurniawati, 2012).

4.2.2 Structural Adaptation

During fieldwork observations, it was noted that one of the ways residents have adapted in dealing with flooding is by modifying their houses. The first modification witnessed was the construction of a low wall at the entrance of the house, while the second was replacing timber wall with concrete blocks. A number of respondents stated that these are some of the adaptation that they have implemented after learning from the CBO and other residents who had started to construct it with some success in preventing floodwater from entering their homes. However, one of the respondents explained that the low wall has not been able to block the water of major floods, but served its purpose in the past when the floodwater level was lower.

It was also observed that while timber was the most common material utilised for the houses in these squatter settlements, quite a number of them are using the costlier concrete blocks for the lower portion of their walls. These concrete blocks were used as they prevent or reduce the amount of floodwater coming into these houses (refer to Figure 1). The construction of the low wall, using concrete blocks and building a raised platform were examples of structural adaptations that these flood victims have implemented based on the experience of dealing with past flooding; and possibly by sharing experience with their neighbours or flood victims elsewhere. These adaptations were something that these squatters have "socially constructed and negotiated" (Grothmann and Patt, 2003). This is probably the only adaptation they could afford as concrete and concrete blocks are much more expensive than timber. This is the most likely reason that they only used the concrete blocks for the lower half of their walls as utilising these blocks for the entire wall would be financially difficult for them (see Zarina Isnin et al., 2012 & 2013).

The structural adaptation with the intention of reducing the impact of flood hazards has also been discussed by Chan and Parker (1996) who state that the traditional Malay house design in Malaysia's rural areas has been adapted to recurrent flooding by being raised on stilts. By adapting this design, it enables these people to be located on flood plains next to

the rivers and engaging in farming and fishing activities. However, it is acknowledged that this design is gradually being discontinued because of increasing rural to urban migration, the modernisation of architectural styles and state policies, which now promote terrace-type of housing estates.



Figure 1: An example of structural adaptation depicting a house with concrete lower wall.
(Source: Field survey)

4.2.3 Moving out from the Communities

Relocating to another area is another type of response for some flood-affected squatter communities who feel they can no longer live with the problem (see Blaikie et al., 1994). According to several respondents, a number of families have moved out of the squatter settlements as they could not endure the recurrence of floods and upon learning from the experiences of their former neighbours who have relocated to a safer place (refer Figure 2). In this instance, the CBO helped those opting to relocate by introducing them to agencies dealing with public housing. However, many have opted to stay as relocating elsewhere would cost a lot financially and there are other priorities that they need to consider. Other than the financial implications, the residents may also decide not to relocate due to the long relationships that have been established among them. The feeling of togetherness among the residents as shown in many instances above is quite common for a community that had been through a lot collectively, especially after a shared unpleasant experience such as the recurrence of floods or any other disaster.



Figure 2: A flood-damaged house whose owner has moved out of the study area.
(Source: Field survey)

5. Conclusion

The study finds that the CBO has a crucial responsibility in managing disasters affecting their communities. Their main responsibility is ensuring their community members are ready for any eventualities and reducing their vulnerabilities. Furthermore, this study has also shown that as highlighted by many authors discussed above, the urban poor are the group that is hit the worst in most flooding incidents and the experience they shared have shaped how they led their lives. The vulnerability of these squatters can be considered as 'self-inflicting' since they have knowingly chosen to occupy a hazardous area probably due to their limited resources. These links between human factors and vulnerability, where disasters are primarily the consequence of human actions can be seen as an 'actualisation of social vulnerability'. However, in responding to these geo-hazard events, the squatter communities have adapted ways that they derived from their strengths, which are their sense of belonging, their networking among themselves as well as with government officials, and also by adapting a number of structural modifications that they could afford. The involvement of the CBO, their communications and sharing of knowledge with community members, as well as guidance by the responsible government agencies, in other words - their use of risk communication, that they are able to share lessons from their experience in order to lessen or overcome their vulnerabilities to the hazards presented in their daily lives. In most cases, 'actionable risk communication' was very prevalent as imparting of experience and knowledge came from within the community itself benefitting those who are less prepared. With the help of the CBO,

the affected communities learnt of strategies or change in behaviours that they need to adapt from those who have managed to reduce the impacts from the recurrence of flooding. This has not only further strengthened the bonds between the neighbours, but has also helped to enhance the sustainability of these communities.

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