

Bridging the gaps: the role of local government capability and the management of a natural disaster in Bantul, Indonesia

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Abstract This paper examines local government capability in managing pre-, during and post-natural disaster in Indonesia. The case study is the Bantul local government which had experience in managing the 2006 earthquake. Bantul is located in the most densely populated area of Java, where 1,500 people per square km square, and the earthquake destroyed domestic industries that had become the main resource of the Bantul local government. The capability of local government and the requirement to manage a disaster are very important issues for exploring the important role of local government in mitigation, preparedness, response and recovery disaster management activities, particularly in regard to the characteristics of local government in developing countries. In this paper, capability of local government in managing a disaster is defined as a function of institutions, human resources, policy for effective implementation, financial, technical resources and leadership. The capability requirement of each stage of disaster management has also been explained from the point of view of state and non-state actors and institutions. Finally, the paper integrates the capability requirement and reality in order to bridge these gaps.

Keywords Capability · Local government · Natural disaster

1 Introduction

The issue of local government capability focuses on the institution's ability to change and to develop the requirement for the institution to manage a disaster (Schreyögg and Kliesch-Eberl 2007). Disaster management requires not only standard planning practices but also the capability to manage uncertainty and change quickly, since those are the key characteristics of disasters (Moynihan 2008, p. 99). The concept of capability reflects the resources and assets that institutions or people possess to cope with and recover from the disaster shock they experience (Davis et al. 2004). Capability also encompasses the ability to use and access needed resources above and beyond actual resource availability

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(Kuban and MacKenzie-Carey 2001). Capability is often rooted in resources that are endogenous to the community and that rely on traditional knowledge, indigenous skills and technologies and solidarity networks (Gaillard 2010, p. 220). The ways in which capabilities are mobilized in times of crisis reflect coping strategies. Coping strategies refer to the manner in which people and institutions use existing resources to achieve various beneficial ends during unusual, abnormal and adverse conditions of a disaster process (United Nations International Strategy for Disaster Reduction 2002).

This paper discusses the capability of the Bantul local government in Indonesia as a case study. The Bantul local government has had experience in managing the 2006 earthquake. In this study, capability is seen from perspectives of institutions, human resources, policy for effective implementation, financial, technical resources and leadership. In terms of institution-related capability, local government is most capable when it has a clear structure, role, responsibilities and relationships with all other levels of government. The competitive factors of human resource-related capability are visible when local government has sufficient personnel, proper tasks, delegation and division of labour within the organization to manage disaster. The key success factors contributing to policy for effective implementation-related capability are the availability of appropriate policies, rules and regulations for making decisions, mobilizing resources and engaging relevant public or private organizations. Having sufficient financial resources to support activities in all stages of disaster management is crucial for enhancing financial capability of local government. Important factors in strengthening technical capability of local government institutions are an effective logistic management system, a sufficient technology information system, and a communication network between organizations, the community and media representatives. A significant factor that contributes to leadership-related capability at the local level is the local quality of the leaders to make quick and appropriate decisions, if and when needed, to strengthen the confidence of those struck by disaster (Kusumasari et al. 2010).

2 Research method

Information related to the literature-identified key natural disaster responses was collected through in-depth and semi-structured interview with 40 key informants who were classified into six groups. The group of informants were the representatives of central government, provincial region, local government, community leaders, local NGOs and international NGOs who were involved during and after the earthquake. For all the interviews, a semi-structured interview guide was provided which sought answers to questions related to the local government capability and their expectations in order to fulfil the capability requirement for managing a disaster.

3 An overview of Bantul

Bantul is located in the southern part of the province of Yogyakarta Special Region and covers an area of 506.85 Km² or 15% of the total area of the province. The topography of Bantul is chiefly a plain; most of the hilly areas are less fertile (Statistics Centre Bureau 2008). Bantul is one of the five districts of the province of Yogyakarta Special Region, which is bordered by Yogyakarta City and the Sleman Regency in the north, the Gunungkidul Regency in the east, the Kulonprogo Regency in the west and the Indonesian

Ocean in the south. The Bantul Regency consists of 17 districts and 75 villages. The population in the Bantul Regency was 820,541 in 2004, distributed across 75 villages and 17 districts. With a total area of 506.85 km², the population density of the Bantul Regency was around 1,611 persons per square kilometre (Statistics Centre Bureau 2008). In Bantul, 99% of the population work in small–medium enterprises (SMEs), such as earthenware vessels, leather, wooden masks, bamboo souvenirs, Batik, silver and puppets. However, the agriculture sector is also a principal source for domestic earnings.

The earthquake struck Bantul on 27 May 2006 at 5:53 am local time and measured 5.9 on the Richter scale. The earthquake was the result of the strong pressure of the Indo-Australian plate in the south against the Eurasian plate in the north. The conjunction of these plates was along Andaman and Banda Aceh in the western part of Sumatera, south of Java, south of Bali, West Nusa Tenggara, East Nusa Tenggara, and Maluku and Papua seas. The pressure activated a shift in the fault lines. The energy released then caused the earthquake, which was a natural and inevitable occurrence. The quake directly affected the province of Yogyakarta Special Region in all five districts (Bantul, Gunung Kidul, Kulon Progo, Sleman and Yogyakarta City) and six districts in the Central Java province. However, Bantul was the most heavily affected area. Geographically, the affected area was small but densely populated; worse still, the shallowness of the epicentre contributed to widespread structural damage, particularly to housing, which was mostly old and not constructed according to basic earthquake resistant methods. Most houses used low-quality building materials and lacked essential structural frames and reinforcing pillars and collapsed easily as a result of lateral shaking. The disaster left 4,143 people dead, around 50,000 injured, 779,287 homeless and damage and loss estimated at US\$3.1 billion (National Development Planning Agency 2006). Figure 1 describes detailed distribution of damage and loss that affected Bantul and surrounding areas.

Bantul generates very little of its own revenue—less than 6% of total revenues; shared non-tax revenues from natural resources are less than 0.1% of total revenue, and about 880,000 poor people live in the affected area. Therefore, Bantul depends heavily on the central government’s general allocation transfer, since the earthquake also caused 246%

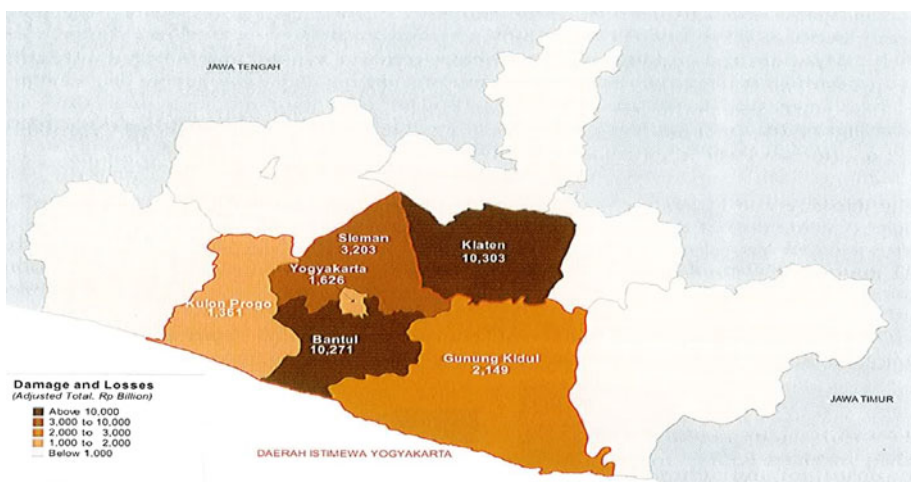


Fig. 1 Geographic distribution of damage and losses. *Source* (National Development Planning Agency 2006)

total damage and loss by value when compared to Bantul's gross domestic product (National Development Planning Agency 2006).

4 Disaster management organization in the period of 2001–2007

Disaster management in 2006 was very much influenced by the spirit of the decentralization era that began in 2001 and which led to significant changes in the Indonesian political and administrative system. The implementation of the new concept of regional and local autonomy under Law No. 22/1999 on Local Government was substantially intended to empower provincial and local government. At the same time, recognizing how each region has its own strength and constraints in terms of human resources and the wide-ranging impact of disaster in many regions in Indonesia, the government then established the National Coordinating Board for Disaster Management (*Bakornas PB*), in accordance with Presidential Decree No. 111 of 2001. In order to support the duties of *Bakornas PB*, the central government established *Satkorlak PB* (Provincial Coordinating Board for Disaster Management) at the provincial level; this was chaired by the Governor. In addition, to cope with disaster where it occurs at the district or municipal level, *Satlak PB* (District or Municipal Implementation Unit for Disaster Management) was established, chaired by the *Bupati* (Head of District) or Mayor, as appropriate (Fig. 4.1). The *Satlak* is composed of *Satgas* (task forces) of relevant institutions and services, such as health, Search and Rescue (SAR), the army, the police, social and public works, the Indonesian Red Cross (PMI) and NGOs. District units, as front-line organizations, can mobilize all related agencies in their respective districts, subdistricts and villages, along with local community organizations. This decree has also provided the opportunity for provincial and local government to arrange their own adaptation of *Satkorlak PB* and *Satlak PB* structures according to local need (Asian Disaster Preparedness Centre 2007) (Fig. 2).

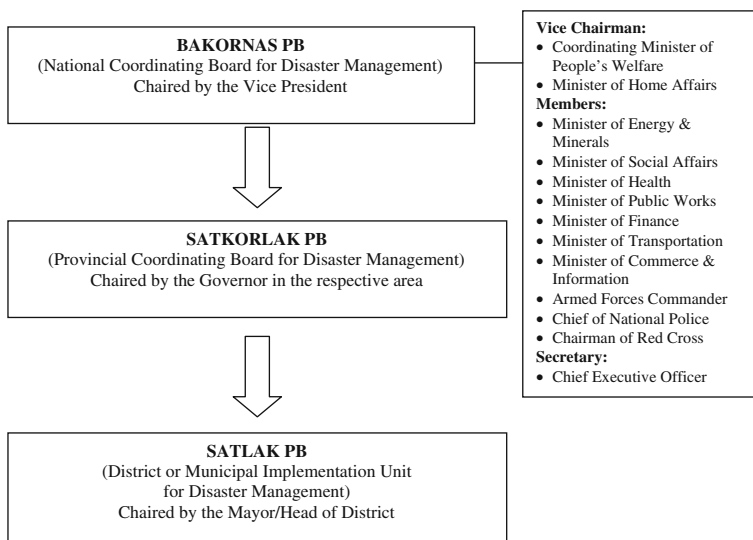


Fig. 2 Disaster management Organization structure in Indonesia based on presidential decree No. 111/2001. Source www.bakornaspbp.go.id (retrieved 2 April 2008)

In a number of periodic national workshops that involve *Satkorlak PB* and are organized by *Bakornas PB*, the inclusion of disaster management into the respective provincial development plans has been considered and accepted. While the discourse on disaster management at the national and regional levels has been encouraging in accepting the need to include it in the overall development plan, and also accepting that disaster preparedness is crucial to mitigating the impact of disasters, actual programs that reach down to and involve the community in disaster preparedness have not been common disaster management projects. The *Bakornas PB* has introduced the concept of community-based disaster management through its Self-Initiative Disaster Management System. The concept was developed to increase the awareness of the community on potential disasters that might occur in their area.

Strategy and policy coordination in prevention and mitigation activities are handled by the *Bakornas PB*. In implementation, each ministry deals with its respective task. During a disaster, in the case of rescue, emergency relief is to be handled directly by the *Satlak PB* at the district level, the *Satkorlak PB* at the provincial level and the *Bakornas PB* at the national level. After a disaster, in the case of rehabilitation, this is to be handled directly by the *Satlak* or the *Satkorlak PB*, along with line ministry agencies and under coordination of the central government. Within the coordination system, as discussed above, all manuals, hazard mapping and risk assessment are handled directly by each ministry in accordance with their policy remit. To address post-disaster response, the National Planning Board of the Government of Indonesia, known as *Bappenas* (which fell under the central government's responsibility) and the *Bakornas PB*, established a special agency for specified recovery-related events.

However, the capability that existed in Bantul local government during the 2006 earthquake was very weak due to the fact that *Satlak PB* (District Implementation Unit for Disaster Management) in Bantul, chaired by the Head of District (*Bupati*), had not been trained and experienced in pre-, during and post-disaster management. This implementation unit in fact played the most significant role before, during and after a disaster. However, since the unit had never been experienced such adverse conditions and thus had acquired no knowledge of disaster management, such limitations became obstacles for the Bantul local government in managing the disaster. There were almost no programs undertaken by local government to identify disaster-prone areas in sub-districts in Bantul. Even though Bantul is located in an area prone to disasters such as landslides, tornadoes, drought, flood, fire and earthquake, there was no sign of disaster awareness in local government or the community. Even worse, availability of an Early Warning System and capacity to understand it were very limited.

5 Local government capability

The earthquake that shook Bantul on 27 May 2006 was a testing time for local government's capability in managing a disaster. Discussion on Bantul local government capability has emphasized how this institution has shifted its normal activities towards the ability to change and quickly develop in an environment of uncertainty. The term 'capability' in this study means the ability of the Bantul local government to organize assets, competence and knowledge to protect the community from a disaster's potential effects, and how this has been transformed into local government ability in institutional and human resources policy for effective implementation and for providing financial, technical and leadership

capabilities that are specifically relevant to the situational contingencies of a given community disaster.

5.1 Institutional capability

Institutional capability of local government relates to the clear structure, role, responsibilities and relationship of local government with all other levels of government in managing a disaster. In order to be fully functional, institutions must be dynamic entities that have the resilience, durability and flexibility to adapt and modify in an emergency situation (Gopalakrishnan and Okada 2007). This research has revealed that a lack of standard operating procedures, bureaucracy structures and roles to manage emergency conditions for all agencies, bodies and departments in the Bantul local government was responsible for the high death toll or extensive damage that occurred. The poor quality of houses in Bantul also worsened the outcome. *Satlak PB* (District Implementation Unit for Disaster Management), which should have been in the vanguard of a disaster relief operation, remained in limbo for some time after the quake, because this unit was untrained and inexperienced in such circumstances. It is also found that the lack of anticipatory training for disaster relief efforts and the narrow individual networks of the officers in command rendered coordination weak. Therefore, although *Satlak PB* has a clear structure, role and responsibilities to manage disaster as well as to maintain the relationship with *Satkorlak PB* (Provincial Coordinating Board for Disaster Management) and *Bakornas PB* (National Coordinating Body for Disaster Management), this was only an institutional formality, because there was no standard operating procedure or guidance in confronting disaster. The training and education of those institutions had never occurred, so this made the disaster the more devastating.

The case of Bantul's earthquake showed that damage information was unavailable from local government officers, that even the provincial and national government had no knowledge of the possibility that an earthquake might occur in the area and that no local government personnel were assigned to provide information to the community regarding lack of awareness about the tsunami that followed the quake. On the positive side, there were instances where reliable information was delivered promptly as a result of support and coordination from NGOs. Institutional mechanisms in the Bantul local government that could quickly and effectively channel the efforts of international and national NGOs and technical expertise from local universities to affected areas are another important dimension. It was also found that local government had the authority to make immediate decisions based on information available without having to get permission from higher-level institutions (the provincial government or the central government). Thus, this autonomy in decision-making is important for emergency responses.

The experience of the 2006 earthquake has led to organizational and institutional changes in the Bantul local government. For instance, the Bantul local government has made efforts to develop a clear structure, role and responsibilities, appointing Bantul's Community Protection Unit as a leading institution to handle disaster. Disaster, therefore, has not only been deemed to include natural disaster but also man-made disaster. The Community Protection Unit of Bantul has also mapped the yearly cycle of natural disaster in Bantul such as floods, landslides, drought, tornadoes and coastal erosion. This change signifies an alteration in the direction of local government with regard to any social, economic, political and environmental conditions that deviate from pre-disaster conditions and substantially impact on people's lives. This quake also provided 'a window of opportunity' (Kingdon 1995) for local government to change. These changes indicate a

critical juncture which Olson and Gawronski (2003) define as changes that set the institution on a new path for action and policy. However, although this policy is positive, particularly with regard to the importance of having local body for disaster management as mandated in Law No. 24/2007 on Disaster Management which specialized in managing disaster instead of assigning this role to a unit, it could perhaps become a future problem in terms of ensuring appropriate divisions of responsibility, fiscal and political, among the various bodies or departments in the Bantul local government. In essence, this unit only accepts very minor responsibility for applying programs and activities at different stages of disaster management, and yet it appears that all these roles and responsibilities are unsuited to operational capacity at a unit level. The need to have a local body for disaster management is important, indeed crucial, although there remain obstacles such as issues of structure and finance, which can be seen clearly as an instance of impaired institutional capability in the Bantul local government.

5.2 Human resources

Disaster may often be considered a part of an unimportant discourse until a disaster occurs. This perception is found obviously in many local governments and is a common attitudinal problem in the bureaucracy (Wolensky and Wolensky 1990); consequently, it has implications for the capability of human resources in responding to a disaster. Under normal conditions, bureaucracy personnel can perform their regular tasks appropriately, but, when a disaster happens, daily and routine tasks cannot be extrapolated as a response to a disaster (Cigler 1987). Thus, the human resource capability that is suitable for managing a disaster becomes visible when local government has sufficient personnel, proper tasks, delegation and division of labour within the organization.

The human resource capability of the Bantul local government is seen from the perspective of having sufficient personnel, proper task delegation and division of labour. In terms of having sufficient personnel, the Bantul local government in fact has more than 12,000 personnel to provide service for 17 sub-districts, 75 villages and 933 hamlets (Statistics Centre Bureau 2008). Proper task delegation and division of labour have also been managed well for running routine daily activity. Since a disaster is a sudden event that totally differs from daily activity, proper task delegation and labour division in the Bantul local government did not run smoothly. During the quake, local government personnel faced overload, and at the same time, almost all communities were too disorganized to cope with a disaster. Fortunately, all departments and offices in Bantul have additional tasks aside from their main task, even though this is not the responsibility of those departments or offices. For instance, as a member of the Bantul Regional Planning Agency said, the head of the agency must be responsible in some sub-districts for numbers relating to malnutrition, maternity numbers and the mortality rate. This requirement has been imposed by the Bantul Mayor in an effort to change the mindset of the bureaucracy towards serving the people better. By having detailed information on sub-districts or villages, the Bantul Mayor explained, the development program of the government could be successful because it was on target. Acknowledgement that local government personnel know their local needs best plays an important role under such emergency conditions.

The Bantul Mayor also added that the success of government development really depended on cooperation between departments and offices in Bantul. Health problems could be solved if there was understanding in every department and office in Bantul to see them as a common responsibility and not solely the responsibility of the Health Department. The case of Bantul revealed that decentralized government brought together a

proliferation of semi-autonomous boards and authorities to work under emergency coordination conditions with authorities from central and provincial governments, NGOs and community groups.

In terms of managing human resources during an emergency, the Bantul Mayor admitted that they were not ready to face the quake. At the time, the Mayor contacted all the department and office heads in Bantul for one reason: The heads had power to mobilize their resources to help people, and since they already held knowledge about all sub-districts in Bantul, assistance for victims could be prepared rapidly. This reveals that a highly decentralized disaster response involved a diversity of local government personnel and organizations; this then allowed local government to adapt rapidly to changing disaster conditions and a changing environment, even though the command and control approach from the Bantul Mayor himself became the significant factor in mobilizing all local government personnel in the crisis.

However, having a strong commitment to serve the people is not enough unless personnel are equipped with appropriate skills in disaster management. Some efforts, therefore, have been directed towards educating the bureaucracy in disaster awareness. Training sessions on mitigation and preparedness have frequently been attended by staff from all departments and offices in Bantul. Tsunami drills and earthquake simulations have also been conducted with the community by local government in order to help them prepare if a real disaster occurs. The Bantul Prime Secretary added that the government has regularly trained staff from hospitals, community health centres and Department of Health and community leaders on how best to assist victims with broken bones. International NGOs that have a commitment to disaster education can also assist in this.

5.3 Policy for effective implementation-related capability

A policy for effective implementation-related capability is embodied in the policies, rules and regulations that have been enacted by local government for overseeing and providing guidelines for different stages of disaster management. The findings of this research have clearly shown that there was no legislation enacted at all levels of government in 2006. Since no legislation was available at the time, there was no mandate for local government to enforce the adoption of disaster coordination mechanisms, educating the community and bureaucracy staff in disaster awareness, the identification of vulnerable areas and maximizing early warning systems at the local level. The Bantul local government also identified shortfalls, in that Bantul is a disaster-prone area but lacked regulation on disaster awareness; there was no local body for disaster management; disaster coordination mechanisms were not optimal; community organizations had not been empowered; Search and Rescue (SAR) members were too few, and SAR equipment was inadequate; Bantul maps had not yet identified vulnerable areas, the early warning system was not optimized, and no mitigation education had been conducted for the bureaucracy and the community.

However, once national policy arrangements on disaster management emerged through the implementation of Law No. 24/2007 on Disaster Management after the 2006 earthquake in Bantul, it affected local government policy. Considering Bantul a disaster-prone area, the government formed the Middle-Term Development Plan to classify disaster-vulnerable areas in four categories: flood-prone, landslide-prone, earthquake-prone and coastal erosion-prone areas. Each such area designed programs on mitigation and preparedness, such as disseminating information on disaster awareness, conducting tsunami drills, preparing for evacuation and ‘greening’ the beach to prevent tsunamis by

planting mangroves. Mitigation effort has also been implemented in Bantul's Middle-Term Development Plan (RPJMD) 2006–2010, with adequate funds allocated to this program. The willingness to adopt disaster mitigation efforts in the Middle-Term Development Plan indicates a major effort worth citing in this context as evidence of the local government becoming more responsible for protecting the whole community. The Bantul Mayor also implemented Policy No. 166 Year 2006 on *Satlak PB*. This policy emphasized that all community organizations in Bantul must support the activity of *Satlak PB* so that every organization had disaster awareness. It enabled the Bantul local government to become more involved in disaster management. As a response to the impact of the earthquake, the Bantul local government and the community are currently becoming more aware of any potential of disaster risk in their area. Such policies theoretically could speed up disaster reduction efforts, as is evidenced by formal disaster plans that have become universal at the local level in many disaster-vulnerable countries (Gopalakrishnan and Okada 2007).

5.4 Financial capability

Given the fact that the economic cost associated with natural disaster worldwide has been increasing significantly since the 1950s (Coppola 2007; Guha-Sapir et al. 2004), having sufficient financial resources to support activities at all stages of disaster management is crucial for enhancing the financial capability of local government. The earthquake that occurred in a densely populated area where around 880,000 poor people lived has left a problem for the Bantul local government, because most of the community lack the necessary financial and supplementary resources to build, that is, to rebuild—earthquake-resistant houses. Hence, financial assistance from local government becomes critical in helping the community before, during and after disaster. However, this research has revealed that budgetary constraint was the main factor behind the Bantul local government's impaired efforts in conducting disaster management activities. The Bantul Mayor explained that 80% of the local budget was allocated for staff salaries and allowances while 20% was spent on public service. Therefore, there was a very small amount of money allocated for disaster management activities.

To fill the gap, overseas grants were used to finance response and recovery programs. Moreover, the local government negotiated with the central government to fund a housing rehabilitation program in Bantul. The Governor of the Yogyakarta provincial government ordered the local government to switch budget allocations, where possible, to education and health sector rehabilitation. By switching programs that could not be completed, such as from the Department of Fishery, which has a program on fish breeding that could not possibly be implemented since fish ponds were devastated, the local government could support the recovery program with allocations for the rehabilitation of school buildings and health facilities. This ability of local government to alter the budget was not easy; it is typically a serious problem for local government in developing countries because of rigid bureaucratic procedures (Labadie 1984). Altering the budget required the agreement in particular of the local legislature, which can require considerable time. However, the local legislature and the local government in Bantul paid special attention to the lack of financial resources. Hence, in order to solve the problem, both institutions reached consensus on reallocating the budget to prioritize programs in the emergency and recovery periods. This process can be seen as a consensus-building approach at the local level in solving the lack of financial capability.

5.5 Technical capability

The development and use of a strategic approach in the response and recovery stages reflect the local government's ability to act related to its technical capability, resources, organizational flexibility and adaptiveness (Rubin and Barbee 1985). Technical capability refers to the ability of the Bantul local government in effective logistic management systems, adequate technology information systems and communication networks between organizations, communities and media representatives. In the first 24 h, the government failed to provide help for victims and such actions as were taken tended to be spontaneous rather than planned earlier. According to an informant from an international NGO, the technical capability of local government in managing disaster had not been understood properly: For instance, one tent was occupied by many people without considering the standard of living. However, in logistic management, the Bantul Mayor and the Bantul Prime Secretary played an important role by paying more attention to the needs of women and children who are often forgotten. With the limitations they faced, the Bantul local government displayed remarkable ability and willingness to act and to utilize fully all technical capabilities and local resources following the quake. The local government could manage logistic management quite well and was able to consider different courses of action for a number of reasons, such as the government's closer relations with the community, social dimensions and the long history of government communication with the community and support community. This indicates that the capacity to act in the response and recovery stages demonstrated the level of technical and administrative capabilities of the local government and its available resources. The Bantul local government deployed its technical capability in expediting community recovery by maximizing community values. Effective recovery resulted from local government personnel's awareness, knowledge of community and willingness to uphold community values. Upholding community values in the emergency period was observed to be difficult, since the community was split into two factions, each of which clung to different arguments about the direction of the community's post-recovery future. One faction preferred a 'fair' distribution of financial assistance, while the other wanted 'even' aid distribution. Eventually, the first faction prevailed, which affected positively the speed of recovery. This research has also revealed that local government personnel appeared to understand community values and found the means of developing community organizations so as to advocate for these and develop procedures for protecting them. This strategic, technical capability had the effect of accelerating aid distribution and making the Bantul local government more responsive to its citizens' needs.

5.6 Leadership capability

Natural disasters require extraordinary leadership capability, because extreme events overwhelm local capabilities. Thus, leaders at the local level must adapt and rebuild the emergency system and aim to minimize the adverse effects of disaster in the shortest possible time. Their actions and competence in dealing with this especially difficult condition may emerge as a key indicator of the achievement capacity of leadership. In terms of leadership capability, a disaster requires the leader to be responsible and to make decisions quickly. An emergency is indeed a testing time for a leader in making specific decisions because these can affect the fate of many victims. At such a critical time, an ability to make swift and appropriate decisions, if and when needed, is the main requirement of a leader. The research findings revealed that the Bantul Mayor organized the staff very quickly, just after the earthquake, and decentralized decision-making to the middle echelons of the

bureaucracy so as to provide relief aid as fast as possible in order to avoid community protests to government. The Bantul Mayor continued to exercise his formal authority, duties and responsibilities even though it was during a period of emergency, and there was a lack of adequate information as well as limited resources on which he could rely.

However, organizing all the Bantul local government staff at that time was not an easy task, since many of them faced conflicting demands between their work roles and their family roles when they themselves had become disaster victims. This situation is typically found in those areas that experience a disaster (Quarantelli 1988), but fortunately, even though this was also the case in Bantul, it did not lead to failure on the part of local government personnel in carrying out their occupational responsibilities. That is to say, it was not a major problem, particularly in the higher echelons of organizations whose positions carried with them the greatest authority. Besides demonstrating the quality of responsive leadership, a leader is also required to take risks in any decision he makes. In this case, the Bantul Mayor showed the courage to take great risks when he fixed the length of recovery period in Bantul as 2 years and then encountered numerous objections and great scepticism from the community and NGOs. Eventually, this decision benefitted the whole community because their houses and facilities were rebuilt to a higher standard than before the earthquake. The Bantul Mayor showed leadership qualities in combining initiation and responsiveness in interaction with the bureaucracy responsible particularly for handling emergency and post-disaster activities, as well as coping well with other problems.

Leadership capability was also shown by *Bakornas PB* (National Coordinating Body for Disaster Management) as a representative of central government and the Governor of Yogyakarta province in ensuring coordination between the central, Yogyakarta provincial and Bantul local governments to provide care for the injured, meals and medicine. Under *Bakornas PB* coordination, all affected areas in Bantul and other regencies activated their *Satkorlak PB* and *Satlak PB* to report to the *Bakornas PB*. In this case, the function of Yogyakarta's *Satkorlak PB* was to provide coordination, direction, instruction and training, as well as to control disaster relief operations, including planning, implementation and evaluation of disaster relief in Bantul areas in order to coordinate and control distribution of humanitarian assistance that was undertaken by Bantul's *Satlak PB*. Furthermore, the Governor of Yogyakarta carefully maintained coordination between central and local government, particularly in the distribution of humanitarian aid from the central government. The provincial government acted as coordinator; local government was the implementing agency. The role of the provincial government in the 2006 earthquake was to accommodate the central government's interest at local government level. The provincial government also helped local government in designing programs for the recovery stage based on community empowerment, and it allocated some funds to support redevelopment of Bantul. This happened because during the earthquake, it was not only the local government that was challenged; the size and scope of the earthquake meant that the central and provincial government had to play a major role in response and recovery tasks.

Table 1 presents a summary of the Bantul local government capability in managing disaster, based on the research findings.

6 Critical action: capability requirement in disaster management cycle

Studies on disaster have demonstrated that capability in managing disaster can be differentiated into four stages. The first stage is mitigation, which requires evaluation, monitoring and dissemination. The second is preparedness, which includes planning, exercises,

Table 1 Local government capability in managing disaster

Capability	Findings
Institutional factors	Lack of standard operating procedure in confronting disaster No training and education were available Adopted disaster mitigation effort in the Middle-Term Development Plan
Human resources	Limitation on task delegation and division of labour Having additional tasks to understand local need better
Policy for effective implementation	No national and local policy arrangement and institutions applied No vulnerable area map and early warning system available No mitigation program for bureaucracy staff and community
Financial	Limited amount of money allocated for disaster management activities Ability to switch the allocated budget for response and recovery stages Having financial support from national, provincial and international donors
Technical	Pay more attention to children's and women's needs Manage logistic management adequately
Leadership	The Bantul Mayor demonstrated responsive leadership Collective leadership with multiple stakeholders ran smoothly

training and logistics management expertise. The next stage is response, which requires capability on needs assessment coordination, information exchange and logistics management. The final stage is recovery, which includes damage assessment, debris removal and disaster assistance skill capabilities (Indian Institute of Disaster Management 2007; Shaluf 2008).

The capability requirement of the Bantul local government in each stage is summarized in Table 2, presented from state and non-state actors' point of view. State informants represent the key informant from central government, Yogyakarta Provincial government and the Bantul local government, while non-state informants are community leaders who hold positions in the area affected by the earthquake and have a good knowledge of the 2006 event, the Volunteer Disaster Corps, and national and international NGO which are actively participated in response and recovery. Table 2 reveals that the way non-state informants addressed disaster management requirements demonstrates a participatory approach and more realistic requirements needed, because the informants are disaster victims and disaster participatory organizations that were involved and close to victims. The research discovered that the expectations of state and non-state respondents required that local government must be able to master the complex tasks that related to the characteristics of a problem situation and of decision-making in conditions of uncertainty (Dosi et al. 2003). The capability requirement in managing a disaster is basically associated with the knowledge and skills that are relevant to organizational development (Teece et al. 1990). This knowledge and these skills are then embedded in technical systems and are guided by managerial systems.

Given these circumstances, this research, as presented in Table 2, found that the capability required in the mitigation stage highlights the important of community's voice, the availability of particular institutions in managing disaster, disseminating information to the community and ensuring consistency and sustainability of government disaster program, and political commitment. This, translated into government regulation and policy, constituted an important requirement in this stage. Such efforts that have been

Table 2 Summary of the capability requirement according to state and non-state informants

State	Non-state
Mitigation	Mitigation
Focusing on people’s need	Highlighting community’s voice
Establishing particular institutions for managing disaster	Having strong political commitment
Having sufficient budget to support disaster programs	Providing disaster-related information for community
Preparedness	Ensuring consistency and sustainability of any government disaster program
Having knowledge of potential risk	Having adequate financial resources
Providing adequate early warning system and community disaster awareness	Preparedness
Providing disaster awareness program in the school curriculum	Having skilful resources
Having regular disaster drill	Having preparedness capacity to make the community aware of risk
Having sufficient budget to support disaster programs	Providing early warning system
Response	Providing better disaster information dissemination to the community
Maintaining good networking between all levels of government	Involving public in disaster risk campaigns
Having sufficient budget to support disaster programs	Enhancing public education in understanding disaster
Recovery	Adequate financial resources
Maintaining good networking between all levels of government	Response
Having sufficient budget to support disaster programs	Providing accurate database
	Improving communication skills
	Managing coordination effectively
	Providing standard operating procedures for facing disaster
	Having better national coordination
	Enhancing effective distribution of aid
	Improving networking with national and international NGOs
	Having adequate financial resources
	Recovery
	Enhancing communication skills
	Managing coordination effectively
	Providing standard operating procedures for facing disaster
	Improving networking with national and international NGOs
	Having Adequate financial resources

conducted by local government were reviewed in respect of their technical features, such as the location of a disaster and the analysis of the physical, social, economic and environmental dimensions. These activities are directed towards reduction in risk of an emergency happening, lessening the damaging effects, detection of environmental change, calculation of the distribution of risk and identification of vulnerable areas, and suggestions as to the best alternatives for population withdrawal from risk areas (Indian Institute of Disaster Management 2007).

Mitigation activities occur in all phases of disaster management. In this phase, it is necessary for the public to get information about the disaster, so that they can then plan for themselves, make informed choices and act to reduce their vulnerability (International Federation of Red Cross and Red Crescent Societies 1995). However, it appears that this requirement has not been fully met by local government because of the lack of expertise among local government personnel in this regard.

Following mitigation is preparedness, which informants in this study indicated was a capability that required knowledge of potential risk in their area, an adequate early warning system and community disaster awareness, a disaster awareness-based school curriculum, regular drills, practices and exercises in any kind of disaster, skill resources and preparedness capabilities.

In the response and recovery stages, both state and non-state respondents' views appeared to overlap, because they assumed that having good networking between all levels of government and good skills in communication and coordination, as well as availability of a current and accurate database, was critical requirements for local government in being able to manage a disaster. However, all informants argued that the availability of sufficient financial resources was required at each disaster management stage.

There are numerous steps that should be taken to prepare a community for disaster. These processes include establishing emergency management ordinances; assessing hazards, vulnerability and risks; creating an emergency operation plan; developing a warning system; identifying and acquiring resources and grants; instituting mutual aid agreements; training; and conducting exercises and educating the public (McEntire and Myers 2004). These activities aim to provide early warning with accuracy and sufficient lead time, to increase public awareness and to educate the public on how to survive during a disaster; the outputs usually emerge as reports on early warning and educational programs on disaster (Moe et al. 2007; Moe and Pathranarakul 2006; Shaluf 2008).

This research revealed that the capability of local government in conducting activities related to preparedness for disaster management was relatively high, particularly after the 2006 earthquake, compared to conditions before the earthquake occurred. This effort can be observed in the increased awareness of potential disaster risk and vulnerability among communities through effective communication channels for providing an early warning system. However, state and non-state respondents highlight the requirement for the Bantul local government to have disaster management planning and to conduct disaster exercises and training, which is seen as shortfalls in capability requirement factors in the preparedness stage. Consequently, the key to any successful preparedness program is to lay a foundation, which means establishing regulations that confer on a program power and authority. Regulation is necessary to determine responsibility for the task of preparedness. After the 2006 earthquake, the Bantul local government did not declare any specific regulation regarding local disaster management, although in its Middle-Term Development Plan, the government has started to adopt disaster management factors. This plan shows a commitment from the governing body to its constituents that preparedness for a disaster is a top priority.

The response phase has been a very testing time for leaders. The correctness of decisions made under emergency constraints influenced the fate of many victims. At this critical time, the leadership required the ability to decide correctly, quickly and with the lowest likely risk. Response processes begin as soon as a disaster occurs, and this period of time is clearly understood to involve the most complex actions compared to the mitigation, preparedness and recovery phases (Coppola 2007). This is because recovery is conducted during periods of very high stress and under constraints of time and limited information. Responses include diverse actions such as the limited capacity of injured people, loss of life, and the damage to property and the environment, together with the need to develop coordination and support efforts (Shaluf 2008). This research revealed that although the capability of local government was relatively good, needs assessment coordination, information exchange and logistical expertise were still impaired. This means that the capability requirement in this stage needs to be met to anticipate future disaster. Since the Bantul local government had no experience in facing a disaster, the process that should be followed in response capability requirements, such as having emergency and relief services that meet community expectations by carrying out timely and responsive relief activities, was not in fact followed. Consequently, delay in the response stage still occurred, although the support of non-state institutions has been shown to expedite this process.

The last stage of disaster management is recovery. Recovery is the activity of returning and restoring infrastructure systems to pre-disaster living conditions in the affected community. Decisions and actions that cover planning, coordination and funding therefore need to be taken in guiding short- and long-term efforts to reduce the risk of similar disasters in the future (Coppola 2007). The actions that relate to disaster recovery are the most diverse of all the phases in disaster management. There are a number of actions that are usually undertaken during recovery, such as provision of temporary housing or long-term shelter, assessment of damage and need, demolition of damaged structures, clearance, removal and disposal of debris, rehabilitation of infrastructure, inspection and repair of damaged structures, new construction, social rehabilitation programs, creation of employment opportunities, reimbursement for property losses, rehabilitation of the injured and reassessment of disaster risk. The aim of these activities is to restore community life to pre-disaster conditions (Shaluf 2008). This phase therefore normally requires much more by way of resources than do other phases.

Recovery is also important because it involves individuals, organizations and groups from the whole affected community in the attempt to restore normal life. This situation is observable in this case because damage assessment and debris removal capability for Bantul were entirely the result of the involvement of many stakeholders. The research revealed that, in order to enhance the capability requirement, local government is expected to enhance its communication and coordination capacity and at the same time provides a standard operating procedure that can be followed even if there is a change in the position—the person himself—of the Bantul Mayor. As shown in earlier discussion, it is clearly understood that the role of collective leadership, exemplified by the Bantul Mayor, was crucial. This could become a barrier to progress if the Mayor ceased to hold office and the new Mayor was then unable to give effective instruction to Bantul personnel. Capability on damage assessment and debris removal should thus be prepared for and managed to ensure the success of disaster management.

7 Integrating capability requirement and the facts

As an overwhelming situation, a disaster may test local government capacity to deal with human losses, financial loss or damage to social structure. In this context, disaster can be seen as ‘social vulnerability’ (Gilbert 1995) or ‘lack of capacity’. The concept of capability reflects the institution’s capacity to deploy its resources to achieve its goal (Amit and Schoemaker 1993). Capability requirements for managing a disaster can be identified from each stage of disaster management. In mitigation, for instance, capabilities needed are evaluation, monitoring and dissemination. These requirements aim to reduce the damaging effects of unavoidable emergency and to suggest the best alternative for community withdrawal from risk areas. In preparedness, planning, exercise and training are the capability required in order to increase awareness of potential disaster risk and vulnerability among communities through effective communication channels for providing an early warning system. Needs assessment coordination, information exchange and logistical expertise are needed in the response stage. Damage assessment expertise, debris removal expertise and disaster assistance skills are required in the recovery capability management (Indian Institute of Disaster Management 2007; Moe and athranarakul 2006; Shaluf 2008).

Significant progress has been made by the Bantul local government in terms of local capability to deal with and recover from the 2006 earthquake. The government has successfully managed resources in implementing response and recovery strategies by maintaining coordination with national and international NGOs, as well as donor agencies to help Bantul in providing and delivering humanitarian aid to the community. The Bantul local government was advantaged by using local culture and local wisdom to set up rehabilitation and reconstruction programs that involved the community in the process. Local culture refers to the value of cooperation within and between social networks, while local wisdom emerges as a sense of collectivism, solidarity and tolerance embedded in the daily life of the Bantul community. The 2006 earthquake has led the Bantul local government to evolve from routine roles and tasks into more strategic roles by means of which the leader can alter its resource base and integrate this in order to generate value-creating strategies (Eisenhardt and Martin 2000) so as to provide a better service in the emergency and recovery periods and encourage the community to be optimistic about the future. However, lack of capability required in managing a disaster has remained a major problem for the Bantul local government in solving this complex task, as described in Table 3. For example, there is no mechanism to ensure the sustainability of disaster mitigation and preparedness programs and very few staff who have capability in damage assessment and debris removal.

It is understood that the Bantul local government had limited knowledge and skills to manage the quake, since they had never experienced such an emergency. Positively, the managerial system guided by the leaders at the top level of the government supported local government personnel, central government and provincial government to develop the technical system to handle the situation during and after the quake, as Eisenhardt and Martin (2000) have shown to be the better way for the leader to allocate resources. The most important finding was that the organizational capability in Bantul has been developed as collective leadership, as well as a result of social interaction between the government and the community. This research concluded that some impairment in the capability requirement for managing a disaster could be substituted with what Leonard-Barton (1992) called managerial systems and the community’s values and norms. Therefore, through such capabilities, local government began the process of coping with the critical success factors for disaster management.

Table 3 Capability requirement: fact and gap

Stage	Capability requirement	Existing facts (research findings)	Gaps
Mitigation	Evaluation Monitoring Dissemination	The role of particular institutions to responsible disaster mitigation activities is very limited. Therefore, evaluation, monitoring and dissemination related to disaster are very rarely conducted, although after the 2006 earthquake, the Bantul local government appointed a Civil Protection Unit to manage disaster and to conduct information-related disaster dissemination to the community	No mechanism to ensure the sustainability of disaster-related programs as part of evaluation and monitoring requirement for managing a disaster. Limited local financial resources to support mitigation activities. Poor information dissemination to the community
Preparedness	Planning Exercise Training	Before the 2006 earthquake, no planning, exercises or training was conducted. However, after the earthquake, Bantul developed a Middle-Term Development Plan to accommodate disaster issues in local government programs. Moreover, an early warning system, training and exercises have been conducted with the support of international NGOs	Lack of disaster mitigation and preparedness infrastructure. Maintenance of early warning equipment has remained a major problem due to limited government budget. Training has been provided only to the staff of particular offices responsible for disasters, and some districts have not been involved in conducting disaster preparedness activities
Response	Needs assessment coordination Information exchange Logistical expertise	Coordination functions with other institutions and information exchange have been provided and run mostly by the local leader. Although no logistical expertise was available, the heads of departments have mastered the condition of Bantul, and this therefore helped the effective delivery of humanitarian aid to victims	Limited initiatives from the bottom up
Recovery	Damage assessment expertise Debris removal expertise Disaster assistance skill	Damage assessment and debris removal expertise rely on other institutions (universities, NGOs) Disaster assistance skill has been gained through attending workshops or seminars related to disaster management	Limited staff capable on damage assessment and debris removal. Disaster assistance activities for community mostly conducted by NGOs

8 Conclusion

The importance of study on capability and the capability requirement for local government in managing a disaster has become a major concern in disaster discourse, because it emphasizes broader issues rather than focus only on the response and recovery stages. Lessons learnt from the Bantul local government as a case study in managing a natural

disaster have shown favourable results in terms of institutions, human resources, policy for effective implementation, financial and technical resources and leadership. The expectations of the community represented in the capability requirement for local government in mitigation, preparedness, response and recovery have resulted in increased concern for disaster awareness. Significant achievement has been made by the local government in terms of local capability in implementing response and recovery strategies. The collaborative leadership shown at all government levels played an important role in the great achievement after the earthquake, and at the same time, the local government evolved their routine roles and tasks so as to be able to undertake emergency roles in which leaders adjust the resource base and integrate resources in order to generate value-creating strategies.

In conclusion, this study shifts the emphasis to the resources that an organization possesses as the possible basis for a strategy. The essence of understanding capability is not the resources that an organization owns but its capacity to use, develop and combine them. What led to the Bantul local government's significant achievement in managing the 2006 earthquake was the way in which collaborative local leaders combined limited resources and deployed them to establish positions of sustainable competitive advantage and benefit for the community. They involved what Salaman and Asch (2003) say are bundles of skills consisting of not only simple skills that are relatively easily obtained but also combinations of such skills. These bundles of skills also point to the relationship between skills and holders of skills, such as patterns of cooperation and mutual support. Relevant capabilities in managing a disaster have grown slowly in the Bantul local government, particularly after the 2006 earthquake, and the results can be seen in local government increased awareness of disaster-related issues and how this awareness has been embedded in routine activities of government bodies.

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