

# **Part B** **Earthquake Disaster Sector Survey**

## **Part B – Earthquake Disaster Sector Survey**

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## **The Study on Program Formulation in Disaster Mitigation Sector in the Philippines**

### **I. Introduction**

A risk perception study in connection with the Program Formulation in Disaster Mitigation Sector was undertaken in selected cities in Metro Manila.

For this purpose, survey questionnaires were administered to 70 pre-selected respondents from October 4 to October 8, 2004.

#### **1. The objectives of the study are the following:**

- a. To analyze / evaluate the knowledge or issues raised in the Japanese assistance on disaster mitigation sector in the Philippines.
- b. To analyze / evaluate the environment and resources (budget, human resources, etc.) on disaster mitigation in the Philippines through the discussion among the Government of the Philippines, local government units, communities, educational institutions, private organizations and main donors.
- c. To identify priority tasks which may be undertaken in the future by Japanese assistance and to prepare the Assistance Task List (Draft) for mid or long term assistance along proper direction of cooperation.
- d. To identify the issues of the Priority tasks for project implementation.
- e. To formulate of the Outline Assistance Program (Draft) for identified Priority Tasks for assistance with consensus among the concerned parties.

#### **2. Factors Critical in Understanding Risks**

Fully understanding risk perception is dependent on several intertwining variables which colour one's perception of what is risk. Some of these variables are:

- a. The academic discipline of the individual

The education and training of an individual as he grapples understanding the meaning of risk is greatly influenced by his academic background, field of discipline and expertise including other similar cognitive orientation. This particular variable can either be a facilitating or negating factor in the process of understanding the notion of risk perception.

- b. The professional experience of an individual

The professional experience of an individual also greatly influences his process of distilling risk components. The professional experience of an

individual can influence his perception of the meaning either at the cognitive or affective levels or it can even be in both.

c. Exposure to disaster

One's exposure to certain types of disaster influences greatly the perception of the concept of risk. For example, frequent exposure to risk factor illustrates how one can interpret risk in a given governmental environment.

d. Work environment

A risky environment greatly influence one's perception of risk. Individuals not frequently exposed to danger will have a different concept of risk than those that are working in dangerous areas.

e. Culture and belief

It is said that when a person perceives a concept, the interpretation is greatly influenced by his culture and his belief. Therefore, an understanding of the notion of risk has cultural boundedness and subject to the influence of one's relevant belief which at the end colour one's understanding of a concept.

All these five variables described will form a spectrum through which one interprets risk or any other similar concept. Another interpretation of these intertwining variables is that it can be the sum total of the risk environment which can be country specific.

## **II. Limitations of the Survey**

The way the questionnaire was devised, limits the applications and use of other statistical and analytical tools.

Moreover, the time limitations prevented the production of summary tables.

### III. Methodology

#### 1. Description of Methodology Used

The study was undertaken primarily through the use of survey questionnaires administered to (70) pre-selected respondents from five major categories i.e. 18 national government agencies, 31 local governments, 4 non-governmental organizations, 8 academia, and 9 residents.

Eight (8) experienced interviewers were organized into a team of four with one team consisting of two interviewers. The interviewers were required to undergo a project orientation course from September 27 to 30, 2004 at the Local Government Development Foundation seminar hall.

The survey and interviews were undertaken in ten (10) cities in the National Capital Region which represents 58.82% of the total number of local governments in the national capital region, which is seventeen (17) cities and municipalities.

The selection of the respondents in the study, considered among others, those officials who participated in various MMEIRS sponsored seminar workshops conducted in 2003 and 2004.

In order to have representative samples, respondents were recruited from the major sectors of the Metro Manila community such as those from national government agencies, local governments, Non-Government Organizations, residents and institutions of learning.

Because of the very limited time to undertake the study, each of the four teams of interviewers was provided a car.

#### Survey Implementation Schedule

Activities	September				October				Remarks
	WK 1	WK 2	WK 3	WK 4	WK 1	WK 2	WK 3	WK 4	
1. Training of Interviewers									
2. Actual Survey									
3. Analysis of Survey Results									
4. Report Writing									
5. Submission of Report									October 25, 2004

Analysis of survey results were undertaken in order to determine the risk perceptions of the various categories of respondents in the study.

The survey results are presented in the following manner:

1. Responses of Respondents by Category in Enhancing Risk Reduction
2. Responses of Respondents by Category in the Improvement of Seismic Performance of Buildings
3. Responses of Respondents by Category in the Improvement of Seismic Performance of Public Utilities and Infrastructures
4. Responses of Respondents by Category of Earthquake Resistant Urban Development
5. Responses of Respondents by Category on Research on Earthquake Disaster
6. Risk Perception of the Respondents

The responses of the five categories of respondents of the five questions in the Study are all summarized in twenty five (25) tables.

The responses by category are ranked accordingly in order to establish the system of priority (first to third) in each program area of the five questions in the survey.

This procedure in ranking responses facilitated the corresponding analysis of the data gathered.

The complete analysis in turn established the ranking and priorities of the various elements in each program concerned in the five survey questions and responses of which are rank in accordance with the capability levels, namely Self-Help, Mutual Help and External Help.

Results of analysis and evaluation are likewise translated into pie charts and tables.

Some of the results of the interviews conducted is a mixture of conjectures, projections and predictions.

Interpretations of some survey results specifically risk perception suffer from minor aberration.

Generally the four teams of interviewers found the respondent cities and municipalities in Metro Manila very accommodating and cooperative. However, the teams encountered some problems during the interviews.

## **2. Problems encountered in the Interviews and Survey**

There were several problems encountered by the eight (8) interviewers which formed themselves into a team of four. Some of the problems encountered were the following:

### **a. The non-availability of the pre-identified respondents**

Some respondents previously identified were either too busy in the field and some were on travel during the interview period, therefore they were unavailable. Interviewers resorted to interviewing alternate respondents.

### **b. Retirement and reassignments of pre-identified respondents directly involved in disaster mitigation in their respective cities.**

There were several changes and replacements of people who were not anymore involved in disaster management but who were participants in the MMEIRS study. Locating them became a problem to some interviewers. But most could not be located anymore.

### **c. Refusal to be interviewed for no reason whatsoever**

Some respondents refused to be interviewed. Some respondents reasoned they are not interested, others said, they do not know the subject.

### **d. Refusal to be interviewed in deference to their supervisors or more technical officials in their offices.**

Some respondents preferred that their supervisors or the more technical people be interviewed instead of themselves. These types of respondents were concerned with the accuracy of their answers.

### **e. The arrogance of some alternate respondents**

Some respondents because of their supervisory positions were arrogant. Some wanted letter of appointments sent to them before being interviewed. Others felt, they knew better or more about earthquake than the interviewers, while still others wanted the survey forms accomplished days after the interviews were made.

## **3. General Reactions of the Respondents to the Survey**

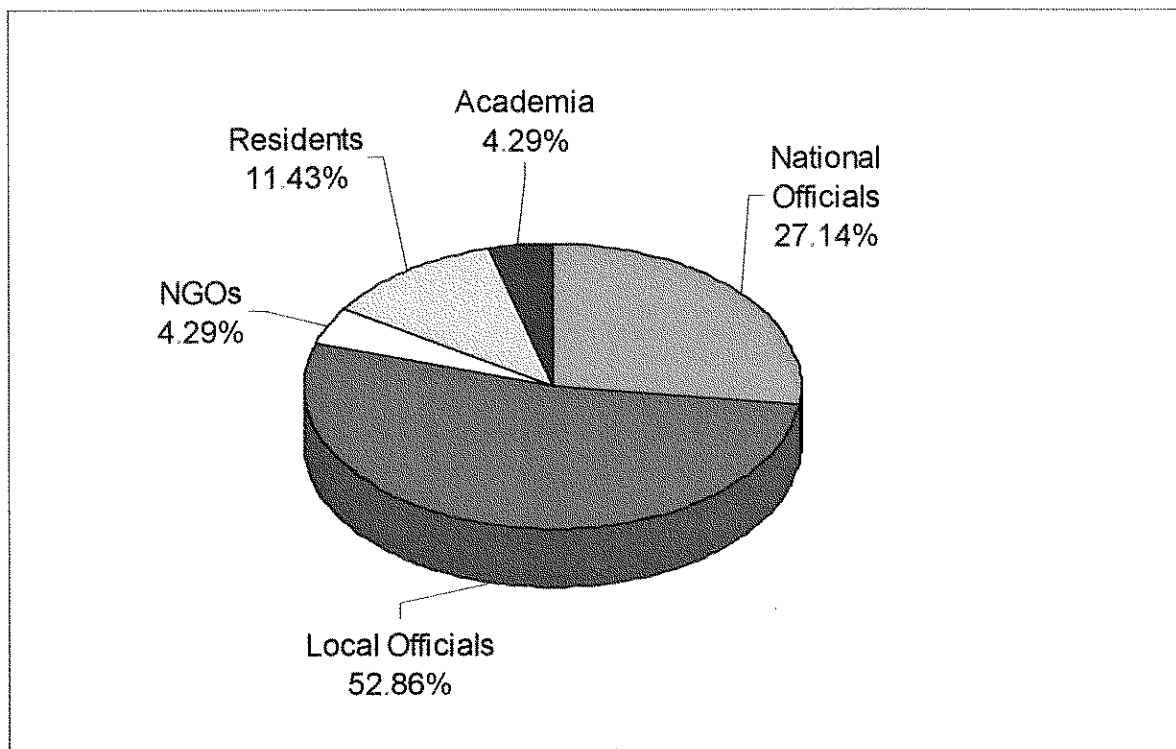
Some of the comments and reactions of the respondents to the survey which are instructive and which are useful information are the following:

- a. The survey is timely and to some extent alarming (Bureau of Fire Protection)
- b. The survey is too technical and needs much funding for implementation (DSWD NCR)

- c. The survey is perceived to be very informative (PNP)
- d. Caloocan City complained that the change in administration has badly affected the disaster planning processes in the city.
- e. Makati City wanted to get a GIS map of the city from the MMEIRS study.
- f. The survey did not include potential damage to high rise buildings but concentrated primarily on residential buildings (Bureau of Designs, DPWH)
- g. Some local government and national agency respondents expressed their frustrations of similar studies previously conducted but no actions or follow-ups were made.
- h. Respondent local government officials articulated the need to upgrade the competence of local authorities on disaster mitigation.
- i. Local experience on disaster mitigation should be shared with all those who or which can leave or utilize such experiences.
- j. Respondents familiar with MMEIRS expressed their interest and need to get copies of the final MMEIRS Reports.

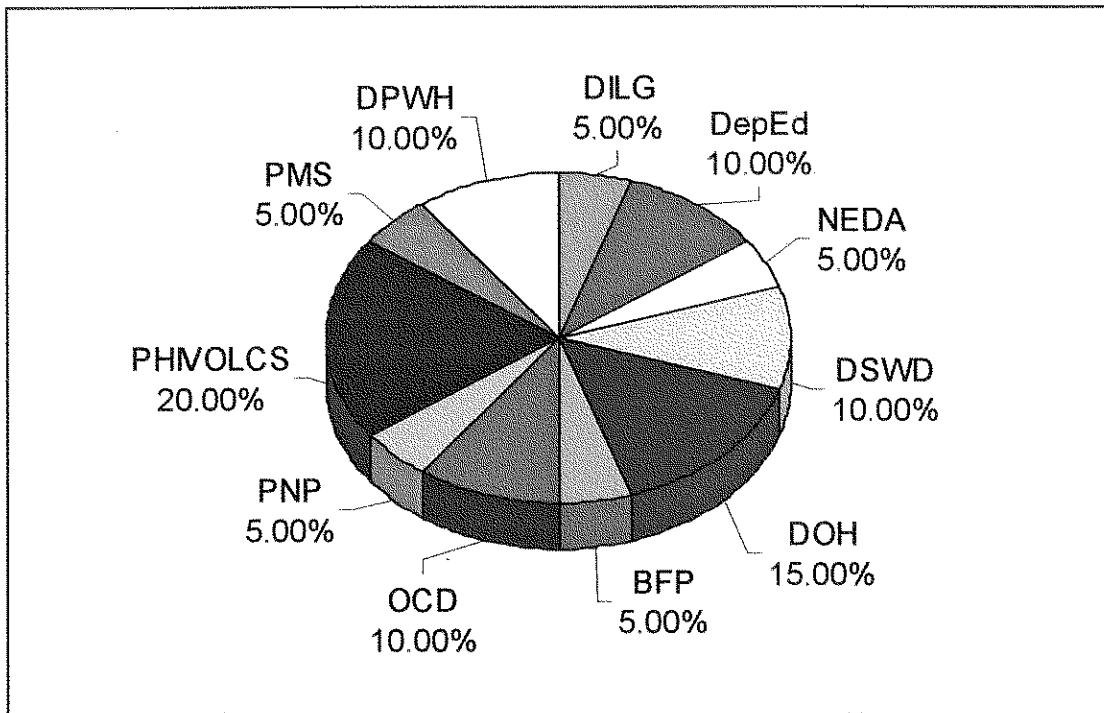


**Distribution of Actual Respondents by Category**



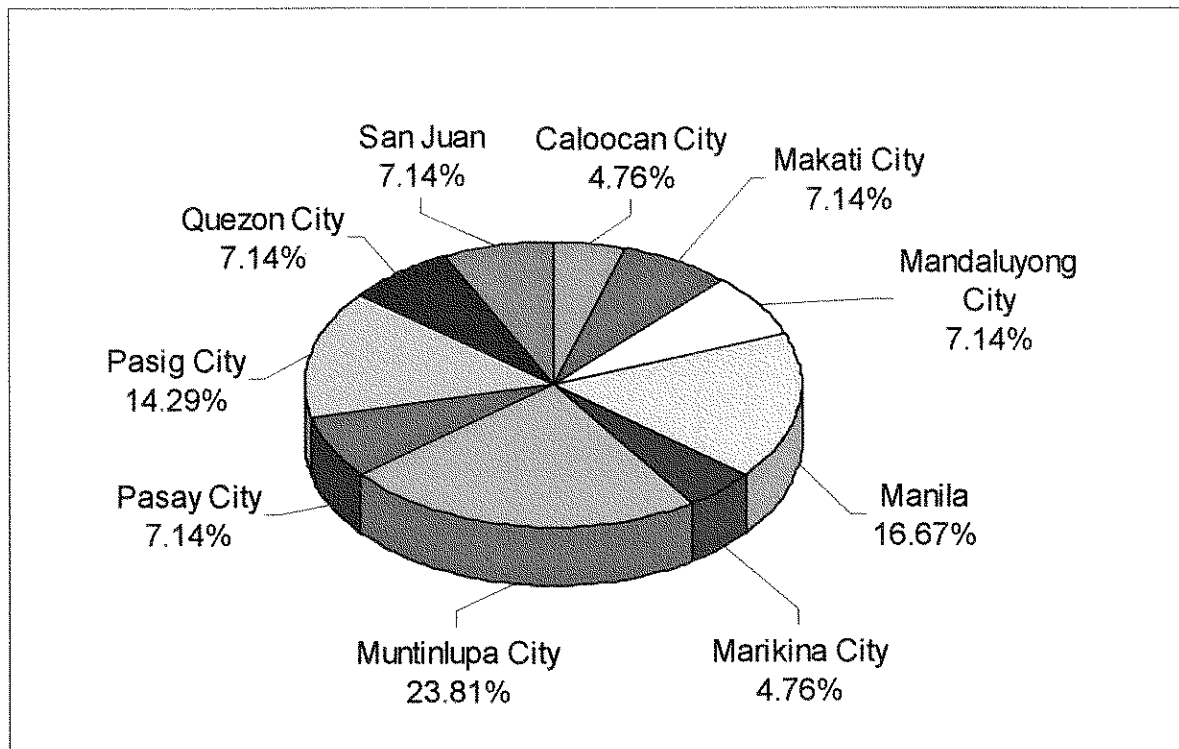
Category of Respondents	No. of Targeted Respondents	No. of Actual Respondents
National Officials	24	20
Local Officials	31	37
NGOs	2	3
Residents	15	8
Academia	3	3
<b>Total Respondents</b>	<b>75</b>	<b>71</b>

**Distribution of Actual Respondents by National Agencies**



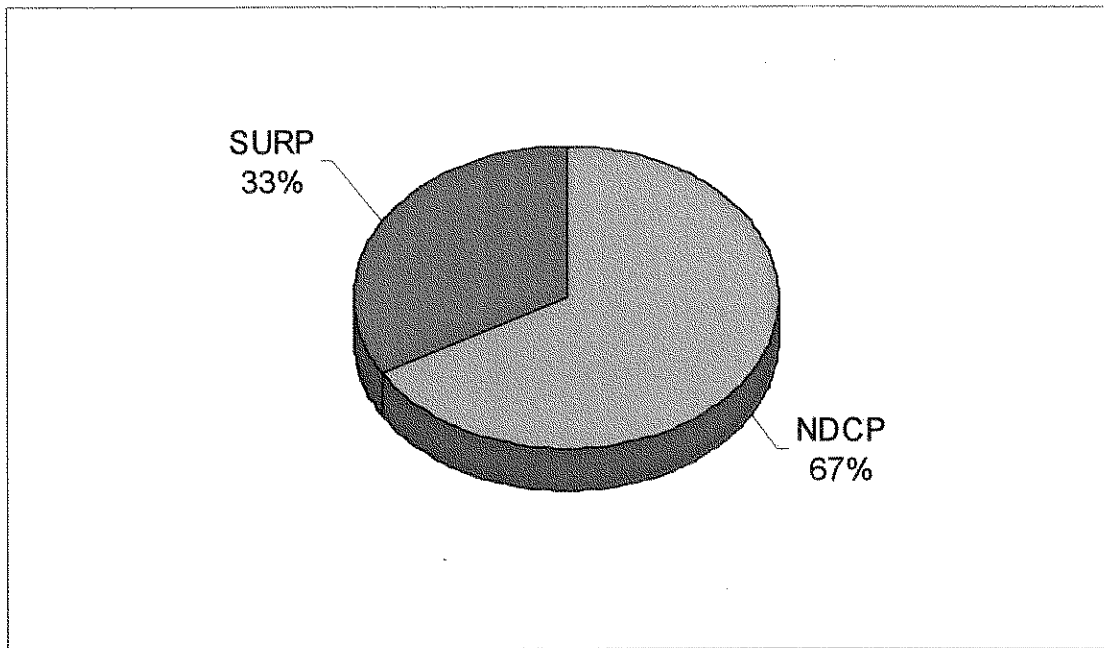
Agency	No. of Targeted Respondents	No. of Actual Respondents
DILG	1	1
DepEd	2	2
NEDA	1	1
DSWD	2	2
DOH	2	3
BFP	1	1
OCD	2	2
PNP	1	1
PHIVOLCS	5	4
PMS	1	1
DPWH	2	2
MMDA	4	
<b>Total</b>	<b>24</b>	<b>20</b>

**Distribution of Respondents by Geographic Locations**

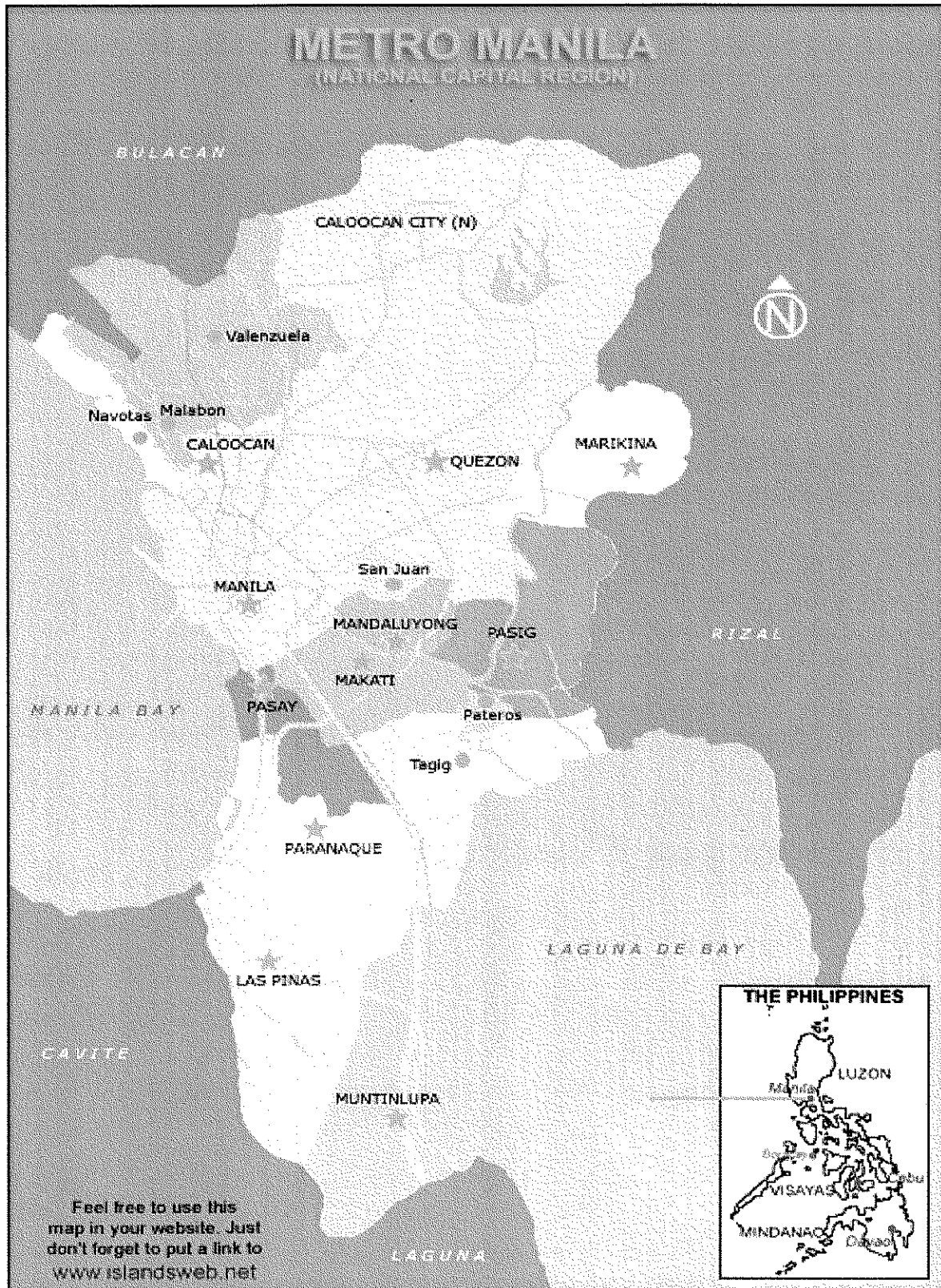


Geographic Location of Respondents	No. of Targeted Respondents	No. of Actual Respondents
Caloocan City	3	2
Makati City	4	3
Mandaluyong City	3	3
Manila	8	7
Marikina City	3	2
Muntinlupa City	8	10
Pasay City	3	3
Pasig City	8	6
Quezon City	3	3
San Juan	3	3
No Information		3
<b>Total Respondents</b>	<b>46</b>	<b>45</b>

**Distribution of Respondents in Academia**



<b>Academia</b>	<b>Respondents</b>
NDCP	2
SURP	1
<b>Total</b>	<b>3</b>



**Map indicating the location of the ten cities (marked with star) where the survey was undertaken**

**IV. Survey Results and Analysis**

**Mandate and Budget of the Organizations**

Responses on this particular section as they refer to the positions and budgets of the respondents and their corresponding offices are not useful because the respondents are not directly involved in disaster management and, therefore, figures or amounts supplied are based merely on conjecture or speculation and have no basis in relation to the 5% Calamity Fund as provided for under Republic Act 8185.

**1. Responses of Respondents by Category in Enhancing Risk Reduction**

Table 1.a. Frequencies and Ranking of Responses of National Agencies on Enhancing Risk Reduction Capability

PROGRAMS (Risk Enhancement Areas)	Capability to Enhance Risk Reduction					
	Self-help	Rank	Mutual help	Rank	External help	Rank
Establish policy for disaster management	1	9	1	10.5	-	-
Strengthen legal basis for disaster management	3	4.5	2	7	-	-
Strengthen institutional capacity for disaster management	3	4.5	3	3.5	4	1.5
Raise awareness on earthquake disaster	4	2.5	2	7	1	8.5
Conduct education and training program	6	1	5	1.5	4	1.5
Prepare disaster management plan	4	2.5	3	3.5	1	8.5
Enhance response and relief capacity	1	9	1	10.5	3	4
Enhance recovery and reconstruction capacity	-	-	2	7	1	8.5
Enhance information and communication system	1	9	5	1.5	2	6
Strengthen forecasting and early warning system	2	6.5	2	7	3	4
Enhance emergency health and medical response system	-	-	2	7	1	8.5
Stockpile water, food and other necessities	2	6.5	-	-	3	4
<b>TOTAL</b>	<b>27</b>		<b>28</b>		<b>23</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL - SELF HELP	
1st Priority Rank 1	Conduct education and training
2nd Priority Rank 2.5	Raise awareness of earthquake disaster Prepare disaster management plan
3rd Priority Rank 4.5	Strengthen legal basis for disaster management Strengthen institutional capacity for disaster management

<b>CAPABILITY LEVEL – mutual help</b>	
1st Priority Rank 1.5	Conduct education and training program Enhance information and communication system
2nd Priority Rank 3.5	Strengthen institutional capacity for disaster management Prepare disaster management plan
3rd Priority Rank 7	Strengthen legal basis for disaster management Raise awareness on earthquake disaster Enhance recovery and reconstruction capacity Strengthen forecasting and early warning system Enhance emergency health and medical response system

<b>CAPABILITY LEVEL – EXTERNAL HELP</b>	
1st Priority Rank 1.5	Strengthen institutional capacity for disaster management Conduct education and training program
2nd Priority Rank 4	Strengthen forecasting and early warning system Enhance response and relief capacity Stockpile water, food and other necessities
3rd Priority Rank 6	Enhance information and communication system

Table 1.b. Responses of LGUs on Enhancing Risk Reduction Capability

PROGRAMS (Risk Enhancement Areas)	Capability to Enhance Risk Reduction					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Establish policy for disaster management	14	1	4	12	5	7.5
Strengthen legal basis for disaster management	7	6	6	10.5	3	12
Strengthen institutional capacity for disaster management	7	6	12	2	8	3
Raise awareness on earthquake disaster	13	2	10	5	4	10
Conduct education and training program	11	3	12	2	10	1
Prepare disaster management plan	9	4	10	5	4	10
Enhance response and relief capacity	7	6	9	7	4	10
Enhance recovery and reconstruction capacity	3	11	7	8.5	9	2
Enhance information and communication system	6	8.5	10	5	7	4.5
Strengthen forecasting and early warning system	5	10	7	8.5	7	4.5
Enhance emergency health and medical response system	6	8.5	12	2	6	6
Stockpile water, food and other necessities	2	12	6	10.5	5	7.5
<b>TOTAL</b>	<b>90</b>		<b>105</b>		<b>72</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

<b>CAPABILITY LEVEL – SELF HELP</b>	
1st Priority Rank 1	Establish policy for disaster management
2nd Priority Rank 2	Raise awareness of earthquake disaster
3rd Priority Rank 3	Conduct education and training program

<b>CAPABILITY LEVEL – MUTUAL help</b>	
1st Priority Rank 2	Strengthen institutional capacity for disaster management Conduct education and training program Enhance emergency health and medical response system
2nd Priority Rank 5	Raise awareness on earthquake disaster Prepare disaster management plan Enhance information and community system
3rd Priority Rank 7	Enhance response and relief capacity

<b>CAPABILITY LEVEL – EXTERNAL HELP</b>	
1st Priority Rank 1	Conduct education and training program
2nd Priority Rank 2	Enhance recovery and reconstruction capacity
3rd Priority Rank 3	Raise awareness on earthquake disaster

Table 1.c. Responses of the Academe on Enhancing Risk Reduction Capability

PROGRAMS (Risk Enhancement Areas)	Capability to Enhance Risk Reduction					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Establish policy for disaster management	1	4	-	-	-	-
Strengthen legal basis for disaster management	-	-	-	-	-	-
Strengthen institutional capacity for disaster management	2	1.5	3	1.5	2	1
Raise awareness on earthquake disaster	1	4	1	4	1	3
Conduct education and training program	2	1.5	3	1.5	1	3
Prepare disaster management plan	-	-	1	4	-	-
Enhance response and relief capacity	-	-	-	-	-	-
Enhance recovery and reconstruction capacity	-	-	-	-	-	-
Enhance information and communication system	1	4	1	4	1	3
Strengthen forecasting and early warning system	-	-	-	-	-	-
Enhance emergency health and medical response system	-	-	-	-	-	-
Stockpile water, food and other necessities	-	-	-	-	-	-
<b>TOTAL</b>	<b>6</b>		<b>9</b>		<b>5</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

<b>CAPABILITY LEVEL – SELF HELP</b>	
1st Priority Rank 1.5	Strengthen institutional capacity for disaster management Conduct education and training program
2nd Priority Rank 4	Establish policy for disaster management Raise awareness on earthquake disaster Enhance information and communication system.
3rd Priority	NO THIRD PRIORITY AREAS WERE INDICATED IN THE RESPONSES



<b>CAPABILITY LEVEL – mutual help</b>	
1st Priority Rank 1.5	Strengthen institutional capacity for disaster management Conduct education and training program
2nd Priority Rank 4	Raise awareness on earthquake disaster Prepare disaster management plan Enhance information and community system
3rd Priority	NO THIRD PRIORITY AREAS WERE INDICATED IN THE RESPONSES

<b>CAPABILITY LEVEL – EXTERNAL HELP</b>	
1st Priority Rank 1	Strengthen institutional capacity for disaster management
2nd Priority Rank 3	Raise awareness on earthquake disaster Conduct education and training program Enhance information and communication system
3rd Priority	Raise awareness on earthquake disaster

Table 1.d. Responses of NGOs on Enhancing Risk Reduction Capability

PROGRAMS (Risk Enhancement Areas)	Capability to Enhance Risk Reduction					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Establish policy for disaster management	-	-	-	-	-	-
Strengthen legal basis for disaster management	-	-	-	-	-	-
Strengthen institutional capacity for disaster management	2	1	-	-	-	-
Raise awareness on earthquake disaster	1	3.5	-	-	-	-
Conduct education and training program	-	-	1	2.5	-	-
Prepare disaster management plan	1	3.5	-	-	-	-
Enhance response and relief capacity	1	3.5	1	2.5	-	-
Enhance recovery and reconstruction capacity	-	-	1	2.5	1	1
Enhance information and communication system	-	-	-	-	-	-
Strengthen forecasting and early warning system	-	-	-	-	-	-
Enhance emergency health and medical response system	1	3.5	1	2.5	-	-
Stockpile water, food and other necessities	-	-	-	-	-	-
<b>TOTAL</b>	<b>6</b>		<b>4</b>		<b>1</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

<b>CAPABILITY LEVEL – SELF HELP</b>	
1st Priority Rank 1	Strengthen institutional capacity for disaster management
2nd Priority Rank 3.5	Raise awareness on earthquake disaster Prepare disaster management plan Enhance response and relief capacity Enhance emergency health and medical response system
3rd Priority	NO THIRD PRIORITY AREAS WERE INDICATED IN THE RESPONSES

CAPABILITY LEVEL – MUTUAL HELP	
1st Priority Rank 2.5	Conduct education and training program Enhance response and relief capacity Enhance recovery and reconstruction capacity Enhance emergency health and medical response system
2nd Priority	NO SECOND PRIORITY AREAS WERE INDICATED IN THE RESPONSES
3rd Priority	NO THIRD PRIORITY AREAS WERE INDICATED IN THE RESPONSES

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1	Enhance recovery and reconstruction capacity
2nd Priority	NO SECOND PRIORITY AREAS WERE INDICATED IN THE RESPONSES
3rd Priority	NO THIRD PRIORITY AREAS WERE INDICATED IN THE RESPONSES

Table 1.e. Responses of Residents on Enhancing Risk Reduction Capability

PROGRAMS (Risk Enhancement Areas)	Capability to Enhance Risk Reduction					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Establish policy for disaster management	4	3	3	7	-	-
Strengthen legal basis for disaster management	-	-	3	7	-	-
Strengthen institutional capacity for disaster management	1	7.5	3	7	3	3
Raise awareness on earthquake disaster	5	1.5	-	-	-	-
Conduct education and training program	2	5	5	2.5	2	5
Prepare disaster management plan	1	7.5	7	1	1	7
Enhance response and relief capacity	-	-	-	-	3	3
Enhance recovery and reconstruction capacity	-	-	3	7	4	1
Enhance information and communication system	3	4	3	7	1	7
Strengthen forecasting and early warning system	1	7.5	5	2.5	-	-
Enhance emergency health and medical response system	1	7.5	3	7	3	3
Stockpile water, food and other necessities	5	1.5	3	7	1	7
TOTAL	23		38		17	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1.5	Raise awareness on earthquake disaster Stockpile water, food and other necessities
2nd Priority Rank 3	Establish policy for disaster management
3rd Priority Rank 4	Enhance information and communication system

<b>CAPABILITY LEVEL – mutual help</b>	
1st Priority Rank 1	Prepare disaster management plan
2nd Priority Rank 2.5	Conduct education and training program Strengthen forecasting and early warning system
3rd Priority Rank 7	Establish policy for disaster management Strengthen legal basis for disaster management Strengthen institutional capacity for disaster management Enhance recovery and reconstruction capacity Enhance information and communication system Enhance emergency health and medical response system Stockpile water, food and other necessities

<b>CAPABILITY LEVEL – EXTERNAL HELP</b>	
1st Priority Rank 1	Enhance recovery and reconstruction capacity
2nd Priority Rank 3	Strengthen institutional capacity for disaster management Enhance response and relief capacity Enhance emergency health and medical response system
3rd Priority Rank 5	Conduct education and training program

## 2. Responses of Respondents by Category in the Improvement of Seismic Performance of Buildings

Table 2.a. Responses of National Agencies on Improvement of seismic performance of buildings

PROGRAMS (Improvement of Seismic Performance of Buildings)	Capability to Improve Seismic Performance of Buildings					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Develop and standardize seismic codes	2	4.5	4	1.5	4	2
Improve construction permission process of buildings	3	2	2	6.5	-	-
Improve inspection capacity	3	2	3	4	3	3
Improve construction practice	1	6.5	2	6.5	-	-
Improve construction material for buildings	1	6.5	-	-	-	-
Promote research and development of technology for retrofitting of residential buildings	-	-	3	4	6	1
Promote retrofitting of residential buildings	-	-	3	4	1	4.5
Promote construction of earthquake resistant residential buildings	2	4.5	1	8	-	-
Enhance basic inventory of buildings	3	2	4	1.5	1	4.5
<b>TOTAL</b>	<b>15</b>		<b>22</b>		<b>12</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 2	Improve construction permission process of buildings Improve inspection capacity Enhance basic inventory of buildings
2nd Priority Rank 4.5	Develop and standardize seismic codes Promote construction of earthquake resistant residential buildings
3rd Priority Rank 6.5	Improve construction practice Improve construction material for buildings

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1.5	Develop and standardize seismic codes Enhance basic inventory of buildings
2nd Priority Rank 4	Improve inspection capacity Promote retrofitting of residential buildings Promote research and development of technology for retrofitting of residential buildings
3rd Priority Rank 6.5	Improve construction practice Improve construction permission process of buildings Promote construction of earthquake resistant residential buildings

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1	Promote research and development of technology for retrofitting of residential buildings
2nd Priority Rank 2	Develop and standardize seismic codes
3rd Priority Rank 3	Improve inspection capacity

Table 2.b. Responses of LGUs on Improvement of seismic performance of buildings

PROGRAMS (Improvement of Seismic Performance of Buildings)	Capability to Improve Seismic Performance of Buildings					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Develop and standardize seismic codes	5	7.5	9	6	9	2
Improve construction permission process of buildings	10	2	9	6	4	5.5
Improve inspection capacity	18	1	10	3.5	2	8
Improve construction practice	7	5	8	8	1	9
Improve construction material for buildings	4	9	9	6	5	4
Promote research and development of technology for retrofitting of residential buildings	5	7.5	10	3.5	10	1
Promote retrofitting of residential buildings	8	3.5	5	9	3	7
Promote construction of earthquake resistant residential buildings	6	6	12	2	6	3
Enhance basic inventory of buildings	8	3.5	14	1	4	5.5
TOTAL	71		86		44	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

<b>CAPABILITY LEVEL – SELF HELP</b>	
1st Priority Rank 1	Improve inspection capacity
2nd Priority Rank 2	Improve construction permission process of buildings
3rd Priority Rank 3.5	Promote retrofitting of residential buildings Enhance basic inventory of buildings

<b>CAPABILITY LEVEL – mutual help</b>	
1st Priority Rank 1	Enhance basic inventory of buildings
2nd Priority Rank 2	Promote construction of earthquake resistant residential buildings
3rd Priority Rank 3.5	Improve inspection capacity Promote research and development of technology for retrofitting of residential buildings

<b>CAPABILITY LEVEL – EXTERNAL HELP</b>	
1st Priority Rank 1	Promote research and development of technology for retrofitting of residential buildings
2nd Priority Rank 2	Develop and standardize seismic codes
3rd Priority Rank 3	Promote construction of earthquake resistant residential buildings

Table 2.c. Responses of the Academe on Improvement of seismic performance of buildings

PROGRAMS (Improvement of Seismic Performance of Buildings)	Capability to Improve Seismic Performance of Buildings					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Develop and standardize seismic codes	-	-	-	-	-	-
Improve construction permission process of buildings	-	-	-	-	-	-
Improve inspection capacity	-	-	-	-	-	-
Improve construction practice	-	-	-	-	-	-
Improve construction material for buildings	-	-	-	-	-	-
Promote research and development of technology for retrofitting of residential buildings	-	-	-	-	-	-
Promote retrofitting of residential buildings	-	-	-	-	-	-
Promote construction of earthquake resistant residential buildings	-	-	-	-	-	-
Enhance basic inventory of buildings	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1	None
2nd Priority Rank 2	None
3rd Priority Rank 3	None

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1	None
2nd Priority Rank 2	None
3rd Priority Rank 3	None

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1	None
2nd Priority Rank 2	None
3rd Priority Rank 3	None

Table 2.d. Responses of NGOs on Improvement of seismic performance of buildings

PROGRAMS (Improvement of Seismic Performance of Buildings)	Capability to Improve Seismic Performance of Buildings					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Develop and standardize seismic codes	1	3.5	1	3.5	1	2
Improve construction permission process of buildings	1	3.5	1	3.5	1	2
Improve inspection capacity	-	-	-	-	-	-
Improve construction practice	1	3.5	1	3.5	1	2
Improve construction material for buildings	-	-	-	-	-	-
Promote research and development of technology for retrofitting of residential buildings	-	-	1	3.5	-	-
Promote retrofitting of residential buildings	-	-	1	3.5	-	-
Promote construction of earthquake resistant residential buildings	1	3.5	1	3.5	-	-
Enhance basic inventory of buildings	2	1	-	-	-	-
<b>TOTAL</b>	<b>6</b>		<b>6</b>		<b>3</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

<b>CAPABILITY LEVEL – SELF HELP</b>	
1st Priority Rank 1	Enhance basic inventory of buildings
2nd Priority Rank 3.5	Develop and standardize seismic codes Improve construction permission process of buildings Improve construction practice Promote construction of earthquake resistant residential buildings

<b>CAPABILITY LEVEL – mutual help</b>	
1st Priority Rank 3.5	Develop and standardize seismic codes Improve construction permission process of buildings Improve construction practice Promote research and development of technology for retrofitting of residential buildings Promote retrofitting of residential buildings Promote construction of earthquake resistant residential buildings

<b>CAPABILITY LEVEL – EXTERNAL HELP</b>	
1st Priority Rank 2	Develop and standardize seismic codes Improve construction permission process of buildings Improve construction practice

Table 2.e. Responses of Residents on Improvement of seismic performance of buildings

PROGRAMS (Improvement of Seismic Performance of Buildings)	Capability to Improve Seismic Performance of Buildings					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Develop and standardize seismic codes	-	-	5	3	2	3.5
Improve construction permission process of buildings	2	2	7	1	-	-
Improve inspection capacity	1	4.5	5	3	-	-
Improve construction practice	1	4.5	4	6.5	1	6
Improve construction material for buildings	1	4.5	2	9	4	1
Promote research and development of technology for retrofitting of residential buildings	1	4.5	5	3	2	3.5
Promote retrofitting of residential buildings	-	-	4	6.5	2	3.5
Promote construction of earthquake resistant residential buildings	-	-	4	6.5	2	3.5
Enhance basic inventory of buildings	3	1	4	6.5	-	-
<b>TOTAL</b>	<b>9</b>		<b>40</b>		<b>13</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

<b>CAPABILITY LEVEL – SELF HELP</b>	
1st Priority Rank 1	Enhance basic inventory of buildings
2nd Priority Rank 2	Improve construction permission process of buildings
3rd Priority Rank 4.5	Improve inspection capacity Improve construction practice Improve construction material for buildings Promote research and development of technology for retrofitting of residential buildings

<b>CAPABILITY LEVEL – mutual help</b>	
1st Priority Rank 1	Improve construction permission process of buildings
2nd Priority Rank 3	Develop and standardize seismic codes Improve inspection capacity Promote research and development of technology for retrofitting of residential buildings
3rd Priority Rank 6.5	Improve construction practice Promote retrofitting of residential buildings Promote construction of earthquake resistant residential buildings Enhance basic inventory of buildings

<b>CAPABILITY LEVEL – EXTERNAL HELP</b>	
1st Priority Rank 1	Improve construction material for buildings
2nd Priority Rank 3.5	Develop and standardize seismic codes Promote research and development of technology for retrofitting of residential buildings Promote retrofitting of residential buildings Promote construction of earthquake resistant residential buildings
3rd Priority Rank 6	Improve construction practice



### 3. Responses of Respondents by Category in the Improvement of Seismic Performance of Public Utilities and Infrastructures

Table 3.a. Responses of National Agencies on Improvement of seismic performance of public facilities and infrastructures

PROGRAMS (Improvement of seismic performance of public facilities and infrastructures)	Capability to Improve Seismic Performance of Public Facilities and Infrastructures					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Retrofit schools	-	-	2	5.5	5	2
Retrofit hospitals	-	-	3	3.5	2	6
Retrofit facilities of emergency services	2	3	6	1	5	2
Retrofit important government offices	1	4	5	2	3	4.5
Retrofit buildings	-	-	-	-	1	8
Retrofit airport facilities	-	-	-	-	1	8
Retrofit harbour facilities	-	-	-	-	1	8
Strengthen water supply system	3	2	2	5.5	5	2
Introduce disaster risk reduction concept into infrastructure development projects	4	1	3	3.5	3	4.5
<b>TOTAL</b>	<b>10</b>		<b>21</b>		<b>26</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1	Retrofit important government offices
2nd Priority Rank 2	Retrofit facilities of emergency services
3rd Priority Rank 3	Strengthen water supply system

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1	Retrofit facilities of emergency services
2nd Priority Rank 2	Retrofit important government offices
3rd Priority Rank 3.5	Retrofit hospitals Introduce disaster risk reduction concept into infrastructure development projects

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 2	Retrofit schools Retrofit facilities of emergency services Strengthen water supply system
2nd Priority Rank 4.5	Retrofit important government offices Introduce disaster risk reduction concept into infrastructure development projects
3rd Priority Rank 6	Retrofit hospitals

Table 3.b. Responses of LGUs on Improvement of seismic performance of public facilities and infrastructures

PROGRAMS (Improvement of seismic performance of public facilities and infrastructures)	Capability to Improve Seismic Performance of Public Facilities and Infrastructures					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Retrofit schools	9	3	12	3.5	7	3
Retrofit hospitals	8	4.5	14	1	6	5
Retrofit facilities of emergency services	11	2	12	3.5	6	5
Retrofit important government offices	8	4.5	10	5.5	3	9
Retrofit buildings	5	6	10	5.5	6	5
Retrofit airport facilities	1	8	3	8	4	7.5
Retrofit harbour facilities	-	-	2	9	4	7.5
Strengthen water supply system	4	7	8	7	8	2
Introduce disaster risk reduction concept into infrastructure development projects	12	1	13	2	12	1
<b>TOTAL</b>	<b>58</b>		<b>84</b>		<b>56</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1	Introduce disaster risk reduction concept into infrastructure development projects
2nd Priority Rank 2	Retrofit facilities of emergency services
3rd Priority Rank 3	Retrofit schools

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1	Retrofit hospitals
2nd Priority Rank 2	Introduce disaster risk reduction concept into infrastructure development projects
3rd Priority Rank 3.5	Retrofit schools Retrofit facilities of emergency services

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1	Introduce disaster risk reduction concept into infrastructure development projects
2nd Priority Rank 2	Strengthen water supply system
3rd Priority Rank 3	Retrofit schools

Table 3.c. Responses of the Academe on Improvement of seismic performance of public facilities and infrastructures

PROGRAMS (Improvement of seismic performance of public facilities and infrastructures)	Capability to Improve Seismic Performance of Public Facilities and Infrastructures					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Retrofit schools	-	-	-	-	-	-
Retrofit hospitals	-	-	-	-	-	-
Retrofit facilities of emergency services	-	-	-	-	-	-
Retrofit important government offices	-	-	-	-	-	-
Retrofit buildings	-	-	-	-	-	-
Retrofit airport facilities	-	-	-	-	-	-
Retrofit harbour facilities	-	-	-	-	-	-
Strengthen water supply system	-	-	-	-	-	-
Introduce disaster risk reduction concept into infrastructure development projects	-	-	-	-	-	-
<b>TOTAL</b>	-	-	-	-	-	-

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1	None
2nd Priority Rank 2	None
3rd Priority Rank 3	None

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1	None
2nd Priority Rank 2	None
3rd Priority Rank 3	None

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1	None
2nd Priority Rank 2	None
3rd Priority Rank 3	None

Table 3.d. Responses of NGOs on Improvement of seismic performance of public facilities and infrastructures

PROGRAMS (Improvement of seismic performance of public facilities and infrastructures)	Capability to Improve Seismic Performance of Public Facilities and Infrastructures					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Retrofit schools	-	-	-	-	-	-
Retrofit hospitals	-	-	-	-	1	3
Retrofit facilities of emergency services	-	-	1	1.5	1	3
Retrofit important government offices	-	-	-	-	-	-
Retrofit buildings	-	-	-	-	-	-
Retrofit airport facilities	-	-	-	-	-	-
Retrofit harbour facilities	-	-	-	-	-	-
Strengthen water supply system	-	-	-	-	2	1
Introduce disaster risk reduction concept into infrastructure development projects	1	1	1	1.5	1	3
<b>TOTAL</b>	<b>1</b>		<b>2</b>		<b>5</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1	Introduce disaster risk reduction concept into infrastructure development projects
CAPABILITY LEVEL – mutual help	
1st Priority Rank 1.5	Retrofit facilities of emergency services Introduce disaster risk reduction concept into infrastructure development projects
CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1	Strengthen water supply system
2nd Priority Rank 3	Retrofit hospitals Retrofit facilities of emergency services Introduce disaster risk reduction concept into infrastructure development projects

Table 3.e. Responses of Residents on Improvement of seismic performance of public facilities and infrastructures

PROGRAMS (Improvement of seismic performance of public facilities and infrastructures)	Capability to Improve Seismic Performance of Public Facilities and Infrastructures					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Retrofit schools	2	1.5	5	3	-	-
Retrofit hospitals	2	1.5	7	1	-	-
Retrofit facilities of emergency services	1	4.5	4	5	1	5.5
Retrofit important government offices	-	-	5	3	-	-
Retrofit buildings	1	4.5	3	6	5	2.5
Retrofit airport facilities	-	-	-	-	5	2.5
Retrofit harbour facilities	-	-	1	8	5	2.5
Strengthen water supply system	1	4.5	5	3	1	5.5
Introduce disaster risk reduction concept into infrastructure development projects	1	4.5	2	7	5	2.5
<b>TOTAL</b>	<b>8</b>		<b>32</b>		<b>21</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1.5	Retrofit schools Retrofit hospitals
2nd Priority Rank 4.5	Retrofit facilities of emergency services Introduce disaster risk reduction concept into infrastructure development projects Retrofit buildings Strengthen water supply system

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1	Retrofit hospitals
2nd Priority Rank 3	Retrofit schools Retrofit important government offices Strengthen water supply system
3rd Priority Rank 5	Retrofit facilities of emergency services

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 2.5	Retrofit buildings Retrofit airport facilities Retrofit harbour facilities Introduce disaster risk reduction concept into infrastructure development projects
2nd Priority Rank 5.5	Retrofit facilities of emergency services Strengthen water supply system

#### 4. Responses of Respondents by Category of Earthquake Resistant Urban Development

Table 4.a. Responses of National Agencies on Promotion of Earthquake Resistant Urban Development

PROGRAMS (Promotion of Earthquake Resistant Urban Development)	Capability to Promote Earthquake Resistant Urban Development					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Prepare urban planning incorporating disaster risk reduction concept	4	1	3	2.5	5	2.5
Promote disaster resistant urban development	2	4.5	2	6	5	2.5
Promote redevelopment of densely populated areas	1	7	3	2.5	6	1
Enhance social housing policy for illegal settlement and poverty area	-		2	6	2	5
Promote development of fire prevention zone	3	2.5	2	6	1	7
Promote establishment of emergency transportation system	2	4.5	2	6	2	5
Prepare evacuation plan	3	2.5	4	1	2	5
Develop open spaces and parks for evacuation	1	7	1	7.5	-	-
Identify evacuation route	1	7	2	6	-	-
<b>TOTAL</b>	<b>17</b>		<b>21</b>		<b>23</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1	Prepare urban planning incorporating disaster risk reduction concept
2nd Priority Rank 2.5	Promote development of fire prevention zone Prepare evacuation plan
3rd Priority Rank 4.5	Promote disaster resistant urban development Promote establishment of emergency transportation system

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1	Prepare evacuation plan
2nd Priority Rank 2.5	Promote redevelopment of densely populated areas Prepare urban planning incorporating disaster risk reduction concept
3rd Priority Rank 6	Enhance social housing policy for illegal settlement and poverty area Promote establishment of emergency transportation system Identify evacuation route Promote development of fire prevention zone

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1	Promote redevelopment of densely populated areas
2nd Priority Rank 2.5	Prepare urban planning incorporating disaster risk reduction concept Promote disaster resistant urban development
3rd Priority Rank 5	Enhance social housing policy for illegal settlement and poverty area Promote establishment of emergency transportation system Prepare evacuation plan

Table 4.b. Responses of LGUs on Promotion of Earthquake Resistant Urban Development

PROGRAMS (Promotion of Earthquake Resistant Urban Development)	Capability to Promote Earthquake Resistant Urban Development					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Prepare urban planning incorporating disaster risk reduction concept	16	1	10	3	13	1
Promote disaster resistant urban development	10	3	12	1.5	4	5
Promote redevelopment of densely populated areas	8	4	12	1.5	5	2.5
Enhance social housing policy for illegal settlement and poverty area	7	5.5	9	4.5	4	5
Promote development of fire prevention zone	5	8	5	9	2	9
Promote establishment of emergency transportation system	5	8	8	7	5	2.5
Prepare evacuation plan	12	2	8	7	3	7.5
Develop open spaces and parks for evacuation	7	5.5	8	7	4	5
Identify evacuation route	5	8	9	4.5	3	7.5
<b>TOTAL</b>	<b>75</b>		<b>81</b>		<b>43</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1	Prepare urban planning incorporating disaster risk reduction concept
2nd Priority Rank 2	Prepare evacuation plan
3rd Priority Rank 3	Promote disaster resistant urban development

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1.5	Promote disaster resistant urban development Promote redevelopment of densely populated areas
2nd Priority Rank 3	Prepare urban planning incorporating disaster risk reduction concept
3rd Priority Rank 4.5	Enhance social housing policy for illegal settlement and poverty area Identify evacuation route

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1	Prepare urban planning incorporating disaster risk reduction concept
2nd Priority Rank 2.5	Prepare urban planning incorporating disaster risk reduction concept Promote disaster resistant urban development
3rd Priority Rank 5	Promote disaster resistant urban development Enhance social housing policy for illegal settlement and poverty area Develop open spaces and parks for evacuation

Table 4.c. Responses of the Academe on Promotion of Earthquake Resistant Urban Development

PROGRAMS (Promotion of Earthquake Resistant Urban Development)	Capability to Promote Earthquake Resistant Urban Development					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Prepare urban planning incorporating disaster risk reduction concept	1	2	2	3	1	3
Promote disaster resistant urban development	1	2	3	1	2	1
Promote redevelopment of densely populated areas	-	-	1	7	-	-
Enhance social housing policy for illegal settlement and poverty area	-	-	1	7	-	-
Promote development of fire prevention zone	-	-	2	3	1	3
Promote establishment of emergency transportation system	1	2	2	3	1	3
Prepare evacuation plan	-	-	1	7	-	-
Develop open spaces and parks for evacuation	-	-	1	7	-	-
Identify evacuation route	-	-	1	7	-	-
<b>TOTAL</b>	<b>3</b>		<b>14</b>		<b>5</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 2	Prepare urban planning incorporating disaster risk reduction concept Promote disaster resistant urban development Promote establishment of emergency transportation system

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1	Promote disaster resistant urban development
2nd Priority Rank 3	Promote development of fire prevention zone Promote establishment of emergency transportation system Prepare urban planning incorporating disaster risk reduction concept
3rd Priority Rank 7	Enhance social housing policy for illegal settlement and poverty area Promote redevelopment of densely populated areas Prepare evacuation plan Develop open spaces and parks for evacuation Identify evacuation route

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1	Promote disaster resistant urban development
2nd Priority Rank 3	Prepare urban planning incorporating disaster risk reduction concept Promote disaster resistant urban development
3rd Priority Rank 5	Prepare urban planning incorporating disaster risk reduction concept Promote development of fire prevention zone Promote establishment of emergency transportation system



Table 4.d. Responses of NGOs on Promotion of Earthquake Resistant Urban Development

PROGRAMS (Promotion of Earthquake Resistant Urban Development)	Capability to Promote Earthquake Resistant Urban Development					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Prepare urban planning incorporating disaster risk reduction concept	2	3.5	1	3.5	-	-
Promote disaster resistant urban development	2	3.5	1	3.5	-	-
Promote redevelopment of densely populated areas	-	-	-	-	-	-
Enhance social housing policy for illegal settlement and poverty area	1	1.5	-	-	-	-
Promote development of fire prevention zone	-	-	-	-	-	-
Promote establishment of emergency transportation system	1	1.5	-	-	-	-
Prepare evacuation plan	-	-	2	1	1	2
Develop open spaces and parks for evacuation	-	-	1	3.5	1	2
Identify evacuation route	-	-	1	3.5	1	2
<b>TOTAL</b>	<b>6</b>		<b>6</b>		<b>3</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1.5	Enhance social housing policy for illegal settlement and poverty area Promote establishment of emergency transportation system
2nd Priority Rank 3.5	Prepare urban planning incorporating disaster risk reduction concept Promote disaster resistant urban development

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1	Prepare evacuation plan
2nd Priority Rank 3.5	Prepare urban planning incorporating disaster risk reduction concept Promote disaster resistant urban development Develop open spaces and parks for evacuation Identify evacuation route

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 2	Prepare evacuation plan Develop open spaces and parks for evacuation Identify evacuation route

Table 4.e. Responses of Residents on Promotion of Earthquake Resistant Urban Development

PROGRAMS (Promotion of Earthquake Resistant Urban Development)	Capability to Promote Earthquake Resistant Urban Development					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Prepare urban planning incorporating disaster risk reduction concept	1	6	6	1	-	-
Promote disaster resistant urban development	-	-	3	6	3	2
Promote redevelopment of densely populated areas	-	-	5	3	1	3.5
Enhance social housing policy for illegal settlement and poverty area	1	6	5	3	3	2
Promote development of fire prevention zone	2	4	5	3	1	3.5
Promote establishment of emergency transportation system	1	6	2	7.5	3	2
Prepare evacuation plan	5	2	4	5	-	-
Develop open spaces and parks for evacuation	3	3	2	7.5	-	-
Identify evacuation route	6	1	-	-	-	-
<b>TOTAL</b>	<b>19</b>		<b>32</b>		<b>11</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1	Identify evacuation route
2nd Priority Rank 2	Prepare evacuation plan
3rd Priority Rank 3	Develop open spaces and parks for evacuation

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1	<ul style="list-style-type: none"> <li>▪ Prepare urban planning incorporating disaster risk reduction concept</li> </ul>
2nd Priority Rank 3	<ul style="list-style-type: none"> <li>▪ Promote redevelopment of densely populated areas</li> <li>▪ Enhance social housing policy for illegal settlement and poverty area</li> <li>▪ Promote development of fire prevention zone</li> </ul>
3rd Priority Rank 5	<ul style="list-style-type: none"> <li>▪ Prepare evacuation plan</li> </ul>

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 2	Promote disaster resistant urban development Enhance social housing policy for illegal settlement and poverty area Promote establishment of emergency transportation system
2nd Priority Rank 3.5	Promote redevelopment of densely populated areas Promote development of fire prevention zone

## 5. Responses of Respondents by Category on Research on Earthquake Disaster

Table 5.a. Responses of National Agencies on Promotion of Earthquake Resistant Urban Development

PROGRAMS (Promotion of Research on Earthquake Disaster)	Capability to Promote Research on Earthquake Disaster					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Enhance earthquake monitoring system	3	1	3	3.5	6	1
Establish earthquake information dissemination system	2	2.5	4	2	4	3.5
Promote research on active faults	-	-	2	5	4	3.5
Conduct disaster risk reduction plan for tsunami	1	4	3	3.5	1	5
Promote preparation of hazard and risk mapping	2	2.5	8	1	5	2
<b>TOTAL</b>	<b>8</b>		<b>16</b>		<b>20</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1	Enhance earthquake monitoring system
2nd Priority Rank 2.5	Establish earthquake information dissemination system Promote preparation of hazard and risk mapping
3rd Priority Rank 4	Conduct disaster risk reduction plan for tsunami

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1	Promote preparation of hazard and risk mapping
2nd Priority Rank 2	Establish earthquake information dissemination system
3rd Priority Rank 3.5	Enhance earthquake monitoring system Conduct disaster risk reduction plan for tsunami

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1	Enhance earthquake monitoring system
2nd Priority Rank 2	Promote preparation of hazard and risk mapping
3rd Priority Rank 3.5	Establish earthquake information dissemination system Promote research on active faults

Table 5.b. Responses of LGUs on Promotion of Earthquake Resistant Urban Development

PROGRAMS (Promotion of Research on Earthquake Disaster)	Capability to Promote Research on Earthquake Disaster					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Enhance earthquake monitoring system	9	3	14	1.5	-	-
Establish earthquake information dissemination system	17	1	14	1.5	8	2
Promote research on active faults	4	4	7	4	6	3
Conduct disaster risk reduction plan for tsunami	2	5	5	5	4	4
Promote preparation of hazard and risk mapping	11	2	10	3	13	1
<b>TOTAL</b>	<b>43</b>		<b>50</b>		<b>31</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 1	Establish earthquake information dissemination system
2nd Priority Rank 2	Promote preparation of hazard and risk mapping
3rd Priority Rank 3	Enhance earthquake monitoring system

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1.5	Enhance earthquake monitoring system Establish earthquake information dissemination system
2nd Priority Rank 3	Promote preparation of hazard and risk mapping
3rd Priority Rank 4	Promote research on active faults

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1	Promote preparation of hazard and risk mapping
2nd Priority Rank 2	Establish earthquake information dissemination system
3rd Priority Rank 3	Promote research on active faults

Table 5.c. Responses of Academe on Promotion of Earthquake Resistant Urban Development

PROGRAMS (Promotion of Research on Earthquake Disaster)	Capability to Promote Research on Earthquake Disaster					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Enhance earthquake monitoring system	-	-	-	1	-	-
Establish earthquake information dissemination system	1	2	1	1.5	1	1.5
Promote research on active faults	-	-	-	-	-	-
Conduct disaster risk reduction plan for tsunami	1	2	1	1.5	-	-
Promote preparation of hazard and risk mapping	1	2	2	4	1	1.5
<b>TOTAL</b>	<b>3</b>		<b>4</b>		<b>2</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

CAPABILITY LEVEL – SELF HELP	
1st Priority Rank 2	Establish earthquake information dissemination system Conduct disaster risk reduction plan for tsunami Promote preparation of hazard and risk mapping

CAPABILITY LEVEL – mutual help	
1st Priority Rank 1	Enhance earthquake monitoring system
2nd Priority Rank 1.5	Establish earthquake information dissemination system Conduct disaster risk reduction plan for tsunami
3rd Priority Rank 3	Promote preparation of hazard and risk mapping

CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1.5	Establish earthquake information dissemination system Promote preparation of hazard and risk mapping

Table 5.d. Responses of NGOs on Promotion of Earthquake Resistant Urban Development

PROGRAMS (Promotion of Research on Earthquake Disaster)	Capability to Promote Research on Earthquake Disaster					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Enhance earthquake monitoring system	-	-	1	2.5	-	-
Establish earthquake information dissemination system	1	2.5	1	2.5	-	-
Promote research on active faults	1	2.5	2	1	-	-
Conduct disaster risk reduction plan for tsunami	-	-	-	-	1	1.5
Promote preparation of hazard and risk mapping	2	1	-	-	1	1.5
<b>TOTAL</b>	<b>4</b>		<b>4</b>		<b>1</b>	

Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

<b>CAPABILITY LEVEL – SELF HELP</b>	
1st Priority Rank 1	Promote preparation of hazard and risk mapping
2nd Priority Rank 2.5	Establish earthquake information dissemination system Promote research on active faults

<b>CAPABILITY LEVEL – mutual help</b>	
1st Priority Rank 1	Promote research on active faults
2nd Priority Rank 2.5	Enhance earthquake monitoring system Establish earthquake information dissemination system

<b>CAPABILITY LEVEL – EXTERNAL HELP</b>	
1st Priority Rank 1	Conduct disaster risk reduction plan for tsunami Promote preparation of hazard and risk mapping

Table 5.e. Responses of Residents on Promotion of Earthquake Resistant Urban Development

PROGRAMS (Promotion of Research on Earthquake Disaster)	Capability to Promote Research on Earthquake Disaster					
	Self-help		Mutual help		External help	
	No.	Rank	No.	Rank	No.	Rank
Enhance earthquake monitoring system	2	3	3	3	4	2
Establish earthquake information dissemination system	3	2	3	3	-	-
Promote research on active faults	-	-	5	1	1	4
Conduct disaster risk reduction plan for tsunami	-	-	-	-	5	1
Promote preparation of hazard and risk mapping	4	1	3	3	2	3
<b>TOTAL</b>	<b>9</b>		<b>14</b>		<b>12</b>	

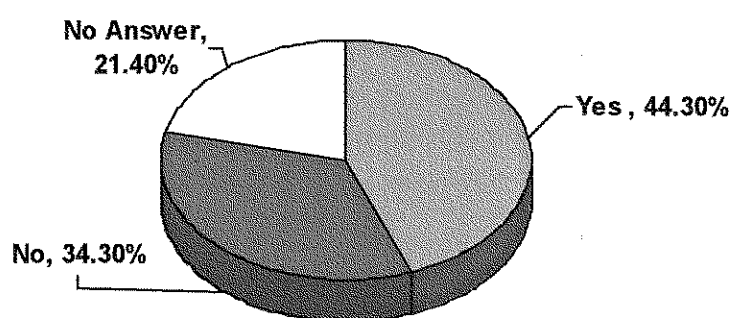
Based on the ranking of the responses, the following are the list of priority program areas according to Capability:

<b>CAPABILITY LEVEL – SELF HELP</b>	
1st Priority Rank 1	Promote preparation of hazard and risk mapping
2nd Priority Rank 2	Establish earthquake information dissemination system
3rd Priority Rank 3	Enhance earthquake monitoring system

<b>CAPABILITY LEVEL – mutual help</b>	
1st Priority Rank 1	Promote research on active faults
2nd Priority Rank 3	Enhance earthquake monitoring system Establish earthquake information dissemination system Promote preparation of hazard and risk mapping

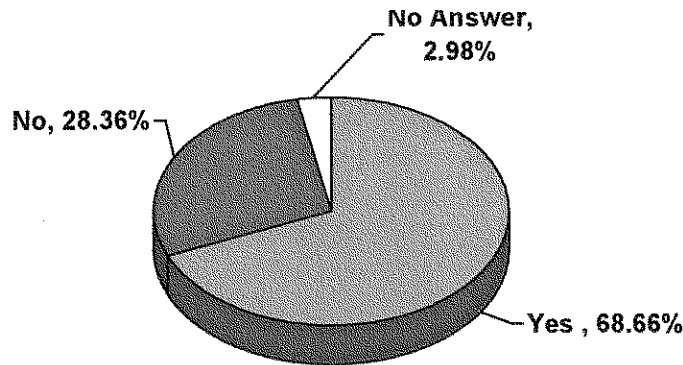
CAPABILITY LEVEL – EXTERNAL HELP	
1st Priority Rank 1	Conduct disaster risk reduction plan for tsunami
2nd Priority Rank 2	Enhance earthquake monitoring system
3rd Priority Rank 3	Promote preparation of hazard and risk mapping

**Responses by Category of Respondents on Calamity Fund**



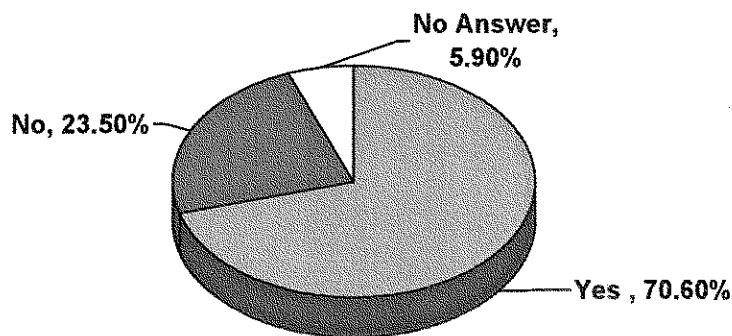
Spent calamity fund	Number			Percent		
	Yes	No	No Answer	Yes	No	No Answer
Residents	5	2	1	62.5	25.0	12.5
LGU	16	14	7	43.3	37.8	18.9
National Agencies	9	6	4	47.4	31.6	21.0
Academe	-	1	2	-	33.3	66.7
NGO	1	1	1	33.3	33.3	33.3
<b>TOTAL</b>	<b>31</b>	<b>24</b>	<b>15</b>	<b>44.3</b>	<b>34.3</b>	<b>21.4</b>

**Responses by Category of Respondents on Knowledge about MMEIRS**



Knew the results of MMEIRS Study	Number			Percent		
	Yes	No	No Answer	Yes	No	No Answer
Residents	8	-	-	100.0	-	-
LGU	24	12	1	64.9	32.4	2.7
National Agencies	13	5	1	68.4	26.3	5.3
Academe	1	2	-	33.3	66.7	-
NGO	2	1	-	66.7	33.3	-
<b>TOTAL</b>	<b>48</b>	<b>20</b>	<b>2</b>	<b>68.6</b>	<b>28.6</b>	<b>2.8</b>

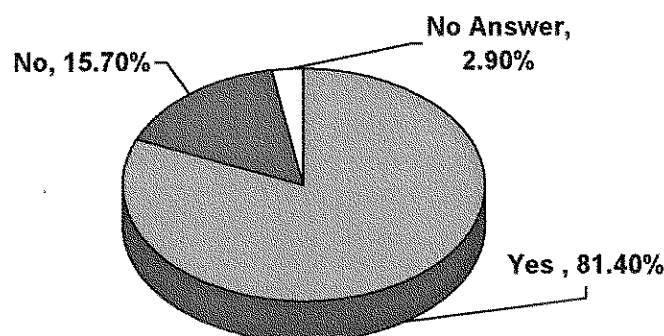
**Responses by Category of Respondents on Sharing MMEIRS Results**



Shared results with organization, division or neighbors among those who knew the results of MMEIRS	Number			Percent		
	Yes	No	No Answer	Yes	No	No Answer
Residents	6	1	1	75.0	12.5	12.5
LGU	17	7	2	65.4	26.9	7.7
National Agencies	10	3	-	76.9	23.1	-
Academe	1	-	-	100.0	-	-
NGO	2	1	-	66.7	33.3	-
<b>TOTAL</b>	<b>36</b>	<b>12</b>	<b>3</b>	<b>70.6</b>	<b>23.5</b>	<b>5.9</b>

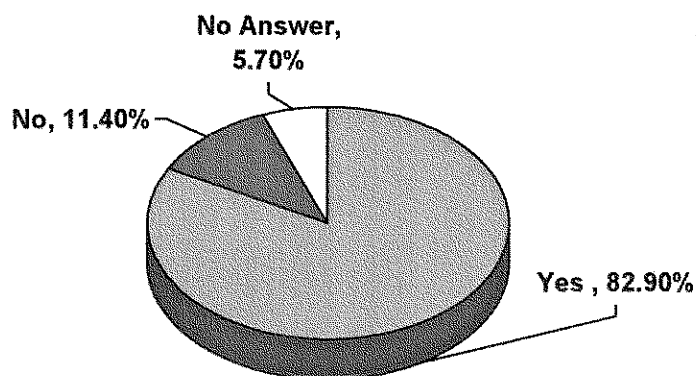


**Responses by Category of Respondents on Sharing of Ideas on Preparedness Measures**



Shared ideas of preparedness measures	Number			Percent		
	Yes	No	No Answer	Yes	No	No Answer
Residents	8	-	-	100.00	-	-
LGU	29	7	1	78.4	18.9	2.7
National Agencies	16	2	1	84.2	10.5	5.3
Academe	2	1	-	66.7	33.3	-
NGO	2	1	-	66.7	33.3	-
<b>TOTAL</b>	<b>57</b>	<b>11</b>	<b>2</b>	<b>81.4</b>	<b>15.7</b>	<b>2.9</b>

**Responses by Category of Respondents on Commencement of Action on Earthquake Disaster Management**



Commenced action on earthquake disaster management	Number			Percent		
	Yes	No	No Answer	Yes	No	No Answer
Residents	8	-	-	100.0	-	-
LGU	29	6	2	78.4	16.2	5.4
National Agencies	16	1	2	84.2	5.3	10.5
Academe	2	1	-	66.7	33.3	-
NGO	3	-	-	100.0	-	-
<b>TOTAL</b>	<b>58</b>	<b>8</b>	<b>4</b>	<b>82.9</b>	<b>11.4</b>	<b>5.7</b>

## **6. Risk Perception of Respondents**

In the introductory part of this Report, factors critical in understanding risks were discussed. These are:

- a. The academic discipline of the individual
- b. The professional experience of the individual
- c. Exposure to disaster
- d. Work environment
- e. Culture and belief

The results of the survey in so far as the various perceptions of risks of the respondents indicate that all these five crucial factors in understanding risks were articulated.

The same factors that influence understanding risks were also visible during the interviews conducted.

Some of the emotional, mental or sociocultural manifestations in understanding or perceiving risks were:

### **a. Fatalistic attitude of some respondents.**

This is when some individuals place their lives on fate. The respondents claimed after all people die so let it be. God will take care of us during disaster.

### **b. Lack of discernment of the implications of disaster and its concomitant hazards.**

Some respondents have no idea what will happen to them if an earthquake will occur. They have no clear understanding of the magnitude of destruction an earthquake will trigger.

### **c. Dichotomized perception of risk**

Some respondents expressed concern what disaster will bring to their lives. Other respondents do not perceive risks as a serious concern. Risk is not in their "world".

### **d. Government is responsible in providing protection to its citizenry**

Some respondents felt that government is primarily responsible for protecting the citizens from destructive effects of disasters. As a consequence, individual disaster awareness is secondary and pre-disaster preparedness is not a priority of

some respondents. They presume that the government will take care of them in their hour of need.

**e. Big earthquakes will not occur during their life time**

Some respondents are of the belief that big earthquakes will not occur in the immediate future. As a consequence this type of respondents maintain a fatalistic or free-wheeling attitude towards disaster preparedness or disaster mitigation. They claimed earthquakes and other similar disasters seldom occur.

**f. Risk as part of living**

This type of respondents perceived risk as part of their daily or day to day lives. No special attention is given on the importance of disaster preparedness.

**g. There is adequate security in their homes.**

Few of the respondents are confident that their geographic locations and their homes are strong enough to withstand earthquakes.

**h. Ignorance and poverty**

Respondents interviewed whose level of education and training are very low have no notion of risks. Among the very poor who are eking daily for a living, they have no perception of risk as normally understood in disaster mitigation.

**i. Resources as a limiting factor in risk perception**

Resources either in institutions or in individuals apparently influenced their perceptions of risk.

Some respondents who are in government stated that there are many programs designed to arrest major destructions caused by disaster. However, the lack of resources apparently limit their choice of alternative strategies to minimize the destruction caused by disasters. The same mindset was exhibited among respondents who were primarily categorized in the survey as "residents:"

**j. Culture and beliefs colour risk perception**

Few respondents also gave premium to the belief that cultural nuances and the sociological profiles of the individuals can colour their perceptions of risk. For example among the religious individuals, they more fear of disaster than those who in one way or another are atheist.