



**MICRODIS**



**Deliverable 3.2/1.3**  
**Preliminary data analysis summary report**  
**DRAFT**

Southern Leyte, Philippines

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# Chapter I

## Rationale

The past two decades witnessed marked increase in occurrence and severity of natural disasters. In 2008 alone, more than 235 thousand people were killed, 214 million affected and the economic damage was placed over 190 billion USD. <sup>1</sup> Closer scrutiny of these disaster events revealed Asia as the most affected continent with the Philippines ranking third in terms of occurrence.<sup>2</sup>

Disaster risks increases when natural hazards interact with the geographic, environmental, economic and social vulnerabilities of the community. This may be seen more concretely in the underdeveloped economies where the burden of these natural disasters places more people in the disadvantaged position viz-a-vis those in the developed countries.

The core objective of this study is to investigate the social impact of natural disaster which cut across aspect of people's lives. To delineate aims at different unit of analysis, and to highlight the social part from the economic and health consequences, enumeration of specific objectives are enunciated as follows:

- A. 1. To describe the characteristics of study population;
- B. On household level
  2. To determine socio-demographic condition and experiences of households during and after the occurrence of natural disaster;
  3. To describe the magnitude of economic and social losses and ill-effects to health;
  4. To uncover social gains that emerged out of the event in terms of social capital and protection support during and after a natural disaster.

<sup>1</sup> and <sup>2</sup> Annual Disaster Statistical Review 2008, CRED

### C. On individual level

5. To uncover experiences during disaster that impact on the individual daily activities and social relationship;
6. To look into the individual resiliency, coping behavior, recovery and social/emotional outlook; and
7. To probe into the intersection and interaction of natural disaster impact on economic, health and social aspects of people's lives.

## **The Methodology**

**The Design.** To gather information from a population or a subpart of the population in order to assess the relative incidence, distribution and interrelations of naturally-occurring phenomena, the survey research is considered an appropriate design (Kerlinger, 1964; Kidder, 1984). Moreover, this design is utilized when gathering large amount of data from separate respondents in a uniform, comparatively universal, systematic and in quantifiable form (Rubin, 1983; Jary and Jary, 1991).

Both quantitative and qualitative research modes were utilized; household interview for the former and Focus Group Discussion for the latter.

**The Sample Selection Procedure.** Two provinces, Albay and Southern Leyte, were purposively chosen on the basis of data obtained from the National Disaster Coordinating Council NDCC. Albay province has municipalities with a total of 655 barangays/communities. The data from NDCC indicated that all these municipalities were declared under state of calamity due to destructive typhoons in 2006 and 2007.

The province of Southern Leyte has municipalities with a total of 502 barangays. The whole province was declared under state of calamity with the occurrence of natural disasters in 2003 and 2006.

The selection procedure follows a multi-stage cluster design. The first stage is the selection of two municipalities/cities by probability proportional to size of barangays; Hinunangan and St. Bernard were selected for the province of Southern Leyte.

The second stage selection began with the construction of a frame for affected and least affected communities. The categorization on gravity of disaster’s effect was based on the assessment of the NDCC and the Mines and Geosciences Bureau MGB of the Department of Environment and Natural Resources Rapid Geo-hazard Assessment. Two frames were evolved; frames for affected and least affected communities. From each frame, two barangays were randomly selected (Table 1).

At the outset, the sample size was established to be 400 households for the province, a sample deemed to give five percent (5%) level of accuracy on estimates derived and a 95 percent confidence level. Fifty (50) households were selected by systematic sampling from each of the 8 sample communities.

**Table 1. Selected Sample Barangays, MICRODIS Project – Philippines**

<b>1. Southern Leyte</b>	
<b>A. St. Bernard</b>	
<b><i>Most Affected</i></b> 1. Nueva Esperanza 2. Sug-angon	<b><i>Least Affected</i></b> 1. Lipanto 2. Malinao
<b>B. Hinunangan</b>	
<b><i>Most Affected</i></b> 1. Lumbog 2. Palongpong	<b><i>Least Affected</i></b> 1. Patong 2. Sto. Niño

**The Study Sites.** As reflected in Table 1, two municipalities from the province of Southern Leyte were drawn: St. Bernard and Hinunangan. To provide a geographical context, a brief description of each site is in order.

***Southern Leyte.*** The municipality of St. Bernard is strategically situated in southern portion of the island with a total land area of 10,000 hectares. The topography is hilly and mountainous. St. Bernard is composed of 30 barangays/communities (barangay being the smallest administrative and political subdivision in the country). The municipality depends largely on agriculture; the major crops include rice and abaca. ([http://saintbernard\\_sleyte.gov.ph/index.php](http://saintbernard_sleyte.gov.ph/index.php)).

St. Bernard has a total population of 25,252 (National Census Office, 2007) with an annual growth rate of 2.5 percent. Currently, the town infrastructure includes 27 schools, a rural health unit (RHU) and eight barangay health stations. Source of water is a developed spring with reservoir/water tank and distributed through pipes. An electric service cooperative supplies the energy need of the population.

Hinunangan has a total population of 27,712 and a land area of 156 sq kilometers. Currently, considered as 5<sup>th</sup> class municipality, it covers 40 barangays.

The municipality is the rice granary of the province and producer of abaca, rattan and other forest products, and vegetables. Aside from 35 elementary schools, the town has tertiary education institutions, the Southern Leyte Institute of Agriculture and Technology and the Holy Rosary Academy.

***Linkages and Coordination.*** As initial step in any research undertaking, site visit and doing courtesy call to local government executives is a must. This is to facilitate smooth entry of researchers into the chosen areas in the conduct of actual data gathering. More importantly, preliminary data are usually gathered during the pre-survey site visit which includes demographic profiles, socio-economic characteristics, cultural and geographic features of the study sites.

The first pre-survey site visit was done by the survey team, XU and CDRC, in Southern Leyte. (See site map). A pre-arranged meeting with the Provincial Governor together with

the Provincial Disaster Coordinating Officer enabled the team to gather necessary data – site maps, disaster profile, etc.

The local government officials expressed their interest and requested the survey team to conduct study dissemination on the result of the study.

The team likewise visited and reconnoitered the selected municipalities; the local chief executives (Mayor) were also informed of the project and whose endorsement for the eventual entry into the selected communities was secured.

Aside from securing necessary endorsements from government executives, initial plans were made for the accommodation of the field enumerators when actual field work starts. Security and easy access to selected communities were given priority in choosing appropriate place to stay in the area.

***Training of Field Enumerators.*** Prior to the recruitment of enumerators, two manuals were developed: The Interviewers Manual and The Field Research Guide: Qualitative Component. While the former emphasizes instructions to interviewers on survey questionnaire, the latter focuses on the mechanics in the conduct of FGD and IDI and the guide questions.

A three-day enumerators training was conducted by Microdis team. A total of pre-selected participants attended. In a nutshell, the topics covered include: objective of the study, sampling selection, methods of data collection, the content of the instruments, areas of coverage and team composition, outputs and deliverables, and timeline.

A line by line discussion of the Integrated Survey questionnaire was done to facilitate clarity and uniform understanding among field enumerators of key concepts and variables used in the study.

Mock interview was done in nearby communities, to give field researchers better grasp of the survey questionnaire. At the end of the day, debriefing and detailed discussion were conducted; several issues concerning the specific blocks in the survey questionnaire were clarified and problems encountered in the mock interview were resolved.

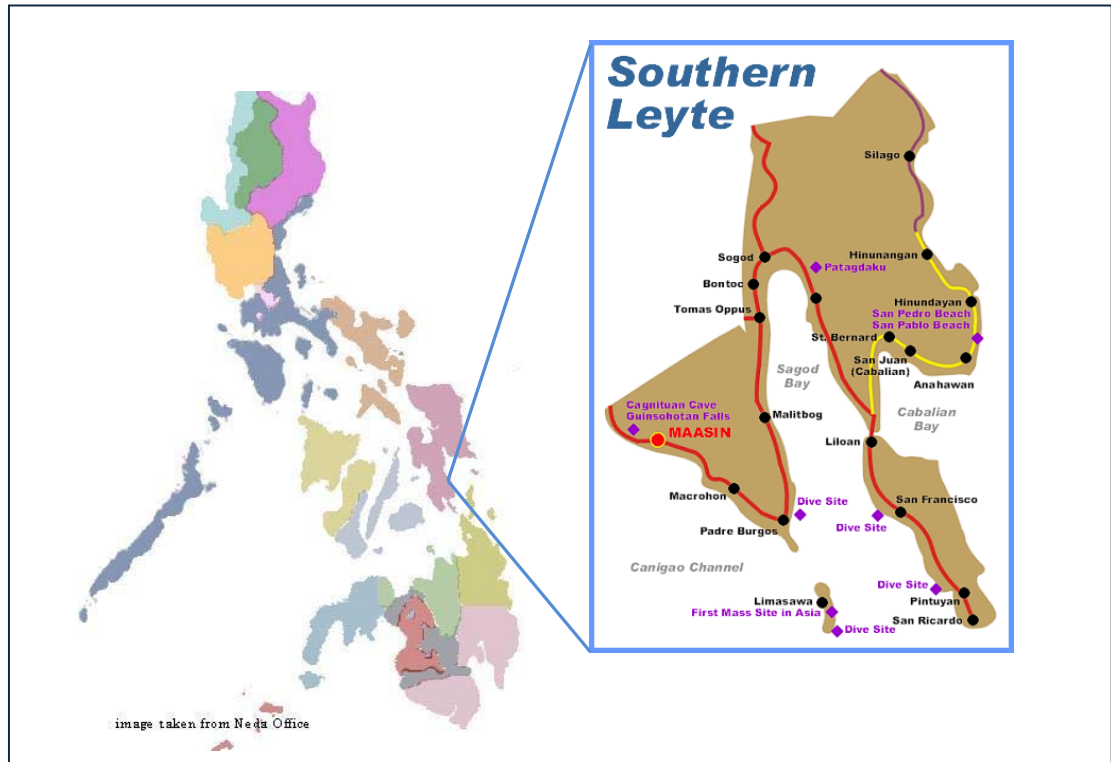
Furthermore, the practice interview provided useful insights for both the field enumerators and the trainers as to the length and duration of the interview. On the average, the interview lasted for two hours. Difficult questions and phrases were discussed, modified and replaced with more understandable terms. The questionnaire was fine tuned prior to reproduction.

A refresher session on Focus Group Discussion and in-depth interview mechanics was conducted. The teams were further provided with a manual Field Research Guide: Qualitative Component)

**Deployment.** A simultaneous deployment of field worker was done for the two provincial sites. The Southern Leyte survey team's entry into the area was facilitated by LGU officials. Their assistance include: finding a convenient place for the survey team to stay for the whole duration of the survey, coordinating with Barangay officials of selected communities, providing venues for the Focus Group Discussion sessions and giving the needed information (secondary data) concerning these communities.

Of the two municipalities chosen, the survey team first entered St. Bernard. One of its communities (barangay) - Guinsaunon, had been in disaster limelight last February 2006 when a massive landslide wiped out majority of its population except for the 19 residents pulled out of the debris and thick mud. Official report indicated more than 2,000 dead, leaving quite a number of children -- who at the time of the event were in school in the neighboring barangay-- orphans.





Aside from that earthquake-induced landslide (a fault line is found in the site), recent geographic studies revealed eight (8) other hydro-metrological risks present in the sample area. This includes floods, storms, storm surge, rain-induced landslide, tsunami, ground shaking, ground rupture and liquefaction.

The sample municipality of Hinunangan is another disaster-prone area. This is located just a few kilometers from St. Bernard (see site map) whose recent experience (last July 2007) of an earthquake measuring 6 on Richter scale resulted to 1.6M pesos damaged to properties.

**The Field Work.** Field enumerators were divided into two sub-teams; each consisting of 5 enumerators for the household interview of the two municipalities (each municipality have 2 affected areas; 2 least affected areas –

During the first few days of field work, enumerators were struggling with their interviewing pace; the need to familiarize with the survey questionnaire and the area accounted for the

slow pace. On the first day of fieldwork, enumerators were only able to finish two (2) household interviews.

Most interviewers really had to grapple with the length of the survey questionnaire. There were instances where respondents showed dismay when the interviewer take out the questionnaire. “Famous reactions like *“that’s too thick!”*, *“do you think we can finish that today?”*, or *“I still have to cook and prepare our food”* have figured into the field journal of enumerators.

The interviewers responded with patience, understanding, and diplomacy. Hence after thorough and gentle manner of explanation, respondents gave their consent for the interview with some even extending warmer hospitality by inviting our enumerators for dinner.

In the subsequent weeks, most of them were already quite familiar with the instruments and the relative ease in doing the interview was manifested by a much desirable output of three to four interviews per day. Notwithstanding the fact that in some communities, the travel time for enumerator to reach respondent’s house took longer time.



*XU-Microdis field personnel in Guinsaugon, St. Bernard, Southern Leyte*

The total duration for the conduct of the household interview was 23 days. This may had been cut shorter if not for the slight delay due to bad weather and slight flooding in the selected communities.

***The Conduct of Focus Group Discussion and In-depth Interview.*** Qualitative data were collected for the affected communities of the two sites only. It was deemed less fruitful to include the areas least affected.

Two (2) FGDs were conducted in each municipality of Southern Leyte giving a total of four community discussions. Participants invited were composed of community leaders, active members of religious groups, officials of local government units, officials of women's organizations and representative from youth groups. A hitch in the conduct of FGD was the availability of some local executives prompting several changes in the schedule.



*XU-Microdis Project Director conducting focused-group discussion in a study site in Southern Leyte.*

A total of 12 IDIs were conducted for the whole province. Just like the FGDs, the IDIs were done among affected communities.

Criteria for selection of participants and key informant includes: individuals greatly affected by the natural disaster; residents before and after disaster; and person willing to participate. The IDI respondents were purposively chosen and identified from household survey.

To get the impact and variety of experiences, 3 subgroups of people were interviewed, namely, mothers (2), heads of households (2), and adolescents (2) from each sample of affected community.

# **Chapter II**

## **The Coverage Population and Experience of Natural Disaster**

This chapter delved on the characteristics of the coverage population and its experience on natural disaster.

The study design calls for comparison between most affected (MA) and least affected (LA) areas of natural disasters. Hence, the presentation of result is confined on highlighting similarities and differences of current condition, patterns of experiences, and behavior/reactions during the occurrence of disastrous events between affected and least affected areas in each of the two provinces.

### **The Characteristic of the Study Population**

A total of 1,944 individuals constitute the study coverage from province of Southern Leyte. A near equal distribution between affected areas (49.3%) and least affected (51.7%) is observed for this selected province.

An advantage of males is seen in sex distribution in both affected and least affected area (Table 2). Moreover, the sex ratios evince excess of males for every 100 females.

Table 2.1. Socio-Demographic Characteristics of Sample Population, Province of Southern Leyte, Philippines, 2009.

Socio-Demographic Variables	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	959	985	1944
Sex of sample population percent male	53.0	53.5	53.25
Sex Ratio	112	115.1	113.5
Age distribution			
0 – 14	39.7	35.8	37.75
15 – 34	31.4	32.2	31.8
35 – 64	23.9	27.5	25.7
65 and over	5.0	4.5	4.75
Average age	24.9	26.5	25.7
Average household size	4.8	4.9	4.85
Ethnicity			
• Cebuano	28.7	16.8	22.75
• Leyteño	61.9	79.1	70.5
• Bicolano	0.1	0.1	0.1
• other ethnic groups	9.3	4.0	6.65
Primary dialect spoken at home			
• Bicolano	0.0	0.0	0.0
• Cebuano	96.8	99.8	98.3
• other	3.2	1.2	2.2
Religion			
• Roman Catholic	81.9	93.6	87.75
• Protestant	13.7	6.0	9.85
• other	4.4	0.4	2.4

The average age for the sample population is 25 years with those in the least affected area registering a slight maturity of almost 2 years.

The age pattern shows concentration of population on labor force age group (15 to 64 years old) with the magnitude belonging to this age group ranging from 55 to 60 percent. Slightly over one-third (38%) are younger dependents while a smaller percentage (4%) are the elderly.

In terms of ethnicity, Southern Leyte population is majority Leyteño with substantial percentage (23%) indicating being Cebuanos; presumably migrants from nearby province of Cebu. A substantial percentage (29%) of these Cebuanos is in the most affected area.

Data for primary dialect spoken at home are predictably related to the place of residence. Such is reflected in Southern Leyte where Cebuano dialect as their primary medium of communication at home.

Majority of the population covered belong to the Roman Catholic with approximately 14 percent in the most affected area professed to be Protestant.

Most affected communities in Southern Leyte have slightly more married individuals (50 percent) than the least affected areas.

Table 2.2. Distribution of Sample Population 10 Years and Older by Marital Status and Occupation, Province of Southern Leyte, Philippines, 2009.

Marital Status	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	700	742	1442
Percent single	44.6	45.0	44.8
Married	50.0	48.2	49.1
separated/widowed	5.4	6.7	6.05

Table 2.3. Distribution of Sample Population 10 Years and Older by Educational Attainment, Province of Southern Leyte, Philippines, 2009.

Education Variables	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>698</b>	<b>740</b>	<b>1438</b>
Percent of those who know how to read	96.1	96.2	96.15
Percent of those who know how to write	96.7	95.9	96.3
Highest educational attainment			
no education	1.9	2.2	2.05
Elementary	71.3	49.8	60.55
secondary (high school)	20.9	32.8	26.85
College	5.9	15.1	10.5

An overwhelming majority (ninety-six percent) of sample population is able to read and write. No difference is seen comparing affected and least affected areas.

Data in Table 2.3 shows affected communities more individuals finished elementary level education as compared to their least affected counterparts. In general, advantage in educational attainment is reflected for those in the least affected communities.

Table 2.4. Distribution of Sample Population 10 Years and Older by Main Occupation Before and After Disaster, Province of Southern Leyte, Philippines, 2009.

Occupational Categories	Southern Leyte	
	1,442	
n =	Before	After
no occupation (include housewife/retirees)	29.3	29.9
Students	23.1	20.7
unskilled laborer	2.6	2.8
skilled laborer	3.4	3.5
agricultural worker (fishermen/farmers)	27.7	28.3
Sales	8.1	8.0
Others	5.8	6.8

Primary Occupation	Most Affected	Least Affected
<b><u>Before Disaster</u></b>		
no occupation (include housewife/retirees)	24.9	33.6
Students	25.1	21.2
unskilled laborer	2.6	2.6
skilled laborer	3.3	3.5
agricultural worker (fishermen/farmers)	26.9	28.4
sales	12.1	4.3
others	5.0	6.5
<b><u>Primary Occupation After Disaster</u></b>		
occupation (include housewife/retirees)	27.1	32.5
students	23.7	17.8
unskilled laborer	3.1	2.4
skilled laborer	3.1	3.9
agricultural worker (fishermen/farmers)	25.7	30.7
sales	11.4	4.8
others	5.8	7.8



To determine shift in occupational structure, a question was asked on primary occupation before and after the disaster occurrence.

Majority of the sample population in both affected and least affected areas were not gainfully employed. These comprised of housewives, students, retirees or individuals with no income. A slight reduction of two percent for these non-gainfully employed individuals was noted in the “after” disaster period.

Among the gainfully employed, majority were engaged in agricultural sector where 28 percent of the working sample population of the province belongs.

Comparing the “before” and “after” disaster period between affected and least affected areas, a slight increase of those engaged in the agricultural work from the least affected area was noted.

***The Perceived Effect of Natural Disaster on the Population.*** As mentioned earlier, a total of 1,944 people were covered in the household survey. Data in Table 2.5 suggest nine out of every ten were present at the time of the disaster.

To give a much clearer picture as to how natural disaster activities daily routine activities, three categories were delineated: the young, the employed and the unemployed. These target population were deemed to be affected differently albeit a comparison between affected and least affected population was made.

A quarter of the sample population for both affected and least affected areas was 10 years or less in age, a little over one-third was employed and a slightly higher figure of 39 percent was unemployed at the time of the natural disaster.

School-aged population experienced being at school at the time of the natural disaster was slightly higher for the affected area (33 percent) as compared to the least affected communities.

Understandably, majority of those in the affected areas (86 percent) expressed school activities were affected when natural disaster occurred.

Table 2.5. Distribution of Population by Disaster Experiences and Extent of Effect  
Province of Southern Leyte, Philippines, 2009.

Experiences and Disaster Effects	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>959</b>	<b>985</b>	<b>1944</b>
Percent who are present at the time of disaster	91.8	91.2	91.5
Employment Status Before Disaster			
• 10 years old or less	27.0	24.7	25.85
• not employed	36.5	41.1	38.8
• employed	36.5	34.2	35.35
Percent going to school at the time of disaster	33.7	29.7	31.7
<b>n =</b>	<b>262</b>	<b>246</b>	<b>508</b>
Percent affected in their school activities	85.9	45.1	65.5
<b>Specific Experiences During Disaster</b>			
Household members 10 years and older	700	742	1442
Percent claiming daily routine is affected by disaster	78.4	56.7	67.55
Household members who are employed	350	337	687
Extent of disaster effect on main occupation			
• never	32.0	54.6	43.3
• low extent	31.1	23.4	27.25
• some extent	16.9	13.1	15
• high extent	10.0	7.7	8.85
• very high extent	10.0	1.2	5.6
<b>Extent of recovery</b>			
• never	8.4	3.9	6.15
• low extent	56.3	47.1	51.7
• some extent	18.1	40.5	29.3
• high extent	7.6	6.5	7.05
• very high extent	9.7	2.0	5.85

Over all, large majority of household members 10 years and older for both affected and least affected areas asserted that their daily routine was affected by natural disaster; with the later having more than 50 percent of the population being affected.

As to effect on employment, two-thirds of the sample population in affected areas professed to have been affected by the natural disaster while 45 percent from the least affected areas claimed to have been affected.

With regard to the extent of recovery in their occupation, more than three-fourths across the affected/least affected areas claimed to have somehow recovered albeit to a lesser extent.

# Chapter 3

## The Economic and Health Effects of Natural Disaster: The Household Experiences

This analysis covers 400 households from the province of Southern Leyte; coverage of topics include: a) experiences of natural disaster of households; b) responses to disaster; c) coping behavior; and d) losses during disaster episode; and e) comparison of before – after condition to reflect the effect of natural disaster.

### A. The Natural Disaster: Frequency and Severity

**Frequency and Severity.** All households in the sample areas of the province experienced more than one occurrence of natural disaster. Southern Leyte had an average of two disaster episodes in 2007.

The top three disaster events experienced by households in the province for both types of communities were: windstorm, earthquake, and flood. A little over fifty percent of households in affected communities affirmed having gone through the horror of landslide – one which buried a considerable number of the residents in a neighboring community. On the other hand, over one-third of those in least affected areas suffered the same experience of such disastrous event.

To better assess severity of experienced natural disasters, respondents were asked to categorize events as to whether very severe, somewhat severe or not severe at all. Rationally, affected areas overwhelmingly affirmed multiple disaster occurrences as somewhat severe to very severe as compared to their counterparts in the least affected communities.

Table 3.1. Distribution of Households by Experiences During Disaster, Province of Southern Leyte, Philippines, 2009.

Specific Experiences During Disaster	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	200	200	400
Percent affirming			
• to experience natural disaster more than once	100.0	100.0	100.0
Average number of occurrence experienced			
• last year	1.8	1.6	1.7
• last five years	1.6	1.8	1.7
Type of natural disaster (Multiple response)			
• flood	57.0	56.5	56.75
• earthquake	99.0	102.5	100.75
• windstorm	126.5	122.0	124.25
• landslide	53.0	38.5	45.75
• volcanic eruption	0.0	3.0	1.5
• mix (flood, earthquake, windstorm)	0.0	3.0	1.5

Specific Experiences During Disaster	Most Affected	Least Affected	Total
<b>n =</b>	200	200	400
Severity of the disaster event (Multiple response)			
• very severe	106.5	98.0	102.25
• somewhat severe	198.0	161.5	179.75
• not severe at all	32.0	66.0	49
Year of occurrence:(Multiple response)			
• Before 2005	1.5	3.0	2.25
• 2005	12.5	7.0	9.75
• 2006	64.5	54.0	59.25
• 2007	84.5	112.5	98.5
• 2008	173.5	149.5	161.5

Household respondents who claimed that the disaster events is not severe, notably from the least affected place in Southern Leyte, can be people whose community were in the periphery of disaster location.

The last three years from 2006 to 2008 follows an increasing pattern in occurrence of natural disasters for the province of Southern Leyte with the most recent year of 2008 registering the highest number of household affected.

At this point, in order to give a much more distinct and clearer picture on respondents' recall of events and experiences, a distinction must be made to two types of natural disaster referred to in this study which occurred in the last five years. The first is referred to as reference disaster; one that the respondent considers to be the most severe and had caused grave damages to the people and the community. The other is the disaster that had occurred most recent and is the reference point in the detailed discussion of economic impact.

**The Reference Disaster Episode.** The following description refers to the reference disaster. When asked whether people in their community received warning information of the forthcoming danger, sample communities in the province were to a large extent caught ill-prepared. Only about 11 percent affirmed to have been informed (Table 3.2).

Table 3.2. Distribution of Household Respondents by Disaster Warning and Household Reaction, Province of Southern Leyte, Philippines, 2009.

Disaster Warning Variables	Southern Leyte		Total
	Most Affected	Least Affected	
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Percent affirming			
• received warning	13.0	9.5	11.2
<b>n =</b>	<b>26</b>	<b>19</b>	<b>45</b>
Source of warning information			
• media	0.0	5.3	2.6
• local government unit	34.6	36.8	35.7
• relatives/friends	34.6	21.1	27.9
• government organization and NGO	30.7	36.8	33.8
Acted upon the warning	57.7	68.4	63.1
Percent affirming that			

the message was clear	88.5	94.7	91.6
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Where were you at the first moment of disaster			
• at home	83.0	92.0	87.5
• at work	14.5	6.5	10.5
• elsewhere	2.5	1.5	2.0
Percent affirming			
• to have moved when disaster strike	56.0	13.5	34.75
<b>n =</b>	<b>112</b>	<b>27</b>	<b>139</b>
Percent seeking shelter from:			
• government building designated as temporary shelter	86.6	3.7	45.2
• relatives/friends	8.9	88.9	48.9
• owned shelter (temporary)	4.5	7.4	6.0
Length of stay in the shelter (in days)	408.1	5.7	206.9
Percent of households with family members who opted to stay at house during disaster	3.6	33.3	18.4

Among those who received disaster warning, local government unit as well as their relatives and friends were identified as sources of information. Majority (69 percent and 58 percent from affected and least affected areas respectively) of Southern Leyte household respondents were informed either by local government units or by relatives and friends. Non-governmental organizations and government line agencies had done their share of disseminating the information; thirty-one to thirty-seven percent of households in both types of communities in Southern Leyte attributed their knowledge to them.

It may be worth the while to note that among the handful (45 out of 400) of households who were informed in Southern Leyte, and though the message was clear; a little over one-half of them acted upon the warning of the approaching natural disaster.

A large majority (87 percent) of household respondents affirmed that family members were generally at home at the first moment of disaster. A few however were either at work, doing errands, or were out when disaster strike.

A little over one-third of the households in Southern Leyte moved out of their homes and seeks shelter when disaster hit their areas.

Moreover, a peculiar pattern emerged for the sample households in the province: those from the affected communities opted to seek shelter in government designated evacuation center while those from the least affected areas preferred the homes of relatives and friends staying for an average of about 6 days. The former reportedly stayed in government shelter for 408 days. It must be recalled that study sites in Southern Leyte were affected by landslide which caused severe damages including loss of lives, property and infrastructures.

## **B. Responses to Disaster**

**Support/Assistance Received Immediately After Disaster.** Did households seek assistance after the natural disaster? An overwhelming majority (96 percent for both affected and least affected areas) declared they did not seek help. Forty-eight percent (48%) of households in affected areas received help while twenty-four percent (24%) in the least affected got some form of assistance (Table 3.3).

The predominant assistance items were foodstuff and clothing. As expected, majority of recipients were those in affected areas. Household items like mats, blankets, and cooking utensils were received by one-third of those in affected areas.

To delve into specific support received, a detailed set of questions were asked regarding the type of assistance, whether financial or material goods,

A total of 37 out of 400 households affirmed to have received financial support. Understandably, households from affected areas predominate among the recipients. It is further noted that a smaller number of households in the least affected areas received a disproportionately larger amount – ten times more than households in affected areas.

This may not be surprising if we consider that the allotted amount of money had to be thinly distributed to more number of households in affected areas. On the other hand, this may point to a much larger issue on disaster budget appropriation by concerned agencies.



Table 3.3. Distribution of Respondents by Support Received After Disaster, Province of Southern Leyte, Philippines, 2009.

Support Received After Disaster	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Percent who <u>did not</u> seek help after disaster	96.5 <sup>1</sup>	95.0*	95.8
Percent who received help after disaster	48.0	24.0	36.0
<b>Multiple response</b> <b>n =</b>	<b>96</b>	<b>48</b>	<b>144</b>
• Items received			
- foodstuff	96.8	79.2	88.0
- clothing	46.3	58.3	52.3
- housing/housing materials	4.2	2.1	3.2
- household items	71.6	31.3	51.4
- others	1.0	0.0	0.5
- financial support	1.1	6.3	3.7
Percent who received financial support	17.0	1.5	9.2
<b>n =</b>	<b>34</b>	<b>3</b>	<b>37</b>
Average amount of financial support received	697.10	7000.00	3848.55
Who provided the financial support			
• NGO	32.4	33.3	32.8
• government	17.6	33.3	25.4
• religious groups/church	35.3	38.3	36.8
• others (employer, insurance, etc.)	14.7	0.1	7.4
Extent of satisfaction with financial support received			
• satisfied (rating of 4 – 5)	55.8	66.7	61.2
• somewhat satisfied (rating of 3)	17.6	0.0	8.8
• not satisfied (rating of 1 and 2)	26.5	33.3	29.9
Satisfaction Rating	3.4	3.7	3.6
Reasons why satisfied with financial support			
• greatly help household needs	26.5	33.3	29.9
• able to rebuild	44.1	33.3	38.7
• did not expect assistance	2.9	0.0	1.4
Reasons why not satisfied			
• not enough	26.5	33.3	29.9
Received any material assistance?	47.5	8.0	27.8
<b>n =</b>	<b>95</b>	<b>16</b>	<b>111</b>
Multiple Response			
• Kind of material assistance received			
- foodstuff	60.6	81.3	71.0
- clothing	22.3	50.0	36.2
- household items	26.6	31.3	29.0
- construction/housing materials	57.5	6.3	31.9

<sup>1</sup> Those who seek help requested foodstuff, housing materials and financial assistance

When asked as to who provided the financial support after the natural disaster, recipients in affected areas identified non-government organizations and the religious/church groups as main donors while those in the least affected communities pointed out government, non-government organizations as well as the religious sector.

To determine the extent of satisfaction on assistance received, a scale of 1–5 was developed, where 1–2 denotes “not satisfied at all”; 3 “somewhat satisfied”; and 4–5 “satisfied.”

More than half of recipient households (56 and 67 percent respectively for affected and least affected areas) in Southern Leyte were “satisfied” with the financial assistance received. However, many also expressed dissatisfaction; these are households who considered the financial support to be limited and inadequate.

The overall satisfaction rating (somewhat satisfied) triggered a question on why or why not satisfied. The popular response was that the financial assistance enables them to rebuild their dwelling unit as well as a great help to household in times of need.

Recipients of material assistance accounted for twenty-eight percent (28%) of total households (111 out of 400). More households (48 percent) in affected communities of Southern Leyte received material assistance vis-à-vis eight percent from the least affected areas.

A large majority from both places declared to receive foodstuff. Construction materials also predominate among the affected communities while clothing was given to one-half of the households in least affected areas.

### **C. Coping Behavior During Reference Disaster**

The previous sections established that the predominant assistance especially to Southern Leyte is foodstuff. Financial support was afforded to 37 out of the 400 respondents while

material assistance specifically construction materials and household items were distributed to 111 respondents.

Assistance given was basically a response to an emergency situation. Limited in nature and in coverage, the household had to resort to other ways.

How did they cope, what were the options they considered? In a condition which demands immediate need for money, where and in what manner do households obtain the cash? Several ways were enumerated: obtaining loans, seeking financial assistance or borrowing money from friends and relatives, and sale of assets.

***Loans Incurred.*** A total of 36 households reported to have incurred loans (Table 3.4). Slightly more than half of these loans were obtained immediately after the earthquake in Southern Leyte. Flooding particularly in the most affected areas of the province was also the cause by which a little over one-third of respective households applied for loan.

The amount of loan was expectedly much higher for affected areas which ranged from twenty-five thousand to thirty thousand pesos as compared to the amount of loan incurred by households in least affected areas.

How was the loan spent? Table 3.4 indicates that majority of households for both affected and least affected communities spent the amount on consumable goods (53 percent and 66 percent for affected and least affected areas respectively). A considerable portion of households particularly from affected areas use the loan amount for repair or reconstruction of houses.

As regards to the source of loan, relatives and friends are common source for both affected and least affected areas. Utilization of this informal mechanism is understandable as there is no demand for collateral. Cooperatives and micro-finance institutions are also tap as loan source. Banks and moneylenders are not popular with the former necessitating the need to

submit loan collateral and other stringent requirements while the latter is shunned because of its exorbitant interest rates.

Table 3.4. Distribution of Respondents Who Incurred Loan By Application and Source of Loan, Province of Southern Leyte, Philippines, 2009.

	<b>Southern Leyte</b>		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Percent who incurred loan	8.5	9.5	9.0
<b>n =</b>	<b>17</b>	<b>19</b>	<b>36</b>
Disaster for which the loan was incurred*			
• flood	35.3	10.5	22.9
• cyclone	17.6	10.5	14.1
• earthquake	47.1	68.4	57.8
• landslide	5.9	15.8	10.8
Average amount of loan	28344.70	7775.00	18059.85
Use of loan			
• consumption	52.9	66.4	59.6
• medical treatment	5.9	15.8	10.8
• repair/reconstruction/ replacement of house	29.4	15.8	22.6
• capital for business and others	17.9	5.3	11.6
Sources of loan			
• cooperatives/micro-finance	41.2	36.8	39.0
• banks (public/private)	11.8	0.0	5.9
• relatives and friends	47.1	42.1	44.6
• money lenders	5.9	21.1	13.5
• others	0.0	5.3	2.6

**Sale of Assets.** Aside from borrowing, other options were resorted to include selling of assets, finding extra work, and soliciting help from family members and relatives. A little over one-fourth (118 households from 400) admitted to received financial assistance from family members and relatives. Parents, children working abroad, and sibling provide the much needed monetary help.

Only a handful (16 out of the 400) affirmed to selling an average of one asset, predominantly livestock. Data of Table 3.4 suggest that disposing of livestock such as carabao, cow and pigs, were done to cope with difficult cash-strapped situations.

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\* Multiple loans, total exceeds 100

Table 3.5. Distribution of Sample Households By Coping Behavior Variables Province of Southern Leyte, Philippines, 2009.

Household Coping Behavior Variables	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Manner of Household Coping (Multiple Response)*			
Percent who			
- did not do anything	50.0	48.5	49.2
- sold assets	6.0	2.0	4.0
- borrow money	18.0	14.0	16.0
- work extra	6.0	3.0	4.5
- others	26.5	32.5	29.5
Number who borrowed money	<b>36</b>	<b>28</b>	<b>64</b>
- average number of times borrowed	1.1	1.1	1.1
Sale of assets <b>n =</b>	<b>12</b>	<b>4</b>	<b>16</b>
- average number of assets sold	1.1	1.0	1.0
Type of Assets sold (Multiple Response)*			
<b>n =</b>	<b>12</b>	<b>4</b>	<b>16</b>
- land	8.3	0.0	4.2
- livestock	91.7	100.0	95.8
- jewelry	8.3	0.0	4.2
- other belongings ( )	0.0	0.0	0
Who owns asset sold (Multiple Response) <b>n =</b>	<b>12</b>	<b>4</b>	<b>16</b>
- household head	83.3	75.0	79.2
- spouse	25.0	25.0	25.0
- son/daughter	0.0	0.0	0
- parents	0.0	0.0	0
Percent affirming recovery Of assets sold	0.0	0.0	0.0

Ownership of sold assets was predominantly that of the household head followed by those owned by the spouse. An egalitarian pattern of gender relation is suggested by the data in Table 3.5. The predominant decision-maker in terms of how resources or financial assistance are spent is either the respondent or jointly with the spouse.

**Reduction in Food Consumption.** Moreover, the egalitarian pattern observed in previous variable was also observed on how household cope with changes in food consumption, how

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\* Totals do not equal to 100

they make adjustment with food shortage due to disaster. Although large majority (82% in affected and 78% in least affected areas) affirmed there was no adjustment needed, the common coping practice was “to eat less” observed by substantial number of households in both affected and least affected areas.

Table 3.6. Distribution of Sample Households By Coping Behavior Variables, Province of Southern Leyte, Philippines, 2009.

Household Coping Behavior Variables	Southern Leyte		Total
	Most Affected	Least Affected	
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Who decides how to spend financial resources (raised personally or received as assistance) to cope with disaster			
- spouse/others fully	0.0	2.0	1.0
- spouse/others to a large extent	5.0	7.0	6.0
- myself and spouse/others	54.5	44.5	49.5
- self to a large extent	14.0	11.5	12.8
- fully self	26.5	35.0	30.8
Extent of changes in household food consumption to cope with lack of resources due to disaster			
- everyone ate less	15.5	20.5	18.0
- women ate less	0.0	0.0	0
- older people ate less	2.0	1.5	1.8
- children ate less	0.5	0.5	0.5
- no adjustment at all	82.0	77.5	79.8
Description of household food situation <b>before</b> the disaster			
- always did not have enough to eat	2.0	2.0	2.0
- had some days when there was not enough to eat	19.5	29.5	24.5
- had several months when did not have enough to eat	1.5	1.5	1.5
- always had enough food to eat	77.0	67.0	72.0
Description of household food situation <b>after</b> the disaster			
- always did not have enough to eat	6.5	5.0	5.8
- had some days when there was not enough to eat	25.5	34.0	29.8
- had several months when did not have enough to eat	2.5	2.0	2.2
- always had enough food to eat	65.5	59.0	62.2

Given that a large majority did not make adjustment on their food consumption, a closer look at the situation of households’ “before” and ‘after” disaster is warranted. Before the

disaster, majority of households (82 percent and 78 percent for affected and least affected respectively) declared to “always have enough food to eat.” The data also show the advantage of those from affected areas (Table 3.6).

However, substantial percentage of households (in the range of 19 to 30 percent across areas) deplored the fact that some days there was not enough food to eat.

After the disaster, reduction of households who declared that they “always have enough food to eat” is observed. A slight decline of 12 and 8 percent for affected and least affected areas is noted. Consequently, there is an increase among those households who suffered not having enough food to eat.

#### D. Economic Losses

**Loss of Lives and Injuries Sustained.** An inquiry to household respondents, “Did any of your family members or friends become sick, injured, died or appeared missing?” yielded an affirmation of 26 percent of households in both areas with the affected areas slightly higher in percentage than the least affected ones.

Table 3.7. Distribution of Households by Loss of Lives and Injuries Sustained During the Reference Disaster, Province of Southern Leyte, Philippines, 2009.

Variables	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	200	200	<b>400</b>
Percent of households who experienced either			
• loss of lives, injuries, or being sick by household members	33.8	18.5	26.2
<b>n =</b>	<b>67</b>	<b>37</b>	<b>104</b>
- grandparents	6.0	6.4	6.2
- father	2.3	5.2	3.8
- mother	3.0	0.0	1.5
- spouse	3.0	0.0	1.5
- sons	1.5	0.0	0.8
- daughters	4.5	0.0	2.2
- brothers	4.5	2.7	3.6
- sisters	6.0	0.0	3.0
- other relatives	65.7	64.9	65.3
- friends	61.2	48.6	54.9

Who among the household members are vulnerable to the abovementioned consequences? A total of 104 out of the 400 households in Southern Leyte indicated that family members suffered injuries/sickness of which six (6) are elderly. Two-thirds of those who were hurt were identified to be relatives and friends (Table 3.7).

**Economic Losses In Reference Disaster.** A battery of questions was asked to determine the extent of loss to lives and property during the occurrence of a natural disaster which was perceived to be severe. Data in Table 3.8 indicate the percent distribution of households that sustained losses.

Table 3.8. Distribution of Respondents by Economic Losses During the Reference Disaster, Province of Southern Leyte, Philippines, 2009.

Economic Losses During Reference Disaster	Southern Leyte		
	Most Affected	Least Affected	Total
n =	<b>200</b>	<b>200</b>	<b>400</b>
<ul style="list-style-type: none"> <li>• loss/damage to Property/livelihood</li> </ul>	64.0	55.0	59.5
n =	<b>128</b>	<b>110</b>	<b>238</b>
<ul style="list-style-type: none"> <li>- house</li> <li>- livestock</li> <li>- personal belongings</li> <li>- employment</li> <li>- farm/shop/etc</li> <li>- stock of goods</li> <li>- vehicle</li> <li>- land</li> <li>- others</li> </ul>	38.3 14.8 14.8 42.5 37.5 3.1 0.0 0.0 4.7	66.4 0.9 22.7 13.6 32.7 1.8 0.0 0.9 0.9	52.4 7.8 18.8 28.1 35.1 2.4 0.0 0.4 2.8
Extent of disaster effect on economic position			
<ul style="list-style-type: none"> <li>• much worse</li> <li>• got worse</li> <li>• same as before</li> <li>• improved</li> </ul>	14.0 41.5 44.5 0.0	2.5 30.0 67.5 0.0	8.2 35.8 56.0 0.0



Six and five out of every ten household in affected and least affected areas affirmed to suffer damages. Ironically, twice as much household in least affected areas reported damage to their houses compared to its most affected counterpart. Higher percentage however in the former sustained loss of livestock, employment and farm products.

Given the loss and damages, how do households appraise their economic position as the result of the disaster? Two for every ten believed their economic position got worse with the occurrence of natural disaster while two-fifths in affected communities and two-thirds in least affected areas claimed their economic position is the same as before.

**Economic Losses in the Most Recent Disaster.** A detailed description of economic damages was drawn from responses pertaining to the recent disastrous event. It must be borne in mind that the most recent may not be severe. The major justification is the assumption that the recent experience can be recalled with greater accuracy.

Tables 3.9 to 3.16 (cf. appendix) present the magnitude of losses on individual, households, dwelling units, on agricultural production, on small-scale commercial enterprise, on income loss due to damages of infrastructure, and on loss due to displacement and migration.

***Household Members Affected.*** A smaller percentage (2 percent) of 400 households affirmed that the recent disaster had affected an average of 2 individual members. Majority of these affected households reported male members affected. Only one member got sick and one was injured due to the recent disaster.

A quarter and a little over one-third of households from affected and least affected areas respectively in Southern Leyte reported damage to their houses.

Part of houses popularly mentioned damaged by Southern Leyte respondents are floor, wall, roof and kitchen in the order of magnitude. With a few exceptions, the established pattern shows more households in affected areas compared with the least affected endure damages.

Given the damage/damages in one part or several parts of the house, what actions were taken? A large majority of Southern Leyte households affected indicate that no action or remedy had been resorted to. Basically, the cost of repair or replacement ranges from less than a thousand to five thousand pesos or roughly equivalent to 25 to 105 US dollars.

The sample respondents in Southern Leyte claimed no households experienced disruption of electricity or damage to whole house due the occurrence of the recent disaster.

***Damages of Goods and Valuables.*** Three out of every ten households in Southern Leyte (115 out of 400) declared damage on goods and valuables in the recent disaster. The top three mentioned are audio/video equipments, dining wares, and cooking wares.

Nine out of every ten households in Southern Leyte who claimed damages on valuables had damages to their dining wares. This is consistent with the data that no households in the province experienced disruption in electricity during the recent disaster event.

For those households who reported damaged to valuables, 32 percent indicated damage to audio/video equipments. The purchase cost of these items is estimated to range from 3000 to 6500 pesos. It is not surprising if only a small proportion could be able to replace or have the item repaired. For instance, out of 12 households in the affected areas who sustained damage only one household were able to have their audio/video item repaired/replaced. The data also show that those who incurred damaged on these items in Southern Leyte majority of repair and replacement were being done by those in the least affected areas.

***Damages to Agricultural Productions.*** Damages to agricultural products in the province identify the top five crops namely: cereals (rice or corn), banana, vegetables, coconut, and root crops. Considering that abaca, being one of the major crops produced by the province registers high imputed loss in the least affected areas. Except for banana, the pattern of loss in agricultural production is generally higher in affected compared with least affected areas.

**Damages to Livestock.** Loss of livestock is insignificant in Southern Leyte, only 2 out of 400 households reported damage to poultry and goat and these were in the affected areas.

Table 3.9. Distribution of Households by Extent of Economic Damages in Most Recent Natural Disaster, Province of Southern Leyte, Philippines, 2009.

	<b>Southern Leyte</b>		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Percent of households with members affected	2.5	1.5	2.0
Average number of household members affected by disaster	1.8	1.3	1.6
<b>n =</b>	<b>5</b>	<b>3</b>	<b>8</b>
females affected	1	0	1
males affected	4	3	7
Number of household with Injured members	0	1	1
Number of households with members who got sick	1	0	1

Note: Only one died of those family members who were affected.  
No family member have been permanently disabled.

Table 3.10. Distribution of Household Respondents by Extent of Damage to House and Household Amenities, Province of Southern Leyte, Philippines, 2009.

Variables	Southern Leyte		
	Most Affected	Least Affected	Total
Percent affirming to have incurred damages to house/household amenities due to disaster n =	43	72	115
	21.5	36.0	28.8
Percent with damages of wall Action done none repaired or replaced Average cost of repair/replacement n =	23	51	74
	53.5	70.8	62.2
none	82.6	54.9	68.8
repaired or replaced	17.4	45.1	31.2
Average cost of repair/replacement	5630.50	1875.60	3753.05
Percent affirming damages of roof Action done none repaired or replaced Average cost of repair/replacement n =	14	14	28
	32.6	19.4	26.0
none	64.3	21.4	42.8
repaired or replaced	35.7	78.6	57.2
Average cost of repair/replacement	281.30	953.50	617.40
Percent affirming damages of floor Action done none repaired or replaced Average cost of repair/replacement n =	43	72	115
	20.9	15.3	18.1
none	100.0	63.6	81.8
repaired or replaced	0.0	36.4	18.2
Average cost of repair/replacement	789.00	789.00	789.00
Damage of room as a whole n =	0	3	3
	0.0	4.3	2.2
Damage of kitchen Action done none repaired or replaced Average cost of repair/replacement n =	3	17	20
	93.0	76.4	84.7
none	66.7	35.3	51.0
repaired or replaced	33.3	64.7	49.0
Average cost of repair/replacement	2100.00	2767.30	2433.65
Percent affirming damage to electric connection Action done none repaired or replaced Average cost of repair/replacement n =	0	0	0
	0.0	0.0	0.0
none	----	----	----
repaired or replaced	----	----	----
Average cost of repair/replacement	----	----	----
Percent affirming damage to whole house Action done repaired or replaced Average cost of repair/replacement n =	----	----	----
	0.0	0.0	0.0
repaired or replaced	----	----	----
Average cost of repair/replacement	----	----	----

\* Figures refer to affected and least affected areas of Albay  
No household reported damage to telecommunication.

Table 3.11. Distribution of Household Respondents by Reported Damage of Goods, and Valuables Province of Southern Leyte, Philippines, 2009.

Variables	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Percent affirming damages on goods and valuables	25.5	34.0	29.8
<b>n =</b>	<b>51</b>	<b>68</b>	<b>119</b>
Top three household goods damage (Multiple response)			
- audio/video equipment	23.5	39.7	31.6
- dining wares	96.1	117.6	106.8
- cooking wares	11.8	26.5	19.2
<b>n =</b>	<b>6</b>	<b>18</b>	<b>24</b>
Estimated mean purchase cost of cooking wares	271.70	1394.40	833.05
Percent who were able to replaced or repaired cooking wares	0.0	16.7	8.4
<b>n =</b>	<b>49</b>	<b>68</b>	<b>117</b>
Estimated mean purchase cost of dining wares	303.50	443.60	373.55
Percent who were able to replaced or repaired dining wares	42.9	51.3	47.1
<b>n =</b>	<b>12</b>	<b>27</b>	<b>39</b>
Estimated mean purchase cost of audio/video equipment	3365.80	6486.00	4925.90
Percent who were able to replaced or repaired audio/video equipment	8.3	55.6	32.0

Table 3.12. Distribution of Households by Extent of Damages to Agricultural Production, Province of Southern Leyte, Philippines, 2009.

Variables	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Percent affirming to incurred damages on crops and trees owned	17.5	9.0	13.2
<b>n =</b>	<b>35</b>	<b>18</b>	<b>53</b>
Top five crops damage (in actual number of households affected)			
(Multiple response)			
- cereals	25	10	18
- banana	2	2	2
- vegetables	1	1	1

- coconut	11	5	8
- rootcrops	2	2	2
- other crops	4	3	4
Average loss in production			
- cereals	11710.50	11846.70	11778.60 1250.00
- vegetables	1250.00	1250.00	1060.00
- rootcrops	2000.00	120.00	3482.90 1737.50
- coconut	4349.10	2616.70	7316.65
- banana	875.00	2600.00	
- abaca	1633.30	13000.00	

Table 3.13. Distribution of Households by Extent of Damages to Livestock, Province of Southern Leyte, Philippines, 2009.

	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Percent affirming to incurred damages on livestock	1.0	0.0	0.5
<b>n =</b>	<b>2</b>	<b>0</b>	<b>2</b>
Livestock loss (Multiple response)			
- poultry/duck	50.0	----	25.0
- swine	0.0	----	0.0
- others (goat, cattle, etc.)	50.0	----	25.0
<b>n =</b>	<b>1</b>	<b>0</b>	<b>1</b>
<b>Poultry</b>			
Nature of loss			
- decrease due to death or missing	100.0	----	50.0
Reason for loss			
- disease	100.0	----	50.0
- death/missing	0.0	----	0.0
Value of poultry loss	200.00	----	100.00
<b>n =</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Swine</b>			
Nature of loss			
- decrease due to death or missing	---	----	----
Reason for loss			
- disease (in actual number)	----	----	----
- death/missing (in actual number)	----	----	----
- scarcity of feeds (in actual number)			
Value of swine loss	----	----	----

**Damages on Small-scale Industries and Commercial Activities.** Only a handful (6 out of 400) experienced damages or loss of income on sales activities. The predominant business is general merchandize; other small-scale enterprises include eatery, restaurant, and other buy and sell endeavors.

Understandably, such situation may be because the major source of livelihood is agriculture. To gain insight on how the recent disaster impact on business activities, data on the before-after condition in cost of production, manpower, wages/salaries and capital cost were presented in Table 3.14.

The overall pattern indicates reduction in all items identified above. Somehow, the two households in the most affected areas of Southern Leyte incurred increase cost of production, three times more compared to the cost before disaster.

There is also corresponding reduction in manpower in the before and after condition. It is not ascertained whether this manpower are paid or unpaid. It may not be farfetched that in the “after” condition, business owner may utilize unpaid family labor to manage and mitigate losses. This assumption is partly supported by reduction in wages/salaries.

Capital cost on the other hand was non-existing after disaster and the total value of loss for two households in Southern Leyte was minimal.

Table 3.14. Distribution of Household Respondents by Damages on Small-scale Industries and Commercial Activities, Province of Southern Leyte, Philippines, 2009.

	Southern Leyte		
	Most Affected	Least Affected	Total
Percent affirming to incur damages on economic activities due to disaster <b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
	2.0	1.0	1.5
Type of small-scale enterprises/ commercial activities (in actual number) <b>n =</b>	<b>4</b>	<b>2</b>	<b>6</b>
- general merchandise/store	2	2	4
- food/eatery/restaurant	2	---	2
- others	---	---	---
General Merchandise Store Annual cost of production			
- <b>materials</b>			
▪ before disaster	11000.00	0.00	5500.00
▪ after disaster	30750.00	0.00	15375.00
- <b>manpower</b>			
▪ before disaster	1.3	1.0	1.2
▪ after disaster	1.0	0.5	0.8
- <b>wages/salaries</b>			
▪ before disaster	1000.00	6500.00	3750.00
▪ after disaster	1095.00	500.00	797.50
- <b>capital cost</b>			
▪ before disaster	1500.00	31500.00	16500.00
▪ after disaster	0.00	0.00	0
Average value of loss <b>n =</b>	<b>1</b>	<b>1</b>	<b>2</b>
	219.00	2150.00	1184.50

\*\* Further distribution was confined on damages on general merchandise store only. There is a very small number of cases for other types of economic activities and gives no meaningful distribution pattern.

**Income Loss Due to Damage of Infrastructure.** When asked if the community experienced damages to infrastructure, almost one-fourth (92 of the 400 households) reported damages on major infrastructures which may have affected household income.

There are four major infrastructure (bridges, roads, power system, and telecommunications) examined as to their impact on income loss. Water supply, basketball courts, and churches



are dropped from the analysis. Respondents indicated that these cause no disruption, hence, no loss of income.

Destruction to bridges, damages to roads and telecommunications created very minimal disruption of economic activities among the Southern Leyte households and subsequently no income loss.

Damage to power supply disrupts activities more among households in the least affected areas than those in the affected areas. Like in the previous infrastructures mentioned, the damage had minimal disruption lasting from 3 to 5 days thus income loss was negligible.

Table 3.15. Distribution of Households by Income Loss Due to Damages to Infrastructure\*, Province of Southern Leyte, Philippines, 2009.

Variables	Southern Leyte		
	Most Affected	Least Affected	Total
Percent reporting damages to infrastructure n =	200	200	400
	36.0	10.0	23.0
<b>1. Bridge</b> n =	72	20	92
- Number of days disruption	0.8	0.05	0.43
- Average loss of income	0.0	0.0	0
<b>2. Telecommunications</b>			
- Number of days disruption	0.03	0.35	0.19
- Average loss of income	0.0	0.0	0
<b>3. Electric Supply</b>			
- Number of days disruption	3.0	5.5	4.2
- Average loss of income	0.00	25.00	12.5
<b>4. Road</b>			
- Number of days disruption	0.7	0.0	0.4
- Average loss of income	0.00	0.00	0

\* Damages to Infrastructure (water supply, basketball court and church) cause no disruption and no loss of income

**Loss of Income and Increased Expenditure Due to Displacement.** As a consequence of disaster events people may move out of their communities temporarily or migrate to other

places. A cursory look at the data shows only a handful (18 out of 400) of households in Southern Leyte was temporarily displaced or had migrated in the recent disaster.

Regardless of the number of households displaced, an average of five persons was indicated to move out of their residence. This number represents the national average of household size (NDHS, 2003) and one can safely deduce that displacement works for entire households and not selective among members.

The data also indicates young migrants; average age range from 23 to 27 years old. Although displacement seems to be for entire household, it is more likely that older household members will return while the young venture to other places in search for work.

The expectation of increase expenditure is not realized as indicated by the data. The 18 displaced households in Southern Leyte reported no expenditure increase.

A possible explanation on the non-increase of expenditure may be because there is no money to spend; displaced people rely on emergency assistance of foodstuff and had resorted to various ways to cope with their basic needs.

Table 3.16. Distribution of Households by Temporary Displacement and Migration of Household Members Due to Natural Disaster, Province of Southern Leyte, Philippines, 2009.

Displacement and Migration Variables	Southern Leyte		
	Most Affected	Least Affected	Total
n =	200	200	400
Percent affirming displacement/ Migration of household members	6.0	3.0	4.5
n =	12	6	18
Average number of those who were displaced or had migrated	4.9	4.0	4.4
Average age of persons displaced or had migrated	25.2	26.8	26.0
n =	----	----	----
Percent of households reporting increase in expenditure during displacement/migration	0.0	0.0	0.0
Average increase in expenditures	0.00	0.00	0.0

## **E. Health Impact**

Two indicators of disaster consequence to health is examined: 1) changes in household facilities/amenities which will make household members vulnerable to diseases (water and sanitation) and 2) availability and access to health care services.

**Household Facilities.** Facilities and household amenities suggest extent of sanitation and hygiene practiced by households; a change in this may compromise the health of the household members.

A comparative look on waters sources before and after disaster did not evince changes in pattern (Table 3.17). Definitely, households in Southern Leyte in both before and after periods are at advantage, eight out of every ten households draw water from tap.

No change in the type of toilet facility is seen in the before and after disaster period in the province. The predominant type of toilet utilized is flush/water-sealed with septic tank.

Table 3.17. Percent of Household Distribution of Respondents By Household Facilities Before and After Disaster, Province of Southern Leyte, Philippines, 2009.

	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>200</b>	<b>200</b>	
<b>Source of Water</b>			
<u>Before Disaster</u>			
• tap in house	84.5	83.5	84
• communal tap	15.0	10.0	12.5
• tubewell / borehole	0.0	0.5	0.25
• buy water from nearby community	0.0	2.5	1.25
• other protected sources	0.5	2.5	1.5
• unprotected sources	0.0	1.0	0.5
<u>After Disaster</u>			
• tap in house	84.0	85.0	84.5
• communal tap	15.5	9.0	12.25
• tubewell / borehole	0.0	0.5	0.25
• buy water from nearby community	0.0	2.0	1.0
• other protected sources	0.5	3.0	1.75
• unprotected sources	0.0	0.5	0.25
<u>Before disaster</u>			
• Flush toilet	0.5	2.5	1.5
• Flush/water sealed with septic tank	96.5	94.5	95.5
• Open hole/soakpit	2.0	1.0	1.5
• No facility, bush or field	1.0	2.0	1.5
<u>After disaster</u>			
• Flush toilet	0.5	3.0	1.75
• Flush/water sealed with septic tank	97.5	94.5	96
• Open hole/soakpit	1.5	0.5	1
• No facility, bush or field	0.5	2.0	1.25

**Availability of Health Care Services.** No discernable changes were noted for water source and in toilet facilities. This suggests that incidence of water-borne diseases does remain more or less the same.

Another indicator of impact of disaster to health is the availability of health care services before and after the disaster event. Interruption in the delivery of health services translate to greater vulnerability of affected people.

Data on Table 3.18 evince support in the availability of health care services. Except for services relating to treatment of profuse vaginal bleeding and birth delivery, majority of households in affected and least affected areas affirmed that services are available before and after the disaster.

It is quite interesting that while these two important services were not available in the before and after disaster condition, other reproductive health services were available and were accessed by households across areas.

Specific health services were enumerated; the top five available are family planning, pre and post natal care, immunization, consultation for minor illness like colds, cough, fever, etc. as well as blood pressure monitoring.

Overall, the pattern of claim to the availability of health services indicates the advantage of most affected areas. Itemized comparison for each health services revealed no meaningful difference in the “before” and “after” availability.

Table 3.18. Distribution of Households by Availability of Health Services Before and After Disaster, Province of Southern Leyte, Philippines, 2009.

Availability of Health Services Before Disaster	Southern Leyte		
	Most Affected	Least Affected	Total
Percent affirming availability of: n =	200	200	
- family planning services	96.5	83.0	89.75
- pre and post natal care	93.5	81.0	87.25
- consultation for minor illnesses (cough, colds, etc)	92.5	77.0	84.75
- tetanus toxoid immunization	95.5	81.0	88.25
- immunization for children under 5 years old	98.0	82.0	90
- treatment of profuse vaginal bleeding	33.5	26.5	30
- blood pressure monitoring	98.5	93.0	95.75
- birth delivery	25.0	46.0	35.5
- health services for sick children	81.0	60.5	70.75
- treatment for minor cuts, Wounds, sprains, etc	89.5	80.0	84.75
Availability of Health Services After Disaster			
Percent affirming availability of: n =	200	200	400
- family planning services	96.5	82.0	89.25
- pre and post natal care	95.0	80.0	87.5
- consultation for minor illnesses (cough, colds, etc)	92.5	74.5	83.5
- tetanus toxoid immunization	95.0	79.5	87.25
- immunization for children under 5 years old	98.0	81.5	89.75
- treatment of profuse vaginal bleeding	35.5	26.5	31
- blood pressure monitoring	99.0	94.0	96.5
- birth delivery	40.5	47.5	44
- health services for sick children	80.5	61.0	70.75
- treatment for minor cuts, Wounds, sprains, etc	88.8	79.5	84.15

**Access to Health Services.** Given that health care services are available before and after the disaster, do household respondents feel that access to services was compromised after the occurrence of natural disaster?

One out of every four believes so, the poor access is popularly attributed to lack of medicine, a reason which can be indirectly cause by the disaster. Majority of households in both affected and least affected areas think that inaccessibility of health services is due to lack of medicine. Damage to road may inhibit access of people; visits to health centers may not be possible because of impassable road. Moreover, obtaining the needed medicine may be delayed, thus compromising the health of those who need to be attended to.

The data suggest that access to health services was jeopardized in least affected areas due to damaged road.

To gain an insight whether children's health was compromised by infectious diseases, questions were asked for those who have children. Four types of infectious diseases were identified and respondent has to indicate whether or not his/her children suffered the symptoms of diarrhea, acute respiratory infections, skin infections, and fever/colds.

A total of 20 out of 400 households have children who suffered symptoms of fever/colds, acute respiratory infections (ARI), diarrhea and skin infection with majority identifying fever and colds.

In like manner, average number of children with symptoms of acute respiratory infections and fever and colds is high (8 and 5 children) notably in most affected areas of Southern Leyte.

Table 3.19. Percent Distribution of Household Respondents By Health Care Variables Province of Southern Leyte, Philippines, 2009.

Access to health care after Disaster	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
<b>Multiple Response</b> Percent affirming access to health care was compromised after disaster	19.0	25.0	22
<b>n=</b>	<b>38</b>	<b>50</b>	<b>88</b>
Reasons for poor access			
• road was damaged	21.1	36.7	28.9
• lack of medication	71.1	44.9	58
• health centers destroyed	0.0	0.0	0.0
• inadequate health care professionals	5.3	10.2	7.75
• unavailable transportation	2.6	8.2	5.4
<b>n=</b>	<b>0</b>	<b>2</b>	<b>2</b>
Infectious diseases for children since occurrence of disaster			
<b>Multiple Response</b> Percent affirming own children who suffered the following symptoms <b>n=</b>	<b>19</b>	<b>1</b>	<b>20</b>
• fever/colds	68.4	100.0	84.2
• diarrhea	21.1	0.0	10.55
• acute respiratory infection	21.1	0.0	10.55
• skin infection	31.3	0.0	15.65
Average number of children affected			
• fever/colds	5.0	1.0	3.0
• diarrhea	1.8	0.0	0.9
• Acute Respiratory Infection	8.3	0.0	4.15
• skin infection	1.5	0.0	0.75



Studies (Daquino and Gomez, 2006) have shown the impact of conflict to reproductive health. To know whether the same findings holds true in disaster areas, listing of symptoms of reproductive tract infections were presented to respondents. They have to affirm the experience of symptoms before and after disaster. Reproductive tract infection symptoms include frequent and painful urination, genital itchiness, genital discharges (profuse or foul-smelling) and lower abdominal pain.

Patterns which emerged from the data in Table 3.20 show that frequent and painful urination constitute the most mentioned of symptoms. Almost thirty percent of household respondents declared to experienced this infection before the disaster struck. It is interesting to note that there is reduction in percentage of households reporting this symptom after the disaster.

Nearly all of the listed infections have common pattern, namely, reduced number of households that exhibits the symptoms after the disaster.

Table 3.20. Distribution of Respondents By Experiences of Reproductive Tract Infection (RTI) Symptoms, Province of Southern Leyte, Philippines, 2009.

RTI Symptoms Before Disaster	Southern Leyte		
	Most Affected	Least Affected	Total
Percent affirming to have experienced: n =	200	200	400
<b>(Multiple Response)</b>			
- frequent urination	27.5	29.0	28.25
- painful urination	13.0	18.0	15.5
- genital itchiness	4.5	5.0	4.75
- profuse genital discharges	0.5	0.5	0.5
- foul-smelling genital discharges	0.0	1.0	0.5
- lower abdominal pain	8.0	8.5	8.25
<b>RTI Symptoms After Disaster</b>			
Percent affirming to have experienced: n =	200	200	400
<b>(Multiple Response)</b>			
- frequent urination	22.5	25.0	23.75
- painful urination	5.0	12.0	8.5
- genital itchiness	2.5	0.5	1.5
- profuse genital discharges	0.5	0.5	0.5
- foul-smelling genital discharges	0.5	0.5	0.5
- lower abdominal pain	4.0	7.0	5.5

## F. Changes in the Household Condition

The sample household encountered several natural disasters in the last three years, 2006 – 2008. The data shows the magnitude of those who affirmed substantial losses or damages to properties, livelihood, houses, and infrastructure.

To determine the changes and improvement in the span of time, a comparison of the “before” and “after” housing condition (in terms of building material) and earnings will provide insights to the pace of recovery and rehabilitation.

**Building Conditions Before and After.** In general, houses in both affected and least affected areas were built with either permanent strong or semi permanent mixed materials. An advantage in housing materials is seen among those in least affected areas of Southern Leyte.

Houses in most affected areas in Southern Leyte show dramatic shift. There is a decline of houses made of light materials and an increase of semi-permanent units, that is, houses made of mix materials. This suggests that houses of light materials destroyed by the natural disaster were replaced by better and stronger materials. Understandably, since households are still recouping from their losses, the houses are more in a nature of semi permanent.

Table 3.21. Distribution of Households by Housing Condition, Provinces of Albay and Southern Leyte, Philippines, 2009.

Building Condition Before and After Disaster	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	200	200	400
<u>Building condition before disaster</u>			
• permanent (strong materials)	13.0	20.0	16.5
• semi-permanent (mix materials)	31.5	33.5	32.5
• not permanent (light materials)	55.5	46.5	51
<u>Building condition after disaster</u>			
• permanent (strong materials)	13.5	19.5	16.5
• semi-permanent (mix materials)	55.5	36.5	46
• not permanent (light materials)	31.0	43.5	37.25
• others	0.0	0.0	0.0

Findings described in the earlier section highlight heavy economic losses. Moreover, large majority of households appraised their economic position to be worst after disaster. A look at change in their earning is of interest in order to know how their capacity to generate income is affected by disaster.

**Change in Earnings.** Both affected and least affected areas showed a decline in average annual income with the households in the affected communities reflecting substantial decline in earnings - five times more than their counterpart in the least affected.

Table 3.22. Distribution of Household Respondents By Average Annual Income, Province of Southern Leyte, Philippines, 2009.

Income Variables	Southern Leyte		
	Most Affected	Least Affected	Total
n =	200	200	
Average annual earnings of members affected by natural disaster			
• Before disaster	27775.60	12800.00	20287.80
• After disaster	25215.60	12266.67	18741.14
Difference on the Before – After earnings	2560.0	533.0	1546.50
Percent Change	9.2	4.2	6.7

**Current Assets and Resources Owned.** When asked as to their current assets and resources owned in terms of landholdings, three out of every ten households affirmed owning land. While damage to land is minimal and occurred to a handful of households, no significant difference in land size, area cultivated and irrigated land is seen between affected and least areas in province. (Table 3.23)

Table 3.23. Distribution of Sample **Households** by Landholding Variables, Province of Southern Leyte, Philippines, 2009.

Landholding Variables	Southern Leyte		
	Most Affected	Least Affected	Total
n =	200	200	400
Percent affirming owning land (in hectares)	29.5	27.5	28.5
Average land size owned	1.8	1.6	1.7
Average land size cultivated	1.7	1.2	1.45
Average uncultivated land size	0.13	0.36	0.245
Average hectares irrigated (cultivated land)	0.5	0.3	0.4
Average hectares not irrigated	0.3	1.2	0.75

**Current Livestock/Poultry Owned.** Sixty (60%) percent of households in Southern Leyte professed to own livestock and/or poultry.

The number of households who own cattle/carabao are higher in most affected areas while there are more households who raise hogs in the least affected communities. An average of two work animals (cattle/carabao) is posted in both areas. Hog raisers affirmed to have on the average 3 animals owned at the time. Eight out of every ten households in the province raise poultry. On the average, the number of poultry ranges from 7 to 8 (Table 3.24).

Table 3.24. Distribution of Households by Livestock/Poultry Currently Owned, Province of Southern Leyte, Philippines, 2009.

Ownership of Livestock and Poultry	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Percent affirming owning livestock/poultry	60.0	60.0	60.0
<b>n =</b>	<b>120</b>	<b>120</b>	<b>240</b>
Type of domestic animals owned (Multiple response)			
• cattle/carabao	31.7	21.7	26.7
• goat/sheep	8.3	5.8	7.05
• hogs	28.3	39.2	33.75
• poultry	81.7	82.5	82.1
Average livestock/poultry owned			
• cattle/carabao	1.6	1.9	1.75
• goat/sheep	1.9	1.4	1.65
• hog	2.7	3.0	2.85
• poultry	7.0	8.0	7.5

## Chapter 4

### Reestablishing Normalcy: Dealing and Coping with the Social Consequences of Natural Disaster

#### A. Socio-Demographic Background of Respondents

The information discussed in this section is provided by the respondents the majority of whom are the spouse of household heads (59.8%). Far more household heads were interviewed in most affected areas (43.5%) than in least affected areas (32.0%).

The respondents in both most affected and least affected areas were predominantly females.

Catholics outnumber members of other religious denominations. Table 1 shows that 16.0 percent of the respondents from the most affected areas and only 5.5 in least affected areas belonged to other religious denomination.

The average age of the respondents is 45.19 years. No significant difference is observed between the respondents from most affected areas and least affected areas.

Eight in ten respondents from the least affected and six in ten from the most affected areas identified themselves as Leyteno's. This figure could indicate either a higher in-migration by members of other ethnic groups in the most affected areas.

By civil status, the data in Table 1 shows that married respondents far outnumber the other group of respondents. Table 1 further shows that there are more single and widow/widower in least affected areas whereas there were more married respondents in the most affected areas.

Table 1. Demographic background of respondents, Southern Leyte

	Southern Leyte		Total
	Most Affected	Least Affected	
Relationship to Household Head			
Head	43.5	32.0	37.8
Spouse	56.5	63.0	59.8
Children/Son-In-Law/Daughter-In-Law	0.0	1.5	0.8
Sex			
Male	34.0	21.5	27.8
Female	66.0	78.5	72.3
Age			
Under 30	11.5	15.0	13.0
30 - 39	31.5	22.0	26.8
40 - 49	22.0	25.0	23.5
50 - 59	16.5	23.5	20.0
60 and over	18.5	14.5	16.5
<i>Average age (in years)</i>	<i>45.08</i>	<i>45.30</i>	<i>45.19</i>
Civil Status			
Single	2.0	6.0	4.0
Married	85.0	79.5	82.3
Separated/Divorced	2.5	1.5	2.0
Widow/Widower	10.5	13.0	11.8
Ethnicity			
Cebuano	27.5	14.5	21.0
Leyteno	61.0	79.5	70.3
Boholano	5.5	2.5	4.0
Others	6.0	3.5	4.7
Religion			
None	1.0	0.0	0.5
Catholic	83.0	94.5	88.8
Others	16.0	5.5	10.8
<i>n</i>	200	200	400

**Current Health Condition.** Self assessment of respondents of their health in general, indicates no significant difference between the two areas of comparison. In general, seven

out of every ten respondents for the province indicated “fair” and “good” for their health condition (Table 4.1).

To further determine their functioning and quality of life, specific questions were fielded with regard to capacity to perform typical day-to-day tasks and mobility.

Two thirds (67 percent) of respondents affirmed no limitation in their capacity to perform daily household tasks. No difference is noted between affected least affected areas. A little over a quarter (28 percent) claimed they are somehow limited by their health in doing these daily tasks.

Performing more strenuous tasks (e.g. climbing several flights of stairs, walking over a hill) admittedly shows a slight decline of respondents able to perform these. Although very much a function of age, one-third of respondents confirmed a little limitation. In general, six out of every ten are not limited at all in doing these tasks.

Table 4.1. Distribution of Respondents by Quality of Life Variables, Southern Leyte, Philippines, 2009.

Quality of Life Variables	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	200	200	400
General assessment of health condition			
poor	2.5	3.0	2.8
fair	23.5	30.5	27.0
good	46.5	42.5	44.5
very good	27.5	24.0	25.8
Capacity to perform typical tasks			
a) household tasks			
limited a lot	6.0	4.5	5.3
limited a little	29.0	27.0	28.0
not limited at all	65.0	68.5	66.8
b) walking over hill or climbing stairs			
limited a lot	6.0	5.5	5.8
limited a little	37.5	34.0	35.8
not limited at all	56.5	60.5	58.5



To probe further in order to give a more accurate picture of the health condition, questions concerning the last four weeks prior to interview date were included. Questions on physical and emotional impediments that hamper performance of day-to-day activities were asked (Table 4.2).

Data shows over fifty percent (53%) for both affected and least affected areas admitted having accomplished less of their work in the last four weeks due to their physical health. Consequently, almost the same number claimed limitation in doing their daily activities.

One's emotional state of mind affects performance of work and even ordinary activities. Forty-seven percent (47%) of respondents for both affected and least affected areas affirmed having accomplished less while thirty-seven percent (37%) says they were less careful in doing their work.

Pain, regardless of the cause affects performance of work and day-to-day activities. Respondents for both areas (44%) concurs that pain had affected "a little bit" their work in the last four weeks.

Table 4.2. Distribution of Respondents by Health Impediment Indicators, Province of Southern Leyte, Philippines, 2009.

Health problems during the last 4 weeks	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	200	200	400
Physical Impediment on usual work/activities			
Percent affirming			
- has accomplished less	54.5	51.5	53.0
- limited activities	50.5	44.5	47.5
Emotional impediments on work or regular activities			
- accomplished less	47.0	47.5	47.3
- less careful in doing	36.0	38.0	37.0
Effect of pain on work/activities during the last four weeks			
Overall effect of pain			
- not at all	38.5	28.5	33.5
- a little bit	42.0	45.5	43.8
- moderately	13.5	16.5	15.0
- quite a lot/extremely	6.0	9.4	7.7

## **B. Emotional Impact of Disaster**

***Experiences and Emotional Reactions During Disaster.*** To capture what happened during the disaster, respondents were asked to recall certain events and feelings that pervade during that period.

A very large majority (92.8%) of the respondents reported feeling that their life was in danger during the disaster. This feeling was equally shared by the respondents from most affected (95.0%) and least affected (90.5%) where overwhelming majority felt life was in danger.

To assuage their fear, 50.5 percent of the respondents from the most affected and 17.0 percent in the least affected reported leaving their homes (Table 4.3). About eight percent of the total number of respondents reported being separated from their families. The incidence of being separated from their families was three time higher in the most affected areas than in least affected areas.

Reports of being injured or of having one or more family member being injured during the disaster were generally low, although there were more respondents in the least affected areas which did report so.

As a means of measuring the extent of trauma experienced by the respondents, a trauma intensity scale was devised. The scale has intensity score where 1 denotes “not at all” which translate that the experience did not in any way generate any emotional trauma and 5 denotes the “extreme” impact of the event.

Data in Table 4.3 shows that across both most affected and least affected areas, the event was adjudged to be ‘extremely’ traumatic for the respondents.

Table 4.3. Distribution of Respondents by Specific Experiences During Disaster, Province of Southern Leyte, Philippines, 2009.

Specific Experiences (Social Impact) During Disaster	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	200	200	400
Percent affirming the following experiences			
• felt life was in danger	95.0	90.5	92.8
• left home	50.5	17.0	33.8
• separated from family	12.0	3.5	7.8
• injured	2.0	3.0	2.5
• one of family member is injured	1.5	2.0	1.8
Trauma intensity scale	4.8	4.5	4.7

**Management of Traumatic Experiences.** Notwithstanding the traumatic experience of the respondents, data would show that the respondents believed they were able to deal with the disaster situation. In both areas respondents did fairly well in dealing with the consequence of the event.

What did the respondents do to cope and deal with the trauma brought about by the disaster? In table 4.4 are presented the averages of the six Likert statements which seek to measure the coping mechanisms of the respondents. The scores ranged from 1 to 5 where 1 denotes that the particular item is not what the respondent does and 5 represents “very much what the person did.

The overall coping index of 3.7 across most affected and least affected areas signifies that respondents were able to manage well the emotional trauma. Slight edge albeit not significant is posted by respondents from most affected areas.

The data shows the pre-eminence of religion as a means of dealing with the effects of disaster in both the most affected and least affected areas. The ability to articulate about their common experiences and hardships by “talking to anyone about the disaster” also came out as what the respondents did. Peer support through constant communication not only provides relief from the trauma but it also give a sense of “oneness” in the face of disaster.

The respondents also deal with the effects of disaster both cognitively and actively through behavioral means. “Thinking and doing possible ways to improve the situation” indicate a positive outlook and a healthy view on life.

The data suggest that avoidance by “do[ing] things to take off mind with disaster experience” and reappraisal “to think disaster in a different way to avoid getting upset” are not some of what the respondents did to manage trauma resulting from the disaster.

Table 4.4. Extent of Trauma and Coping Behaviour, Southern Leyte, Philippines, 2009.

Extent of Trauma and Coping Behavior Variables	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Trauma intensity scale	4.8	4.5	4.7
Ability to deal with disaster situation	4.3	4.4	4.4
Coping mechanism in dealing with disaster			
• did things to take off mind with disaster experience	3.6	3.1	3.4
• think disaster in a different way to avoid getting upset	3.5	3.2	3.4
• rely with religion to help deal	4.5	4.3	4.4

with disaster			
• think of possible ways to improve situation after the disaster	4.0	3.5	3.8
• do things to improve situation after the disaster	3.9	3.4	3.7
• talk to anyone about the disaster	4.0	3.8	3.9
Average coping index	3.9	3.5	3.7

***How Well Respondents Manage the Traumatic Experience?*** Table 4.5 shows emotional state of the respondents in the past 4 weeks immediately preceding the study period. The measure of emotional state can generally be grouped into two: four measures of negative disposition and three measures of positive disposition.

The data shows that the greater majority of the respondents did not experience emotional lows in the past 4 weeks. More particularly, the respondents reported not feeling so down in the dumps, and feeling so down and blue. But a number of the respondents did admit that their physical health or physical problems interfered with their social activities like visiting friends, relatives, etc.

Although responses on the 3 measures of positive emotional disposition are more heterogeneous than the 4 measures of negative disposition, the data indicates that the respondents did have a positive disposition in the past 4 weeks. More particularly, the greater majority of the respondents reported having lots of energy, feeling calm and peaceful, and being happy some of the time, a good bit of the time, most of the time, or all of the time.

Table 4.5. Intensity of Emotional Condition During the Past 4 Weeks, Southern Leyte, Philippines, 2009.

Emotional state during the past four weeks	Southern Leyte		
	Most Affected	Least Affected	Total
<b>n =</b>	200	200	400
Feeling so down, nothing could cheer up			
- all of the time	0.5	0.5	0.5
- most of the time	0.0	1.0	0.5
- a good bit of the time	1.0	3.0	2
- some of the time	16.5	14.5	15.5
- a little of the time	18.5	23.0	20.75
- none of the time	63.5	58.0	60.75
Feeling very nervous			
- all of the time	1.0	0.0	0.50
- most of the time	1.0	0.5	0.75
- a good bit of the time	5.5	6.0	5.75
- some of the time	24.5	18.5	21.50
- a little of the time	21.5	24.0	22.75
- none of the time	46.5	51.0	48.75
Felt downhearted and blue			
- all of the time	0.0	1.0	0.50
- most of the time	2.0	1.5	1.75
- a good bit of the time	6.0	7.0	6.50
- some of the time	35.5	38.5	37.00
- a little or none of the time	56.5	52.0	54.25
Interfered with social activities			
- all of the time	0.5	0.5	0.50
- most of the time	1.0	1.5	1.25
- a good bit of the time	5.0	4.5	4.75
- some of the time	26.5	25.0	25.75
- a little of the time	29.5	34.0	31.75
- none of the time	37.5	34.5	36.00
Have a lot of energy			
- all of the time	4.0	5.5	4.75
- most of the time	24.5	21.0	22.75
- a good bit of the time	37.5	42.5	40.00
- some of the time	28.5	27.5	28.00
- a little or none of the time	5.5	3.5	4.50
Felt calm and peaceful			
- all of the time	4.5	5.0	4.75
- most of the time	23.0	27.0	25
- a good bit of the time	37.0	47.0	42
- some of the time	31.0	19.0	25
- a little or none of the time	4.5	2.0	3.25
Had been happy			
- all of the time	2.0	2.0	2
- most of the time	17.5	24.0	20.75

- a good bit of the time	49.0	43.5	46.25
- some of the time	30.0	28.5	29.25
- a little or none of the time	1.5	2.0	1.75

**Communal Coping of Emotional Impact.** Individuals adopt different remedial actions in order to respond to and recover from the effects of disaster. Coping mechanisms can range from altruism to aggressive reactions.

To determine actions and responses of respondents in dealing with the aftermath of disaster events, twenty-one statements were presented to respondents; they identified their response in the scale of 1 to 5 where 1 signifies “not at all what I did” and 5 mean “very much what I did.” To present a coherent coping pattern, the 21 statements were grouped into four broad coping mechanisms: social joining, seeking social support, antisocial action, and aggressive action.

The data in Table 4.5 shows average scores across four broad coping mechanisms. Greater values of the mean indicate propensity to engage in a said coping mechanism.

The figure shows that the most common form of communal coping are social joining and aggressive action. Social joining happens when an individual engage in collective action and altruism particularly directed towards helping and knowing the feelings and needs of others. Aggressive coping behavior on the one hand is group of action statements which include: acting fast on the situation, aggressive decisions and manner, adapt a take-charge attitude, and demonstrate firmness and tenacity.

Seeking social support is also identified as one of the communal coping mechanisms of the respondents. Seeking social support includes effort to seek emotional, informational, and material support.

Notwithstanding the difficult circumstance during and after the disaster situation, the respondents are not inclined to engage in antisocial action or those actions which are intended to shortchanged and/or psychologically hurt others.

A statistically significant difference exists in the communal coping mechanisms between the respondents from most affected and least affected areas. The data shows that the respondents from most affected areas have an edge in terms of social joining, seeking social support, and aggressive action. In addition, many more respondents from most affected areas are involved in antisocial action.

Table 4.6. Communal Coping, Southern Leyte, Philippines, 2009.

Coping Mechanism	Southern Leyte		Over-all coping
	Most Affected	Least Affected	
<b>n =</b>	<b>200</b>	<b>200</b>	<b>400</b>
Social Joining	3.66	3.34	3.50
Seeking social support	3.54	3.25	3.40
Antisocial action	1.86	1.68	1.78
Aggressive action	3.60	3.39	3.50

**Depression and anxiety.** To find out whether the respondents exhibit psychiatric symptoms of depression and anxiety, the Hopkins Symptom Check List-25 (HSCL-25), a screening instrument designed to measure symptoms of anxiety and depression. The HSCL-25 is consists of 25 items: 10 items for anxiety symptoms and 15 items for depression symptoms.

Responses range from “1- not at all”, “2- a little”, “3- quite a bit”, and “4- extremely.” The internal consistency for each of the ten-item anxiety and the 15-item depression symptom are  $\alpha=0.90$  and  $\alpha=0.88$ , respectively, which are more than acceptable. A respondent suffers from anxiety symptom or depression symptom if the average score is  $\geq 3.0$ .



The data in Table 4.7 shows that the vast majority of the respondents did not show symptoms of anxiety and depression in the past month immediately preceding the study period.

Table 4.7. Percent Distribution of Respondents by Depression and Anxiety Symptoms, Southern Leyte, Philippines, 2009.

Psychiatric Symptoms	Southern Leyte		
	Most Affected	Least Affected	Total
n=	<b>200</b>	<b>200</b>	<b>400</b>
Percent Anxiety symptoms			
With	3.0	4.5	3.8
Without	97.0	95.5	96.3
Depression symptoms			
With	0.5	1.0	0.8
Without	99.5	99.0	99.3

**Post Traumatic Stress Disorder Symptoms.** Individuals who survived a traumatic event such as a disaster can develop a severe and ongoing emotional reaction long after they are already out of danger. To gauge whether the respondent experience symptoms of PTSD, the Post Traumatic Stress Disorder Civilian Checklist (PCL-C), a 17-item screening instrument for assessing PTSD in the general population, was used. Responses to the PCL-C ranged from 1-not at all, 2-a little, 3-moderately, 4-quite a bit, and 5-extremely. A sum score of 50 or more for all 17 items suggest PTSD (Weathers et al., 1993).

Table 4.8 shows that less than 3.0 percent of the respondents in Southern Leyte manifest symptoms of PTSD. Between areas however, there were more respondents from most affected areas shows symptoms of PTSD compared to their counterparts in least affected areas.

The 17 items of the PCL-C can be further subdivided into three broad categories: intrusion (4 items), avoidance (8 items), and arousal (5 items) for which an average symptom score of at least 3.0 or higher means that a symptom exist.

Avoidant symptoms are ways in which the person tries to avoid anything associated with the traumatic event. These symptoms may also include a “numbing” effect, where the person’s general response to people and events is deadened.

Table 4.8 shows that 5.8 percent of the respondents manifest symptoms of intrusion, 5.0 percent of arousal, and 2.0 percent of avoidance. As might be expected, far more respondents from the most affected areas reported experiencing symptoms of the three broad categories of PTSD symptoms.

Table 4.8. Psychiatric Symptoms Experienced, Southern Leyte, Philippines, 2009.

Psychiatric Symptoms	Southern Leyte		
	Most Affected	Least Affected	Total
n=	<b>200</b>	<b>200</b>	<b>400</b>
Percent exhibiting symptoms of:			
Intrusion	8.5	3.0	5.8
Avoidance	3.5	0.5	2.0
Arousal	6.5	3.5	5.0
Percent exhibiting PTSD	4.5	0.5	2.5

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