

THE IMMEDIATE RESPONSE TO THE JAVA TSUNAMI:  
PERCEPTIONS OF THE AFFECTED

Fritz  
Institute

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# INTRODUCTION

On July 17, 2006 at 3:24pm, a 7.2 magnitude earthquake struck off of the Indonesian coast. Twenty minutes later the earthquake triggered a tsunami along a 110-mile stretch of Java's southern coast. Waves more than six feet high reached as far as two kilometers inland, destroying scores of houses, restaurants and hotels. According to the National Disaster Management Coordinating Board of Indonesia (BAKORNAS), the tsunami resulted in 637 deaths as well as 167 missing, 543 injured, and 50,756 displaced members of the community.

Despite having received bulletins from both the Pacific Tsunami Warning Center in Hawaii and the Japan Meteorological Agency twenty minutes before the first wave struck, Indonesian government officials reportedly did not publicize the emergency in hopes of avoiding any unnecessary panic. Although warnings were eventually issued via text messages to district heads and mayors approximately seven minutes before the tsunami, the window of time was too short for those leaders to alert local communities.<sup>1</sup>

Indonesia lies on the "Pacific Ring of Fire", the most seismically active area of the world, frequented by earthquakes and volcanic eruptions. According to the US Geological Survey, the country of Indonesia is home to the greatest number of earthquakes worldwide. The majority of seismic activity in the area takes place under the ocean where the tectonic plates collide, sometimes generating a tsunami.

The bulk of this particular tsunami's destruction occurred in the West Java province in the Ciamis regency<sup>2</sup>, which lies approximately 400 kilometers south of Indonesia's capital of Jakarta (Map 1) and whose coastline consists mostly of beach resorts and fishing villages that were unaffected by the 2004 South Asia tsunami. Directly to the east, the Cilacap regency in the Central Java province was also severely damaged. The tsunami-affected areas are only a few hundred miles from the vicinity devastated by the Java earthquake, which had struck less than two months prior and left more than 6,000 dead.

Map 1



Source: United Nations Office for the Coordination of Humanitarian Affairs: Relief Web

<sup>1</sup> As a result of the 2004 South Asia tsunami, Indonesia's island of Sumatra installed a tsunami warning system, but the system was not scheduled to be extended to Java until 2007. ("Indonesia Quake Toll Surpasses 100". 2006, July 17. Retrieved April 1, 2007 from <http://www.cnn.com/2006/WORLD/asiapcf/07/17/indonesia.earthquake/index.html>.)

<sup>2</sup> A "regency" is defined as a government area between a province and a district.

## METHODOLOGY

Continuing our investigations of the perceptions and opinions of people affected by natural disasters worldwide, Fritz Institute and its research partner, TNS Indonesia, surveyed more than one hundred people affected by the Java tsunami.<sup>3</sup> As trained research teams were already on the island to assess the humanitarian impact of the May 2006 earthquake, the research was able to commence *within one week* of the occurrence of the tsunami. The timing provided the researchers a unique opportunity to immediately tap into the perceptions of assistance provided by various relief actors. Replicating the approach of previous surveys, respondents were asked about the damage and loss suffered, perceptions of aid needed and aid received, providers of aid, and their satisfaction with the timeliness and adequacy of the assistance. Where possible, five-point Likert scales were used.

The sample was comprised of 123 individual respondents, each representing households from twenty-four villages in the two regencies most impacted by the Java tsunami, Cilacap and Ciamis. Within each regency two districts were identified to participate in the research: Binangun and Adipala in Cilacap and Pangandaran and Sidamulih/Parigi in Ciamis. The sample size in each district was determined according to the extent of the population affected by the disaster, covering both urban and rural areas, and the respondents were identified using a random selection procedure.

Data was collected through face-to-face interviews in the local language by teams of trained interviewers from the area using a structured questionnaire. The survey respondents represented both male and female adult household members for whom the mean age of the respondents was 40.8 years (See Table 1). All the respondents were Muslim and the literacy level among the respondents surveyed was high, with 89% reporting that they could read and write. Over half of the sample reported having a family member suffer injury or death as a result of the tsunami (See Table 2).

Prior to the disaster, the main sources of income for survey respondents in the affected areas were farming and plantation labor, petty trade, and fishing and allied activities. About 37% of the survey respondents were engaged in farming activities, 20% as farm or plantation laborers on others' lands and another 17% in the cultivation of their own land. Forty-five percent (45%) of the affected households surveyed had a monthly family income of below 700,000 Indonesian Rupiah (approximately \$78 USD). Exploring the types of housing structure inhabited by respondents prior to the disaster shows that nearly two-thirds (64%) lived in houses or apartments constructed of wood, brick, cement, or other permanent materials, while the remaining households resided primarily in semi-permanent structures built from earth or stones.

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<sup>3</sup> Previous beneficiary research reports include studies on the 2004 South Asia tsunami, the 2005 Pakistan earthquake, and Hurricane Katrina, all of which can be found on Fritz Institute's website at <http://www.fritzinstitute.org/prgHumanitarianImpact.htm>

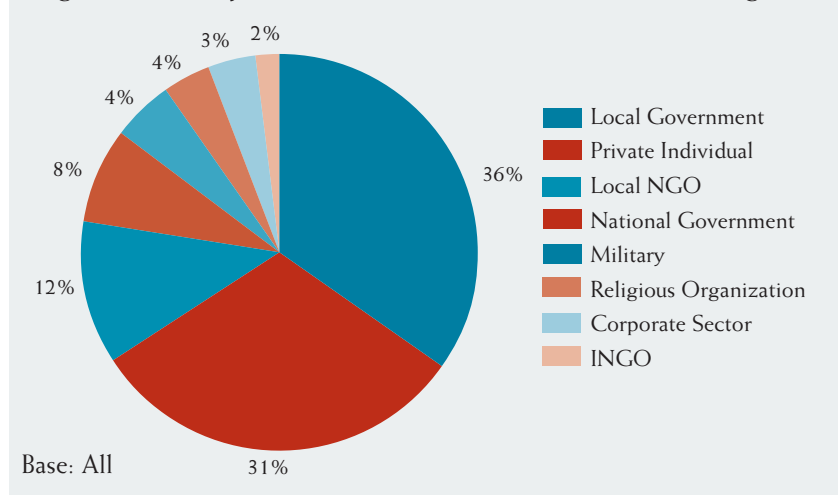
# KEY FINDINGS

## 1. The Local Government was the Predominant First Responder

An encouraging finding of the study was the rapid assistance provided to affected communities by the local government. The capacity demonstrated by the local administration may have built upon its exposure to the recent Central Java earthquake as well as the regular occurrence of other natural disasters in the geographic region. While our past surveys have identified private individuals as the primary provider of initial relief services, in this study the local government was cited as the primary provider of aid. Across all aid categories combined, the local government provided 36% of the aid in the first 48 hours (See Figure 1). Private individuals also contributed considerably with 31% of respondents citing them as their primary source for aid. Twelve percent (12%) mentioned local NGOs while 2% cited international NGOs (INGOs) as the primary provider of relief in the immediate aftermath of the disaster.

When respondents were asked to name the primary assistance provider for each type of assistance, the local government was most often associated with help with the deceased, injured, medical care, drinking water, food, and relocation (See Table 3). Individuals were cited as the major source of aid for rescue, locating missing people, livestock, shelter, and clothing. Religious organizations were the primary provider of counseling.

Figure 1: Primary Assistance Providers Across All Aid Categories

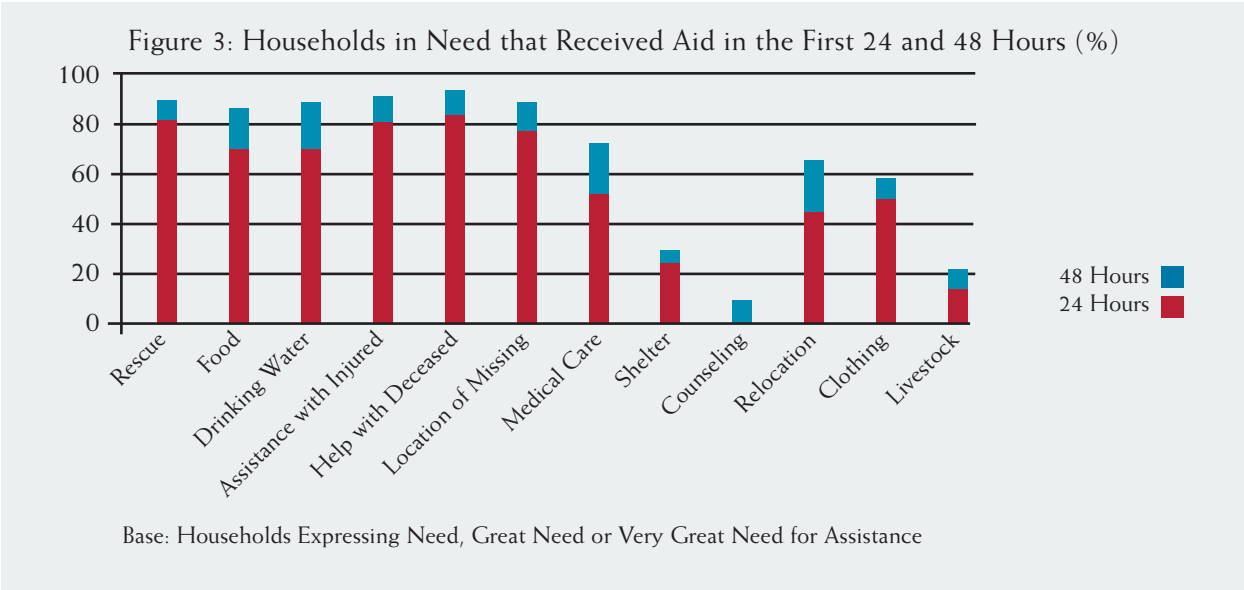
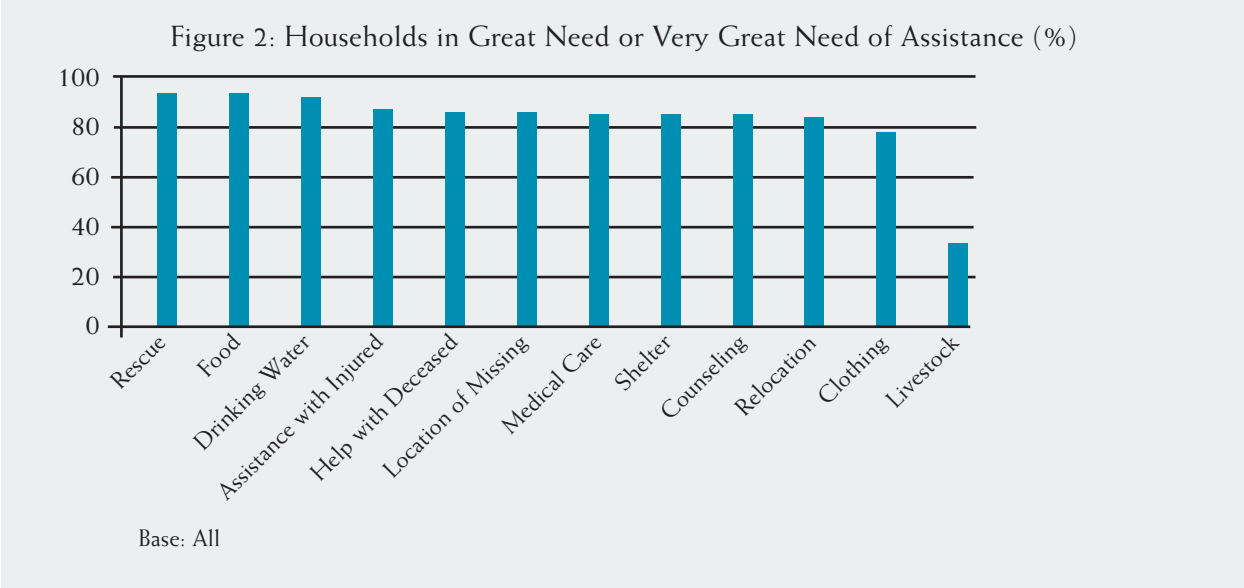


## 2. Affected Households Expected the Government to Provide Relief, and Satisfaction with Government Assistance was Generally High

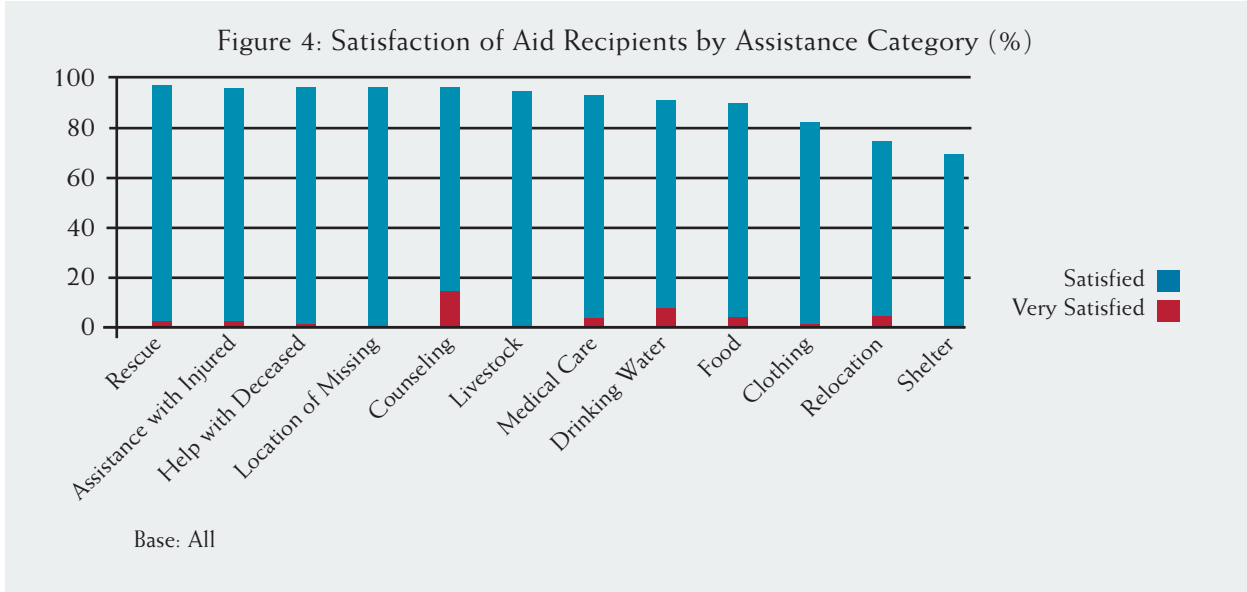
To tap into the expectations of the affected people, the survey asked respondents who they believed should be responsible for providing the supplies and services required for relief. Interestingly, all 100% said they expected the government to bear these responsibilities. To explore whether expectations were met, survey respondents were asked about their satisfaction with the aid specifically provided by the government. An overwhelming 82% indicated that they were satisfied or very satisfied. Moreover, when respondents were asked to name an outstanding provider of aid overall, over half (52%) identified the government (See Table 4). Twenty-seven percent (27%) associated the most outstanding provider with private individuals, while only 10% cited local NGOs.

### 3. Most Households Received Aid Within the First 48 Hours and were Satisfied with the Assistance

According to the affected households surveyed, the immediate response to the Java tsunami was efficient and effective. Unlike many previous disasters we have studied, most people who needed assistance after the tsunami received aid within 48 hours. More than three-quarters of those expressing a great or very great need for help with rescue, food, drinking water, the injured, the deceased, and the location of the missing (See Figure 2), received the assistance within the first 48 hours (See Figure 3).



Affected households were also asked to rank their level of satisfaction with each category of assistance on a five-point scale. Our research demonstrates that most aid recipients were satisfied with the assistance they received (See Figure 4). At 48 hours, over 90% of respondents were satisfied or very satisfied with the help received with rescue, the injured, deceased, missing, counseling, livestock, and medical care. The fact that half the households reported their housing structure completely destroyed, and shelter and relocation assistance garnered the least satisfaction among aid recipients, is noteworthy.



Similar to the findings of previous studies, the distribution of aid remained a key factor in dissatisfaction with the assistance provided. "Relief material such as clothes, sleeping equipment and tents were not evenly distributed," claimed one recipient in Sidamuliah. Of those dissatisfied with shelter assistance, the most common reason cited was the delivery process, while dissatisfaction with relocation was attributed most often to the lack of quality. Overall, when asked what aspects of aid distribution did not go well, 29% mentioned aid not being distributed evenly or fairly, 25% said lack of assistance entirely and 22% cited quantity of aid received (See Table 5). "Aid in the form of tents was very few," mentioned one respondent from Parigi. Another survey respondent from Binangun commented, "We did not get any aid material."

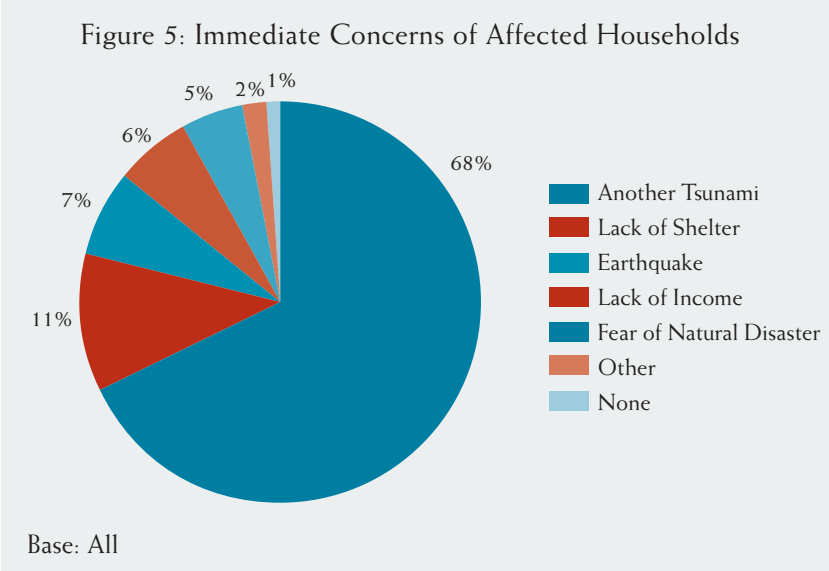
**4. Fear and Worry Plagued Many in the Aftermath of the Disaster; Religious Organizations Played a Significant Role in Counseling**

When asked about their immediate fears, the greatest apprehension expressed by 68% of respondents was the fear of another tsunami (See Figure 5), which may be associated with the fact that over half had suffered physical injuries or death within their households. In the longer term, fears about the sufficiency of income were dominant (See Table 6). One community member lamented, "Many boats and fishing nets were either lost or broken in the huge tidal waves. We want boats and fishing material to start our work again." Another respondent suggested assistance with reinstating farming activities would be helpful: "We want help in the form of food, grains and plant seeds, so that we can cultivate our lands that were broken by the wave."

Thirty-three (33%) percent were concerned about the lack of shelter in the future. This is not surprising as 61% of households surveyed were displaced from their homes, the majority of whom were living in camps. The respondents also had concerns for their children's physical (31%) and mental (23%) health (See Table 7).

After the tsunami, despite the fact that the vast majority of affected households surveyed (85%) cited a need or great

need for counseling services, the availability of psycho-social services was limited. None of those surveyed reported receiving such assistance at 24 hours and only 8% reported receiving such assistance at 48 hours. However, by the time of the survey (one week after the tsunami), counseling appeared to be more widely available, with 46% of those in need claiming to have received assistance. As noted earlier, when affected households were asked who provided counseling services, religious organizations were cited most often (43%) while 30% claimed that local government had provided such assistance. Satisfaction with counseling services was high, with 88% of those receiving assistance satisfied and 7% very satisfied. This is notable as it is the highest proportion of respondents being "very satisfied" in any aid category.





# RECOMMENDATIONS

## 1. Building Local Capacity is Critical, Particularly in Hazard-Vulnerable Areas of the World

Within 48 hours of the Java tsunami, the vast majority of affected households had received vital forms of assistance from the local government and private individuals, who comprised over two-thirds of the response. The prominent and timely response of the local government combined with the high levels of satisfaction expressed by aid recipients suggests a significant achievement in preparedness, at least for this scale of a disaster.

Looking to the future, local government authorities should recognize the life-saving role of private individuals and work towards deepening household and community-level disaster preparedness initiatives, in addition to establishing more formalized early warning systems and procedures. Only 5% of affected households surveyed asserted that they felt equipped to handle such a disaster before the tsunami struck, and only 3% reported receiving any tsunami alerts beforehand. The local government, in collaboration with community-based organizations, has an opportunity to address the fear and worry expressed by community members by empowering them through household-level disaster preparedness training and education.

The international humanitarian community needs to recognize existing local and national capacity and coping mechanisms that may be best-suited to meet the needs of communities in the aftermath of a disaster. As recommended in the Tsunami Evaluation Coalition's *Joint Evaluation of the International Response to the Indian Ocean Tsunami*, international agencies must reorient their response from supplying aid to facilitating communities' own priorities and focusing on strengthening local capacity where it is needed, particularly in disaster-prone areas of the world.<sup>4</sup> As demonstrated in the Java tsunami case, local communities expect their government to provide relief assistance, suggesting other actors should cooperate with local government authorities where possible to ensure an effective and coordinated response and to avoid duplication of efforts.

## 2. Religious Organizations Should be Recognized as an Important Source of Counseling After a Disaster

The Java tsunami study reinforces what we have seen in other disaster contexts, in which affected communities express great needs for counseling that are most often unmet. In addition to coping with the damage and losses suffered, it is clear that the trauma of natural disasters includes an ongoing fear of recurrence. According to the World Food Programme, two weeks after the tsunami more than 10,000 people whose homes were not destroyed were still living in camps, afraid to return home for fear of another tsunami.<sup>5</sup> Testimony from one of the survey interviewers described the alarmed community at the time of the interview, "During the interview, there was a big wave and people around started shouting out that there was another tsunami. Everyone was shocked and became afraid." The prominent role of religious organizations in providing psycho-social care, combined with the relatively high levels of satisfaction with the services provided, suggests the potential role religious organiza-

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<sup>4</sup> John Telford and John Cosgrave, *Joint Evaluation of the International Response to the Indian Ocean Tsunami: Synthesis Report* (London: Tsunami Evaluation Coalition, 2006), 23.

<sup>5</sup> United Nations World Food Programme. 2006, August 2. Retrieved April 1, 2007 from <http://www.reliefweb.int/rw/rwb.nsf/db900sid/EGUA-6SASMD?OpenDocument&emid=TS-2006-000087-IDN>.

tions may play in the aftermath of a disaster. Particularly in hazard-vulnerable areas, where there is a faith community present, it should be incorporated into the fabric of disaster planning.

### **3. Quality and Fairness in the Delivery of Assistance are Important to Aid Recipients in the Immediate Aftermath of a Disaster**

As in our past surveys, aid recipients after the Java tsunami voiced strong opinions about the appropriateness and adequacy of the aid provided, opinions that can inform future humanitarian relief efforts. The most prominent reason for dissatisfaction with shelter was the lack of quality. "We have not received proper tents," claimed one of the displaced. Almost one-quarter of those surveyed, when asked what aspects of aid distribution did not go well, asserted that the assistance was not being distributed evenly. For the disaster relief community this raises not only the issue of enforcing quality standards in aid provision; it also suggests that aid distribution processes should adhere to some standards to maintain an environment of fairness. Deeper engagement with affected individuals and transparent allocation procedures may mitigate impressions of unfairness in goods and services provided.

## APPENDIX: TABLES AND GRAPHS

Table 1: Sample Characteristics

	All	Binangun	Adipala	Pangandaran	Sidamulih/Parigi
Number of Respondents	123	25	26	36	36
Male (%)	53	48	54	56	53
Primary Occupations Prior to Tsunami	Petty Business Trade (26%)	Farmer (36%)	Farm Worker (46%)	Fishing/Allied Activities (50%)	Petty Business Trade (44%)
	Fishing/Allied Activities (20%)	Farm Worker (28%)	Farmer (31%)	Petty Business Trade (31%)	Family Trade (25%)
	Farm Worker (20%)	Petty Business Trade (20%)	Fishing/Allied Activities (15%)	Farmer (8%)	Farm Worker (17%)
Mean Age	40.8	40.8	40.7	41.4	40.3
Literacy Level (%)	89	84	73	100	94
Income (%)					
Less than 500k IDR	15	24	39	0	8
500k-700k	30	36	46	25	19
700k-2000k	51	40	15	69	67
2000k+	4	0	0	6	6
Education (%)					
Less than 5 Years	78	82	73	89	68
6-12 Years	20	19	26	9	33
Greater than 12 Years	1	0	0	3	0
Muslim (%)	100	100	100	100	100

Table 2: Record of Damage and Loss After the Tsunami (%)

	All	Binangun	Adipala	Pangandaran	Sidamulih/Parigi
Injury or Death in Family	52	48	69	50	44
Loved One(s) Missing	15	12	23	8	17
Homes					
Destroyed Completely	50	4	8	89	72
Suffered Severe Damages	4	0	0	8	6
Location					
Same Location as Before Tsunami	39	96	92	0	0
Camp Within Village	55	0	0	100	88
Camp Outside Village	2	0	4	0	3
Home of Family/Friends Within Village	3	4	4	0	6
Home of Family/Friends Outside Village	1	0	0	0	3

Table 3: Principal Group Helping with Aid According to Affected Households

Type of Aid	1st Group	2nd Group
Medical Care	Local Government (66%)	Corporate Sector (11%)
Help with Deceased	Local Government (43%)	Private Individual (36%)
Assistance with Injured	Local Government(42%)	Local NGO (33%)
Relocation	Local Government (39%)	Private Individual (24%)
Drinking Water	Local Government (35%)	Private Individual (31%)
Food	Local Government (33%)	Private Individual (29%)
Livestock	Private Individual (75%)	National Government (12%)
Shelter	Private Individual (62%)	Local Government (14%)
Rescue	Private Individual (51%)	Local Government (18%)
Location of Missing	Private Individual (38%)	Local Government (33%)
Clothing	Private Individual (34%)	Local Government (25%)
Counseling	Religious Organization (43%)	Local Government (30%)

Base: All

Table 4: Most Outstanding Provider According to Affected Households (%)

Type of Provider	All	Binangun	Adipala	Pangandaran	Sidamulih/ Parigi
Government	52	40	42	52	67
Private Individual	27	44	31	15	25
Local NGO	10	8	4	17	8
Religious Organization	6	0	15	8	0
Corporate Sector	5	8	8	8	0

Table 5: Aspects of Aid Distribution that Did Not Go Well According to Affected Households (%)

	All
Uneven or Unfair Distribution	29
No Aid Provided	25
Insufficient Aid	22
Timeliness	19
Lack of Coordination	3
Complicated Process	2

Base: All

Table 6: Concerns for the Future of Affected Households (%)

	All	Binangun	Adipala	Pangandaran	Sidamulih/Parigi
Lack of Income	40	47	28	64	20
Lack of Shelter	33	0	0	33	64
Another Tsunami	22	40	67	3	14
Other	5	13	5	0	2

Table 7: Affected Households' Concerns for their Children (%)

	All
Health Problems	31
Trauma/Need for Counseling	23
Lack of Educational Equipment	15
Education	10
Lack of Playing Ground	6
Fear of Natural Disaster	4
Lack of Nutritious Food	2
Lack of Money for Needs	1
None	8

Base: All