

Communities' Awareness and Perception of Natural Hazards in Jimma Zone, Southwest Ethiopia

Project Team

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Project Summary

Background: Natural and human-induced hazards and associated disasters continue to pose a serious threat to Ethiopia, mainly because of widespread vulnerability and climate change. The most common hazards affecting the country are drought, floods, landslides, human and animal diseases, pests, earthquakes, and urban and forest fires. The purpose of this study was to assess the level of awareness of rural communities of the most common hazards and the communities' perceptions of their risk, vulnerability, and resilience.

Methods: The study employed a community-based cross-sectional survey. Both quantitative and qualitative data were collected. A sample of 661 household heads was interviewed using an interviewer-administered structured questionnaire. Ten key informants were also interviewed using interview guides. Descriptive statistics were computed. Summary values such as mean, median, and percentages were used to summarize data and presented in tables and figures. Bivariate analysis was computed to explore associations between dependent and independent variables, and multivariate analysis was done to determine independent predictors of the dependent variables. Qualitative data were analyzed thematically and used to triangulate the quantitative findings.

Results: A total of 661 participants responded to the questionnaire, for a response rate of 82%. Most (85.5%) of the respondents were aware of at least one disaster/hazard. Family or friends were the main sources of information about disaster (42.2%), followed by radio (35.9%) and health extension workers (8.4%). More than 36% of the respondents reported that their localities were vulnerable to one or more natural or man-made disasters. Flooding, car accidents, and disease outbreaks were the most frequently reported disasters/hazards, with flooding mentioned by 66.2% of the study participants. Respondents' age and training on disaster were found to be associated with their level of awareness. Respondents 50 years and older were 3.6 times more likely to be aware of disasters than respondents 18 to 24 years old. Respondents who had attended short training on disaster were twice as likely to be aware of the most common disasters/hazards as those who had not.

Conclusions: The level of awareness of rural communities of common natural and man-made disasters was high. However, their level of preparedness for future disasters was low. Most of the community members had been affected by disaster at least once. It is recommended that responsible government and non-governmental organizations design and implement interventions to improve communities' preparedness.

1 Introduction

Natural and human-induced hazards and associated disasters pose a serious threat to Ethiopia, mainly because of widespread vulnerability and climate change. The most common hazards affecting the country are droughts, floods, landslides, human and animal diseases, pests, earthquakes, and urban and forest fires. The purpose of this study was to assess the awareness of rural communities of the most common hazards and the communities' perception of their risk, vulnerability, and resilience.

The study was conducted in Jimma Zone southwest of Addis Ababa, the capital. The zone is bordered on the south by the Southern Nations, Nationalities, and Peoples Region (SNNPR), on the northwest by Illubabor Zone, on the north by East Welega Zone, and on the northeast by West Shewa Zone. According to a 2007 census, the population of the zone was 2,486,155, of which 89.69% was rural (CSA 2007). The temperature ranges from 12° to 25° C, and the average annual rainfall is 1,800–2,300 mm.

The objectives of the research were to 1) describe the common natural disasters faced by the rural inhabitants of Jimma Zone, 2) assess communities' knowledge and perception of common hazards/disasters, 3) identify their experience of these disasters and their coping mechanisms, and 4) assess the factors affecting their knowledge and perception of common hazards/disasters.

2 How Did You Go about Achieving the Outputs/Outcomes?

This study was a community based cross-sectional survey. A multi-stage sampling technique was used to select 661 household heads living in rural areas of Jimma Zone. In the first stage, three out of the 17 districts in the zone were selected by lottery. Five kebeles¹ were then chosen from each district, for a total of 15 kebeles. Households per kebele were allocated proportionally to population (household) size (PPS). Households were selected from each kebele using systematic random sampling, and household heads were approached for interview.

Quantitative data from household heads were collected using a structured questionnaire pretested among 5% of the sampled households. The questionnaire had three parts. The first part included questions about the socio-economic and demographic characteristics of respondents. The second part included questions related to perception and awareness of common natural hazards, their underlying causes, and the communities' perceived vulnerability to the hazards. The last part of the questionnaire included questions about coping mechanisms the communities had adopted to mitigate the impact of common natural hazards. The questionnaire was prepared in English, translated into Afan Oromo and Amharic, and back-translated into English by a different translator to ensure consistency. Ten data collectors and two supervisors with previous survey experience were recruited and trained on the data collection tool and procedures. Supervisors and investigators monitored the data collection process.

The quantitative data were edited manually immediately after collection. They were then coded and entered into Epi-data and exported to SPSS 20 software. After data cleaning, descriptive statistics were computed and summary values such as frequency, percentage, mean, and median were computed to describe the study findings. The results were presented using frequency tables and graphs. Bivariate analysis was employed to explore the association between each exposure versus outcome variable. To control for the effect of confounding factors or to obtain independently associated variables, each variable that was statistically significant at p -value < 0.2 in bivariate analysis was entered into a backward stepwise multiple logistic regression model. P -value < 0.05 was considered statistically significant for all the independent variables in the final model.

¹ The smallest administrative unit of Ethiopia, part of a woreda, or district, which is usually part of a zone.

To supplement the quantitative findings, qualitative data were collected from experts at the Jimma Zone Early Warning and Preparedness Office, zonal and district Agriculture and Health Office staff, local administrators, and nongovernmental organizations working in disaster preparedness. Seven key informants were interviewed to explore common natural hazards and community risks and vulnerabilities. An interview guide was developed to guide the key informant interviews, which were conducted by researchers with experience in qualitative data collection and analysis.

Qualitative data obtained from key informant interviews were transcribed from audio records by facilitators. The transcripts were then exported to ATLAS.ti 4.1 software for coding and analysis. Thematic analysis was used to summarize key findings on major themes. Two research sub-teams worked independently to analyze the qualitative data, and their reports were synchronized jointly in the final report. Data were triangulated to enhance the credibility of the results.

Ethical clearance was obtained from the Jimma University Ethical Review Board. Support letters were secured from the Zonal Administrative Office and District Administrative Offices. Data collectors explained the objectives of the study and obtained verbal consent from survey respondents and key informants. Confidentiality of the data was ensured.

A workshop was held to disseminate the study findings and recommendations to relevant officials from government and nongovernmental organizations and other stakeholders working in disaster preparedness.

3 What Did You Learn?

Most of the respondents (85.5%) reported that they were aware of natural disasters/hazards. Flooding was the most commonly mentioned natural disaster/hazard, reported by 66.2% of respondents, followed by fire (61.2%), drought (51.2%) and disease outbreaks (45.3%). Among manmade hazards, car accidents were the most commonly mentioned (25.7%). A few respondents mentioned electrical accidents and war.

More than 36% of the respondents reported that their localities were prone to one or more natural or man-made disasters, including flooding (35.5%), fire (27.8%), and disease outbreaks (24.5%). Car accidents were reported as the most frequent disaster, followed by flooding. Disease outbreaks, earthquakes, landslides, and fires were reported as rare. Nearly one-half (48.0%) of the respondents had experienced at least one natural or man-made hazard/disaster. The most commonly experienced disasters/hazards were flooding (51.0%), disease outbreaks (41.7%), fire (39.2%), drought (32.5%), car accidents (30.7%), and earthquakes (22.3%).

The major sources of information on natural and man-made hazards were family or friends (42.2%), followed by radio (35.9%) and health extension workers (8.4%). Asked about training on hazards or disaster-specific issues, 19.6% of the study participants reported that

they had participated in such training, lasting from 1 to 15 days. The most common training topics were disaster preparedness (51%), common hazards/disasters (27 %), what to do in a disaster (10%), and disaster mitigation (3%).

The majority (62.4%) of the study participants said that deforestation was the cause of drought, while 36.7% attributed it to climate change and 34% interpreted it as God's punishment. Asked about early warning signs of drought, 53.6% mentioned decreased rainfall and irregular rainfall, 68.2% mentioned high temperatures, and a few mentioned strong wind, dry vegetation, and cold weather. Asked about the cause of disease outbreaks, 80% mentioned poor environmental hygiene; 61% mentioned poor personal hygiene; nearly 10% mentioned failure to be vaccinated, food shortages, and lack of clean water; while 22% interpreted disease outbreaks as God's punishment.

4 Immediate Impact

The research project created a knowledge sharing environment for research team members and all who participated directly or indirectly. It provided practical knowledge in the field and created an opportunity to work in a team and share knowledge and skills. The research also strengthened collaboration between Jimma University and other organizations in Jimma Zone, including the Ethiopian Red Cross Society (ERCS) of Oromia Region, the Jimma Zone Branch Office, the Jimma Zone Disaster Prevention and Preparedness Office, and other government offices.

5 Future Impact

The project findings on disaster awareness and experience of rural communities will be disseminated to relevant actors/stakeholders who are involved in disaster preparedness and response to improve their understanding of associated community awareness factors. The results will help planners and implementers design appropriate projects to address gaps in awareness and disaster preparedness and serve as a resource for researchers in the future.

6 Conclusions

The level of awareness of rural communities about common natural and man-made disasters was high, but their level of preparedness for future disasters was low. Most community members had been affected by disaster at least once. The most commonly cited natural disaster was flooding, and the most commonly cited man-made disaster was car accidents. Respondents' age and participation in short term-training on disaster were associated with their level of awareness.

7 Implications for the Future

The research project provided baseline information about the awareness of the community of disaster and their level of preparedness. This information can be used by different government and non-governmental organizations in the locality to design appropriate projects to improve community disaster awareness and preparedness. If funding is available, the research team, together with the Ethiopian Red Cross Society and other key stakeholders, can design interventions based on the research output to improve communities' level of awareness and preparedness.

9 Publications

The research output will be submitted to a peer-reviewed journal for peer review to contribute to the body of knowledge related to disaster preparedness and response.

References

Central Statistical Agency, Ethiopia. (2007). Population and housing census report Country 2007–2010. Addis Ababa: CSA.

Appendix 1. Structured Questionnaire

JIMMA UNIVERSITY

Structured Questionnaire

Informed Consent Form

Instruction: Read and give a copy of the full information sheet to the participants.

Good morning/good afternoon! My name is _____ and I am working for Jimma University. Researchers from Jimma University are conducting an applied research on Disaster Preparedness and Response in collaboration with the Ethiopian Red Cross Society (ERCS) Oromia Region, Jimma Zone Branch Office. The purpose of the study is to assess communities' awareness and perception towards natural hazards in Jimma zone, southwest Ethiopia. So, I am serving as a field researcher to collect the required data from selected health facilities and Woreda Health Offices.

You are one of the eligible participants for this interview which may take around 20 minutes. You do not have to take part in this research if you do not wish to do so or with draw at any time after starting the interview, and refusing to participate will not affect you in any way. If you feel uncomfortable about sharing any of the information, you have the right to decide not to answer any question. This will not result in you being treated differently during the study or any other time. The information provided in this study is strictly confidential.

This research has been reviewed and approved by Jimma University Ethical Review Committee. If you have any questions about your rights or any as a research participant, you may contact the Principal Investigator, Professor Kifle Woldemichael; Telephone number +251935123168.

Therefore, do you agree to participate in this discussion? Yes _____ No _____

If yes, continue interviewing but if no, say thank you and go to next.

Structured Questionnaires to Assess Communities Awareness and Perception of Natural Hazards in Jimma Zone, Southwest Ethiopia

Part 1: Socio-demographic and economic information

Questionnaire ID _____

Woreda _____

Kebele _____

Village _____

Instruction: Fill in/circle answers to the following questions:

S. no.	Item	
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101	Age in years	-----
102	Sex	1. Male 2. Female
103	Marital status	1. Single 2. Married 3. Widowed 4. Other (specify) _____
104	Educational level	1. Illiterate 2. Read and write 3. Literate, grade completed _____
105	Ethnicity	1. Oromo 2. Amhara 3. Yem 4. Other (specify) _____
106	Religion	1. Muslim 2. Orthodox 3. Protestant 4. Other (specify) _____
107	Occupation	1. Farmer 2. Merchant 3. Government employee 4. Other (specify) ____
108	Annual income in ETB	_____
109	Livelihood	1. Agrarian 2. Semi-pastoralist 3. Pastoralist 4. Other (specify) _____

Part II: Knowledge and perception about natural disaster

Instruction: Fill/circle answers of the following questions

201	Do you have information about natural and man-made disasters?	1. Yes 2. No 3. I don't know
202	If yes, could you mention some of the natural and man-made disasters you know? (Probe)	1. Drought 2. Earthquake 3. Flood 4. Fire 5. Disease outbreak 6. Other (specify) _____
203	If yes to Q201, from where did you get your information about disasters?	1. Health extension workers 2. Development agents 3. Radio 4. Families/friends 5. Others (specify) _____
204	Have you been given any training about disaster? (Probe.)	1. Yes 2. No 3. I don't know
205	If yes, for how many days did you get the training?	_____ days
206	If yes, what was the topic? (More than one response is possible)	1. Common disasters 2. Disaster preparedness 3. What to do in time of disaster 4. Disaster mitigation 5. Other (specify) _____

207	Do you think your place of residence is prone to any of the natural and man-made disasters you heard?	1. Yes 2. No 3. I don't know
208	In your opinion, which of the following natural or man-made disasters occur in your community?	1. Drought 2. Earthquake 3. Flood 4. Fire 5. Disease outbreak 6. Other (specify) _____

209. Rate how frequently the following disasters occur in your locality:

(Fill 1= for 'frequently', 2= for 'sometimes', 3= for 'rarely', 4=for 'none')

No	Disaster type	Rate			
		Frequently	Sometimes	Rarely	None
209.1	Drought				
209.2	Disease outbreaks/epidemics				
209.3	Floods				
209.4	Earth quake				
209.5	Land slide				
209.6	Fire Accident				
210	In your opinion what is the cause of drought? (multiple answers are possible)	1. God's punishment 2. Climate change 3. Deforestation 4. Other (specify) _____ 5. I don't know			
211	In your opinion, what are the early warning signs of drought?	1. Decrease rainfall 2.High temperature 3. Unpredictable rain 4. Other (specify) _____			
212	What are the common negative effects of drought in your locality	1. Food shortage 2. Livestock death 3. Drinking water shortage 4. Other (specify) _____ 5. I don't know			
213	Did you perceive any change in the climate of your locality in the last 10 years?	1. Not changed 2. Changed negatively 3. Changed positively 4. I don't know			
214	In your opinion, what causes epidemics/outbreaks?	1. God's punishment 2. Poor personal hygiene 3. Poor environmental sanitation 4. Lack of EPI services (immunization) 5. Other (specify) _____			
215	Did you perceive any change in the rainfall of your locality in the last 10 years?	1. Not changed 2. Increased 3. Decreased 4. I don't know			
216	Did you perceive any change in temperature of your locality in the last 10 years?	1. Not changed 2. Increased 3. Decreased 4. I don't know			

Part 3: Experience and coping mechanism towards natural disaster

Instruction: Fill/circle answers of the following questions

301	Did you have previous experience of a natural or man-made disaster?	1. Yes 2. No 3. I don't remember
302	If yes, list the types of natural disasters you have experienced	1. Drought 2. Earthquake 3. Flood 4. Fire 5. Disease outbreak 6. Other (specify) ____
303	How do you rate the severity of the occurred disaster? (Write the type and its degree of severity if more than one disaster has occurred.)	1. Mild 2. Moderate 3. Severe
304	Any physical damage due to any of the disasters in you or your family	1. No 2. Loss of house 3. Loss of cattle/economic loss 4. Loss of human life 5. Other (specify) _____
305	Any psychiatric problem due to any of the disasters in you or your family?	1. Yes 2. No
306	If yes, what?	1. Depression 2. Nightmare 3. Flashback 4. Difficulty of sleeping 5. Other (specify)____

307. What actions did you take during the last emergency? (May include requesting assistance from an emergency response service)

308. How did you cope with the disaster?

309. Did you participate in any natural disaster prevention (prevention, recovery, assisting other people)? Explain how.

310. Are you ready to cope with the negative impacts of disasters in the future? 1. Yes 2. No

311. If yes, how?

Thank you for your time!!!

Yuunivarsiitii Jimmaa Guca Gaafannoo

Guca fedhii/eeyyama hirmaannaa kan gaafatamaa irraa fudhatamu

Qajeelfama: Odeeffannoo guutuu armaan gadii dubbisii gaafatamaaf kenni

Akkam bultan/ooltan! Maqaan koo_____kan jedhamu yoo ta’u, hojjataa Yuunivarsiitii Jimmaati. Qorattoonni Yuunivarsiitii kanarraa “qophii otoo balaan uumamaa/nam-tolchee hin argamin taasifamuu fi balaa kanneen erga nama mudatee booda ejjannoo/tarkaanfii fudhatamu” ilaalchisee waajjira damee qaxxaamura diimaa hawaasa Itiyoophiyaa, kan naannoo Oromiyaa Godina Jimmaatti argamu wajjiin qorannoo geggeessaa jiru. Kaayyoon qorannoo kanaas hubannoo fi ilaalcha hawaasni Godina Jimmaa kan Kibba-lixaa Itiyoophiyaatti argamu balaa uumamaa irratti qabu qorachuu dha. Kanaafuu, ani ragaa barbaachisu manneen yaalaa filatamii fi Waajjiroota Eegumsa Fayyaa Aanalee irraa funaana.

Ati immoo gaaffilee kanneen deebisuuf namoota ulaagaa guutan keessaa tokko dha. Gaaffilee kanas deebistee xumuruuf hamma daqiiqaa 20 sitti fudhata. Gaafiilee armaan gadii kanatti hirmaachuu yoo hin feene dirqama hin qabdu yookaan erga deebii kennuu jal-qabdeen boodas gaafii deebisuu hin barbaanne deebisuu dhiisuu ni dandeessa. Gaafii kana deebisuu dhiisuun kee ammas ta’ee yeroo biroos kallattii kamiinuu si hin miidhu. Odeeffannoo ati naaf kennitu iccitiin isaa eegama dha.

Qorannoon kun “koree xiinxaltuu safuu” kan Yuunivarsiitii Jimmaatiin xiinxallamee sakkoon/safummaan isaa ragga’ee jira. Atis akka hirmaataa qorannoo kanatti waa’ee mirga keetiis ta’ee kan biroo Odeeffannoo dabalataa yoo barbaadde, qorataa muummee kan ta’an, qorataa mata-duree ta’e Piroofeesara Kiflee Woldamikaa’el lakkooofsa moobaayilaa +251935123168 fayyadamtanii kallattiidhaan qunnamuu ni dendeessu. Kanaafuu, qorannoo kana irratti hirmaachuuf ni barbaaddaa?

Eeyyee___Lakki_____

Eeyyee yoo ta’e, gaafii gaafachuu itti fufi. Yoo Lakki ta’e, galatoomaa jedhii gara gaafatamaa itti aanutti darbi.

Guca gaafii kan hubannoo fi ilaalcha hawaasni Godina Jimmaa kan Kibba-lixaa Itiyoophiyaatti argamu balaa uumamaa fi nam-tolchee irratti qabu ilaalchisee qorachuuf haalaan qophaa’e.

Kutaa I: Odeeffannoo hawaas-naannoo fi diinagdee

Lakkoofsa gucaa kan addaa _____

Aanaa _____

Ganda _____

Village _____

Araddaa _____

Qajeelfama: Gaafilee armaan gadii barreessuun yookaan irra-maruun deebisi

T/La kk.	Gaafii	Deebii
101	Umrii waggaadhaan	-----
102	Saala	1. Dhiira 2. Dubra
103	Haala gaa'ilaa	1. Kan hin fuune/kan hin heerumne 2. Kan fuudhe/kan heerumte 3. Kan abbaan manaa irraa du'e/kan haati manaa jalaa duute 4. Kan biroo (adda-baasii barreessi)_____
104	Sadarkaa barumsaa	1. Kan hin baranne 2. Kan dubbisuu fi barreessuu danda'u 3. Kan barate/tte, kutaa xumure/te barreessi_____
105	Gosa/sanyii/qomoo	1. Oromoo 2. Amaaraa 3. Yeem 4. Kan biroo (adda-baasii barreessi)_____
106	Amantii	1. Musliima 2. Ortoodoksii 3. Pirootestaantii 4. Kan biroo (adda-baasii barreessi)_____
107	Dalagaa	1. Qotee-bulaa 2. Daldalaa 3. Hojjataa mootummaa 4. Kan biroo (adda-baasii barreessi)_____
108	Galii waggaa qarshii Itiyooophiyaatiin	_____
109	Haala jireenyaa	1. Qonnaan bulaa 2. Qotee-horsiisee bulaa 3. Horsiisee bulaa 4. Kan biroo (adda-baasii barreessi)_____

Kutaa II: Hubannoo fi ilaalcha hawaasni balaa uumamaa fi nam-tolchee irratti qabu ilaalchisee

Qajeelfama: Gaafilee armaan gadii barreessuun yookaan irra-maruun deebisi

201	Waa'ee balaa uumamaa fi nam-tolchee ilaalchistee wanti beektu jiraa?	<ol style="list-style-type: none"> 1. Eeyyee 2. Lakki 3. Hin beeku
202	Yoo deebiin gaafii 201 Eeyyee ta'e, balaa uumamaa fi nam-tolchee muraasa ta'an naaf tarreessuu dandeessaa? (sirritti qorii gaafadhu)	<ol style="list-style-type: none"> 1. Balaa caamaa/ongee 2. Balaa sochii/dhoqdhoqa 3. Balaa galoo/Lolaa hamaa 4. Balaa ibiddaa 5. Balaa weerara dhukkubaa 6. Kan biroo (adda-baasii barreessi)_____
203	Yoo deebiin gaafii 201 Eeyyee ta'e, waa'ee balaa uumamaa fi nam-tolchee ilaalchisee odeeffannoo eessaa argatta?	<ol style="list-style-type: none"> 1. Hojjattoota eekisteenshiinii fayyaa irraa 2. Qondaala/abbaanaa/raayyaa misoomaa irraa 3. Raadiyoo irraa 4. Maatii/Hiriyyaa koo irraa 5. Kan biroo (adda-baasii barreessi)_____
204	Waa'ee balaa uumamaa fi nam-tolchee ilaalchisee leenjii siif kenname jiraa? (sirritti qorii gaafadhu)	<ol style="list-style-type: none"> 1. Eeyyee 2. Lakki 3. Hin beeku
205	Yoo deebiin gaafii 204 Eeyyee ta'e, waa'ee balaa uumamaa fi nam-tolchee ilaalchisee leenjii guyyaa meeqaaf leenjifante?	Guyyaa_____
206	Yoo deebiin gaafii 204 Eeyyee ta'e, mata-dureen leenjichaa maal ture? (deebii tokkoo ol-ta'e deebisuun ni ta'a)	<ol style="list-style-type: none"> 1. Balaa bebbeekamoo/waliigalaa ilaalchisee 2. Qophii duraa kan balaa ittisuuf godhamu ilaalchisee 3. Yeroo balaan argame maaltu akka hojjatamu ilaalchisee 4. Erga balaan argamee booda ejjannoo fudhatamu ilaalchisee 5. Kan biroo (adda-baasii barreessi)_____
207	Bakki jireenya kee balaa uumamaa fi nam-tolcheetti kan saaxilame jettee yaaddaa?	<ol style="list-style-type: none"> 1. Eeyyee 2. Lakki 3. Hin beeku

208	Akka ilaalcha keetti, balaa uumamaa fi nam-tolchee armaan gadii keessaa kamtu hawaasa kee keessatti argame/uumame?	<ol style="list-style-type: none"> 1. Balaa caamsaa/hongee 2. Balaa sochii/kirkira/dhoqdhoqa lafaa 3. Balaa galoo/lolaa hamaa 4. Balaa ibiddaa 5. Balaa weerara dhukkubaa 6. Kan biroo (adda-baasii barreessi)_____
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Balaan uumamaa/nam-tolchee naannawa keeti ta’an yeroo/si’a/al meeqaaf akka ta’an/mudatan tarreessi

T/ Lakk.	Gosa balaa	Yeroo/si’a/al meeqaaf			
		Yeroo baay’ee	Yeroo tokko tokko	Yeroo muraasa	Takkallee hin taane/hin mudanne
209.1	Caamsaa/hongee				
209.2	Weerara dhukkubaa				
209.3	Galoo/lolaa hamaa				
209.4	Sochii/dhoqdhoqa lafaa				
209.5	Jigoo/mucuca lafaa				
209.6	Balaa ibiddaa				
210	Akka yaada keetti, caamsa/hongee kan fidu maal? (deebiin baay’een ni danda’ama)	<ol style="list-style-type: none"> 1. Adabbii waaqaatiin/Rabbiitiin 2. Jijiirama haala qilleensaatiin 3. Bosona ciruudhaan/gubuudhaan 4. Kan biroo (adda-baasii barreessi)_____ 5. Hin beeku 			
211	Akka yaada keetti, mallattooleen jalqabaa/duraa caamsaa/hongee akeekkachiisan/mul’isan maal fa’i?	<ol style="list-style-type: none"> 1. Hammi roobaa hir’achuu 2. Hoo’ina qilleensaa ol’aanaa ta’uu 3. Rooba haalli isaa raagamuu hin dandeenye 4. Kan biroo (adda-baasii barreessi)_____ 			
212	Naannawa keetti miidhaan caamsaa/hongee bebbeekamoon maal fa’i?	<ol style="list-style-type: none"> 1. Hanqina nyaataa 2. Du’a horii/loonii 3. Hanqina bishaan dhugaatii 4. Kan biroo (adda-baasii barreessi)_____ 5. Hin beeku 			

213	Naannawa keettiw aggoota 10 darban keessatti jijjiirama haala qilleensaa irratti wanti hubatte/argite/teejjabde jiraa?	<ol style="list-style-type: none"> 1. Jijjiiramni wayiituu hin jiru 2. Jijjiirama gaarii hin taane 3. Jijjiirama gaarii 4. Hin beeku
214	Akka yaada keettii, weerara dhukkubaa kan fidu maal fa'i? (deebiin baay'een ni danda'ama)	<ol style="list-style-type: none"> 1. Adabbii waaqaa/rabbiitii 2. Hanqina Qulqullina qaamaatiin 3. Hanqina Qulqullina naannootiin 4. Talaallii fudhachuu dhabuun
215	Naannawa keetti waggoota 10 darban keessatti jijjiirama haala roobaa irratti wanti hubatte/argite/teejjabde jiraa?	<ol style="list-style-type: none"> 1. Jijjiiramni wayiituu hin jiru 2. Ni dabale 3. Ni hir'ate 4. Hin beeku
216	Naannawa keetti waggoota 10 darban keessatti jijjiirama haala hoo'inaa irratti wanti hubatte/argite/teejjabde jiraa?	<ol style="list-style-type: none"> 1. Jijjiiramni wayiituu hin jiru 2. Ni dabale 3. Ni hir'ate 4. Hin beeku

Kutaa III: Mudannoo fi mala balaa uumamaa/nam-tolchee jala dhaabbataniin/shaagalaniin/falmii godhaniin ilaalchisee

Qajeelfama: Gaafilee armaan gadii barreessuun yookaan irra-maruun deebisi

301	Balaan uumamaa/nam-tolchee asiin dura si mudateeraa?	<ol style="list-style-type: none"> 1. Eeyyee 2. Lakki 3. Hin yaadadhu
302	Eeyyee too ta'e, balaa uumamaa/nam-tolchee asiin dura si mudatee naaf tarreessi	<ol style="list-style-type: none"> 1. Balaa caamsaa/ongee 2. Balaa sochii/dhoqdhoqa lafaa 3. Balaa galoo/lolaa bishaanii 4. Balaa ibiddaa 5. Balaa weerara dhukkubaa 6. Kan biroo (adda-baasii barreessi)_____
303	Cimina balaa uumamaa/nam-tolchee asiin dura si mudatee akkamitti ilaalte?	<ol style="list-style-type: none"> 1. Laafaa 2. Giddu-galeessa 3. Baay'ee cimaa
304	Miidhaan qaamaa sababa balaa kanaatiin sirra ga'e yookaan maatii kee irra ga'e jiraa?	<ol style="list-style-type: none"> 1. Lakki 2. Manni diigamuu/dhabamuu 3. Horin/loon dhumuu yookaan qabeenyi manca'uu 4. Lubbuun namaa du'uu

		5. Kan biroo (adda-baasii barreessi)_____
305	Rakkinni sammuu sababa balaa kanaatiin sirra ga'e yookaan maatii kee irra ga'e jiraa?	1. Eeyyee 2. Lakki
306	Eeyyee yoo ta'e, tarreessi	1. Gadda 2. Gurjaa/abjuu badduu/hirriba keessa bararraaquu 3. Mildhuu/waan asiin duraa irra deddeebi'anii yaadachuun dhiphachuu/cinqamuu 4. Hirriba rafuu dadhabuu 5. Kan biroo (adda-baasii barreessi)_____

307. Balaa hatattamaa asiin dura si mudate sana irratti tarkaanfiin ati fudhatte maal ture? (deebiin kun gargaarsa gaafii deebisaan qaama hatattam-deebii deebisaa irraa argate dabalachuu danda'a).

308. Balaa uumamaa/nam-tolchee yoo si mudate akkamitti dandamatta/miidhaa irraa of baraarta?

309. Balaa uumamaa/nam-tolchee kamiinuu haata'uu ittisuu irratti hirmaattee beektaa? (Ittisuu, deebisanii ijaaruu, nama biroo kan balaan kun tuqe fa'a qarqaaruu) haala isaa bal'inaan naaf ibsi.

310. Gara fuul-duraatti miidhaa balaa kan hin barbaadamne jala-dhaabbachuuf/ falmuuf /ittiin shaagaluuf qophiidhaa?

1. Eeyyee 2. Lakki

311. Eeyyee yoo ta'e, akkamitti?

Yeroo kee naaf kennuu keetiif galatoomi!

Appendix 2. Interview Guide for Key Informant Interviews

JIMMA UNIVERSITY

Interview Guide for key informant interviews

Informed Consent Form

Instruction: Read the information sheet to the participants.

Good morning/good afternoon! My name is _____ and I am working for Jimma University. Researchers from Jimma University are conducting an applied research on Disaster Preparedness and Response in collaboration with the Ethiopian Red Cross Society (ERCS) Oromia Region, Jimma Zone Branch Office. The purpose of the study is to assess communities' awareness and perception towards natural hazards in Jimma zone, southwest Ethiopia.

As your organization is one of the key players in disaster preparedness and response, we have planned to interview you about disaster preparedness and response activities of your organization. The interview may take around 45 minutes. The information you give us will not in any case be linked to you as well as your organization. It will be used to substantiate the finding from the quantitative survey. The information provided in this study is strictly confidential. If you don't mind, we will record the interview with tape recorder not to miss important points.

This research has been reviewed and approved by Jimma University Ethical Review Committee. If you have any questions about any as a research participant, you may contact the Principal Investigator, Professor Kifle Woldemichael; telephone number +251935123168.

Therefore, do you agree to participate in this discussion? Yes _____ No _____

If yes, continue interviewing but if no, say thank you and go to next.

Background characteristics

Zone _____

Woreda _____

Organization _____

Level of education _____

Position of the respondent _____

Service year in the current position _____

Total service year in the organization _____

Questions

1. What are the most frequently occurring natural and man-made disasters in jimma Zone? Could you explain why they are common?
 - How frequently do the disasters occur?

 - When was the last time these disasters occurred?

2. Did your organization participate in any of natural/man-made disaster prevention and response in the past (prevention, recovery, etc.)? Explain how.

3. When was the last time your organization was involved in responding to natural and man-made disasters? What was the outcome/result?

4. How do you rate the preparedness of your organization to respond to commonly occurring disasters? Explain.
 - Preparedness with regard to logistics, supplies
 - Training, human resources
 - Collaboration with other government sectors

5. How do you rate your organization's efforts to improve the awareness of the community about disaster responses? Do you have awareness creation programs for the community? Is the community willing to participate in disaster preparedness and response awareness creation sessions?

6. Could you mention some of the achievements (success stories) of your organization in preventing and responding to commonly occurring disasters?

7. Could you mention some of challenges you faced in responding to disasters in the past? How did you tackle those challenges?

8. In your opinion how do you rate the awareness and preparedness of the rural and urban community to respond to the commonest natural and man-made disasters? Do you think the community has adequate information on how to respond to frequently occurring disasters? Is the community involvement adequate? Explain.

9. In your opinion, what things should be improved to better prepare to prevent and respond to natural and man-made disasters in the future?

10. Is there any additional point you want to make regarding disaster preparedness and response of your organization and the community at large?

Thank you for your time!!!