QUALITATIVE-BASED SURVEY OF AWARENESS, PREPAREDNESS AND RESPONSE CAPACITIES RELATED TO CLIMATE CHANGE-INDUCED RISKS AND VULNERABILITIES FROM GLOF, AND THE DOCUMENTATION OF LESSONS LEARNT AND EXPERIENCES

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ACRONYMS, ABBREVIATIONS AND A GLOSSARY OF BHUTANESE TERMS

LDCF	Least Developed Country Fund
GEF	Global Environment Facility
UNDP	United Nations Development Programme
WWF	World Wide Fund for Nature
RGoB	Royal Government of Bhutan
GLOF	Glacial Lake Outburst Flood
DGM	Department of Geology and Mines
NAPA	National Adaptation Programme of Action
EWS	Early Warning System
DHMS	Department of Hydromet services
DDM	Department of Disaster Management
DMA	Disaster Management Act
CBDRM	Community Based Disaster Risk Management
DRR	Disaster Risk Reduction
CBEWS	Community Based Early Warning System
MoHCA	Ministry of Home and Cultural Affairs
CBDRM	Community Based Disaster Risk Management
DDMCM	District Disaster Management Committee Members
Dzongkhag	District
Gewog	Block
Chiwog	A group of villages but smaller than Block
Gup	Head of a Gewog, elected by the local community
Mangmi	Deputy to the Gup, elected by the local community
Tshogpa	Representative of a Chiwog

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I. INTRODUCTION

The Royal Government of Bhutan (RGoB) had initiated the first National Adaptation Program of Action on climate change project on - **Reducing Climate Change-induced Risks and Vulnerabilities from Glacial Lake Outburst Floods in the Punakha-Wangdi and Chamkhar Valleys** – funded by an LDCF /GEF through UNDP and co-funded by the Austrian Government, the WWF and RGoB. The project duration was for five years (2008 – 2013) and was conceived and implemented to support the RGoB in reducing climate-change induced Glacial Lake Outburst Flood (GLOF) risks and vulnerabilities. Under the project, three main Components/activities were implemented to reduce the risks of GLOF:

- I. Reducing the level of *Thorthormi* lake implemented by the Department of Geology and Mines (DGM);
- II. Installation of the automatic Early Warning System (EWS) implemented by the Department of Hydro-met Services (DHMS); and
- III. Raising awareness on GLOF risks and building capacities in the vulnerable areas implemented by the Department of Disaster Management (DDM).

The important activities of DDM in this Project were to build capacities at National, *Dzongkhag* (District), *Gewog* (Block) and Community-levels to enhance awareness, preparedness and response capacities to deal with climate change-induced risks and vulnerabilities.DDM activities in the pilot Dzongkhags of Punakha, Wangdue Phodrang and Bumthang included:

- i. The drafting and consultation process for the enactment of the Disaster Management Act 2013;
- ii. Training of Dzongkhag and Gewog Officials, Local Functionaries and Vulnerable Communities in the Community Based Disaster Risk Management approach to formulate preparedness plans and prioritize and implement mitigation and preparedness measures through community based interventions;
- iii. Sensitization workshop and training on mainstreaming DRR for Dzongkhag/Gewog officials and local functionaries to initiate integration of climate risk reduction into plan, policy and development activities;
- iv. Capacity building program for school teachers and students on disaster preparedness and response;
- v. End to end awareness campaigns in communities on risk of GLOF and hazard zonation maps through posters, pamphlets and documentary clip, animation and through various media;
- vi. Development and testing of Community Based Early Warning System through appointment of community focal points in each vulnerable community and designing of systematic Information flow mechanisms for GLOF event;
- vii. Demarcation of GLOF hazard zonation by installation of iron pillars and wooden pegs based on GLOF hazard maps in Punakha-Wangdue and Chamkhar Valley;

- viii. Identification of safe GLOF evacuation sites/routes in vulnerable communities and conducting evacuation drills following test activation of the Automatic Early warning System;
- ix. Capacity development program for DDM, MoHCA, Dzongkhag and Gewog officials and local functionaries through ex-country trainings, workshops and institutional visits.

1.1 Project Description and Development Context

1.1.1 Project Start and Duration

Reducing Climate Change-Induced Risks and Vulnerabilities from Glacial Lake Outburst Floods in the Punakha-Wangdue and Chamkar Valleys project is a UNDP supported, GEF-LDCF financed NAPA project co-financed by the Austrian Government, the WWF and RGoB. It was a 5-year project that started towards the end of 2008 and was completedin December 2013.

1.1.2 Problems that the Project Sought to Address

The main objective of the project was to support RGoB in enhancing adaptive capacity to reduce climate change-induced GLOF risks and vulnerabilities in Punakha-Wangdue and Chamkhar Valleys which was to be achieved through three major components, namely:

- a) Reducing the level of *Thorthormi* lake implemented by the Department of Geology and Mines;
- b) Installation of the automatic EWS implemented by the Department of Hydro-met Services; and
- c) Strengthening disaster preparedness and response capacity through raising awareness on GLOF risks and other DRM programs in the vulnerable areas implemented by the Department of Disaster Management.

The expected outcomes were:

- a) Reduced risks of GLOF from *Thorthormi*lake through an artificial lowering of water level of lake by 5 meters implemented by Department of Geology and Mines;
- b) Established coherent, end to end and functional early warning system in Punakha-Wangdue Valley implemented by Department of Hydromet Services; and
- c) Enhanced level of awareness and improved capacities at National, *Dzongkhag, Gewog* and Community levels to prevent climate change-induced GLOF disasters in Punakha-Wangdue and Chamkhar Valleys implemented by Department of Disaster Management.

1.2 Assessment

Along with the Thorthormi Lake Loweringcomponent, capacity building of the communities along the Punakha –Wangdue Valley was started by DDM as part of the **Reducing Climate Change-induced Risks and Vulnerabilities from Glacial Lake Outburst Floods in the Punakha-Wangdi and Chamkhar Valleys.**

Along the said lines, DDM started the full fledged awareness raising campaign in the forms of trainings, meetings/workshops and study tours. This study tried to find out the qualitative based analysis of the initiatives taken by DDM and its impact on community preparedness in disaster management and also to document lessons learnt and best pratices from the three pilot districts, Punakha and Wangdue Valleys and Bumthang.

The five years of input of activities and initiatives by DDM was timely to do an assessment of the impact it created and changes it brought in terms of Preparedness and Responses Capacities to Climate induced risks and vulnerabilities, floods being the main one focused in this study.

1.2.1 Purpose of the Assessment

- To assess the level of disaster awareness, preparedness and response capacities in vulnerable communities related to climate change-induced risk and vulnerabilities; and
- To document lessons learned and experiences from activities undertaken to raise awareness, improve preparedness and strengthen response capacities.

1.2.1.1 Awareness Assessment Question

(a) Did public awareness and education programs on the climate change-induced risks and vulnerabilities from GLOF generate adequate public awareness among all the levels of National, *Dzongkhags, Gewogs,* and Communities?

1.2.1.2 Preparedness Assessment Question

- (a) Does your organization/community have a contingency planning for pre-defined scenario analysis and planning parameters?
- (b) Are you/your team/your organization able to manage delivery of resources to most vulnerable populations?

1.2.1.3 Response capacity Assessment Question

(a) Are you capable of analyzing resource management and logistics in the event of a disaster?

1.3 Limitation of the Study

To empirically assess the project results, a baseline is a pre-requisite. There was no baseline study carried out in the beginning of the project as far back as 2008-2009. The baseline study carried out in 2011 to establish the baseline data on the level of awareness, preparedness and response capacities related to climate change risks and vulnerabilities at various levels in the project areas is more or less a Mid-Term Study. By then, almost all of the GLOF activities were under implementation phase. This limited the Consultant from scientifically showing the effect of the project activities by making comparisons between the baseline study data with data collected after the project ended, i.e. this report.

Another drawback was the rigidness of the ToR where there was no scope for revising it. If there had been a provision for revising it, amongst others, a Propensity-Score Matching (PSM) approach would have been implemented. It would have a treatment group that consists of community and households impacted by the project and a control group that consists of community and households not impacted by the project. Then a comparison would be made to find out the real impact of the project, but as per ToR the places where the survey was to be administered were the places impacted by the project. There was no provision to include places not impacted by the project.

1.4 Assessment Report Structure

This report takes the following structure devided into chapters:

Chapter I Summarizes the GLOF project description and development context including project duration, intended goals and expected outcomes.

Chapter II Elucidates the assessment methodology for surveying and assessing the level of awareness, preparedness and response capacities related to climate change-induced risks and vulnerabilities. Under this assessment; sampling procedure, missing data imputation, and data analysis and estimation method are also illustrated in detail.

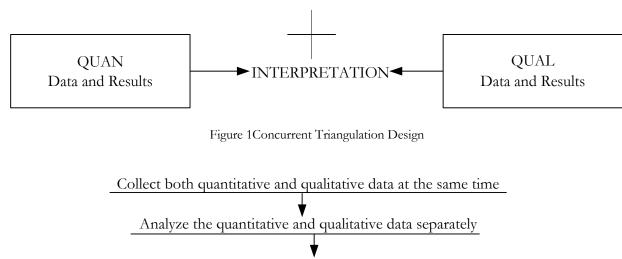
Chapter III Exhibits how statistical analyses were performed and inferences were drawn from the results of computation. Analyses were carried out on all data of awareness, preparedness and response capacity captured under all levels of National, *Dzongkhag* and *Gewog*, and community. The experiment results were exhaustively shown in the form of contingency tables, generalized linear models and logistic regression models. Carefully interpreting these results, inferences on each of the level of awareness, preparedness and response capacities were then drawn.

Chapter IV Recounts experiences and the lessons learnt and finally

Chapter VConcludes the report with a brief conclusion.

II. METHODOLOGY OF THE ASSESSMENT

A Concurrent Triangulation Mixed Method was designed to assess the level of disaster awareness, preparedness and response capacities in vulnerable communities. Quantitative data were collected through the administration of structured questionnaires. Qualitative data were elicited through openended responses, interviews, field notes, and document reviews.Both quantitative and qualitative data were collected simultaneously, analyzed separately, and compared/combined the findings from both the analyses.



Compare/combine the results of the quantitative and qualitative analysis

Figure 2Implementation Steps of the Concurrent Triangulation Design

2.1 Sampling Procedure

Stratified Random Sampling of the probabilistic sampling method was employed to split the population into strata, and then drew a random sample of 70% (predetermined in ToR) of the total population from each of the National Disaster Focal Persons (N = 20, n = 14), *Dzongkhag* Disaster Committee members (N = 53, n = 37) and *Genog* Disaster Committee members (N = 61, n = 42).

Total estimated population(N)	Seventy percent of the total population $(70\% N = n)$	Total samples surveyed
	National Disaster Focal Persons	
20	14	14
	Dzongkhag and Gewog Disaster Committee members	
114	80	57

Table iNational, Dzongkhag and Gewog sample information

Representative samples from the Community members were collected in the following sequential steps:

- i. Stratifying the population into categories(National Disaster Focal Persons, *Dzongkhag* Disaster Committee members, *Gewog* Disaster Committee, and Community Members);
- ii. Listing the population of each category separately;
- iii. Assigning numbers to the units of each category;
- iv. Generating random numbers for the units of each category; and
- v. Selecting the required samples from each category based on the lowest random numbers.

The required sample size of thevulnerable community members under *Punakha*, *Wangdue Phodrang* and *Bumthang Dzongkhags*are calculates as:

$$SampleSize = (Z - score)^2 * StdDev * (1 - StdDev)/(Marginoferror)^2$$

Where:

N is the total number of community members residing in the vulnerable communities in the 3 Dzongkhags;

Margin of error (Confidence Interval) is the acceptable deviation of sample mean from population mean;

Confidence Levelis a measure of the reliability of a result; and

StdDev is the expected variance.

Samples in the 3 pilot *Dzongkhags*are determined with the *confidence level* of 95% and the margin of error (confidence interval) of +/-5%

Table iiCommunity sample information

Dzongkhag	Total Estimated Population (N)	Statistically representative sample size (<i>n</i>)	Total samples surveyed
Punakha	590	83	85
Wangdue Phodrang	285	72	109
Bumthang	557	82	85
Gasa	-	-	10

2.2 Missing Data Imputation

Missing data reflected in contingency tables are imputed with the state-of-the-art missing data imputation technique known by the name of Bootstrap-based Expectation Maximization algorithm imputation method.

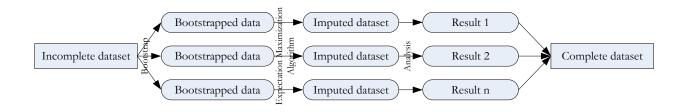


Figure 3Imputation by Bootstrap-based EM algorithm

2.3 Data Analysis and Estimation Method

Data collected through the administration of questionnaires are entered into data entry application. Basic statistics such as frequency, counts, cross tabulation, and correlations were generated to summarize quantitative information by performing basic statistical analyses on the data recorded in a database. Based on these basic statistics, statistical models were built, tested and validated.

Since the dependent variables are all categorical in nature such as: the awareness of the disaster management plans (0=Yes, 1=Don't know, No=2); the confidence in prioritizing, planning, and implementing measures to reduce human and material losses from potential GLOFs (0=Very confident, 1=Confident, 2=Not so confident, 3=Not confident at all); the awareness level of vulnerability and risk assessment in the community after the implementation of the project (0=High, 1=Medium, 2=Same, 3=Low,), an ordered probit model of Generalized Linear Models is employed thus:

$$y^* = x'\beta + \epsilon$$

Where y^* is the unobserved dependent variable; x is the vector of independent variables; and β is the vector of regression coefficients to be estimated.

 y^* is unobservable, only response categories highlighted above are observable. Therefore, observations on y can be used to fit the parameter vector β of unobserved dependent variable y^* as:

$$y = \begin{cases} 0 \text{ if } y^* \le \alpha_1 \\ 1 \text{ if } \alpha_1 < y^* \le \alpha_2 \\ 2 \text{ if } \alpha_2 < y^* \le \alpha_3 \\ \vdots \\ N \text{ if } \alpha_{N-1} < y^*. \end{cases}$$

Where α_N are thresholds or *cutpoints*

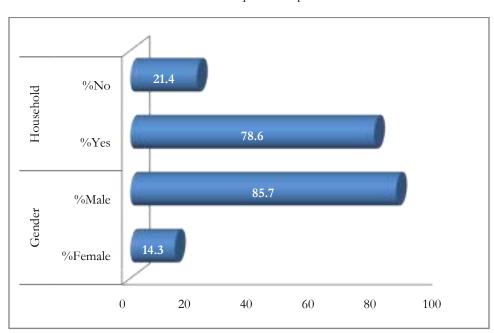
Generalized linear models were fitted using the maximum likelihood estimates (MLE). Data analysis and modeling were carried out in R-Programming language¹.

¹R-language refers to a programming language for statistical computation and graphics.

III. DATA ANALYSIS AND INFERENCEON DISASTER AWARENESS, PREPAREDNESS AND RESPONSE CAPACITY ASSESSMENT

- 3.1 National Level
- 3.1.1 Data Analysis
- 3.1.2 Descriptive Statistics

Of the total 24 national focal persons, 14 of them were interviewed out of which there were only 2 women focal persons at the national level. It is obvious that female representation is clearly lacking at the national level. Over 78% of the national focal persons interviewed were household heads imlpying that it would have a positive cascading effect on the entire family system about the disaster management programme and its themes.

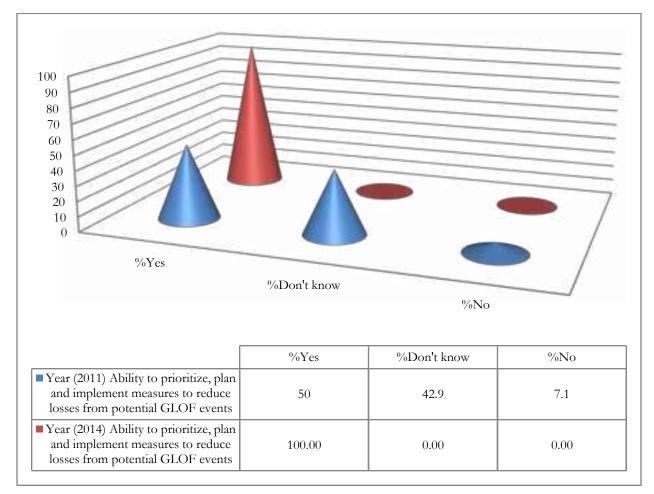


Bar chart 1Respondents' profile

The 'yes' in the household compartment shows the response to the question of whether or not they were the heads of the households and the 'no' shows that they were not the household heads.

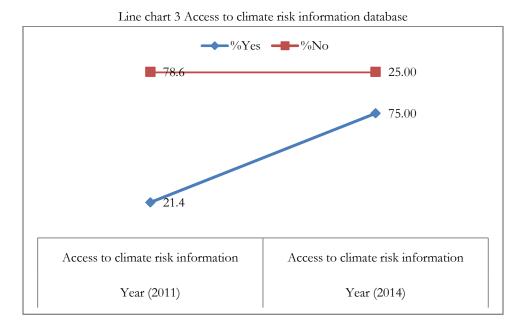
One hundred percent female (2/14) respondents reported that they were very confident in their abilities to prioritize and plan but are not so confident to implement measures against earthquake, flashfloods, fire, etc. to reduce human and material losses from potential GLOFs. Similarly, 100% male respondents echoed similer level of confidence in their abilities to prioritize and plan measures against GLOF events. They mentioned that more training would enable them to be able to implement the measures that they are currently not confident in.

In contrast, only 50% of the respondents reported that they were able to prioritize, plan and implement measures to reduce losses from potential GLOF events in the 2011 assessment report. The scenario here clearly depicts the positive impact of the initiatives taken by DDM to build the capacities of the national focal persons as there is a marked difference (50% in 2011 - 100% in 2014) in the levels of respondents answering they were able to prioritize, plan and implement measures to reduce losses from the potential GLOF calamities.

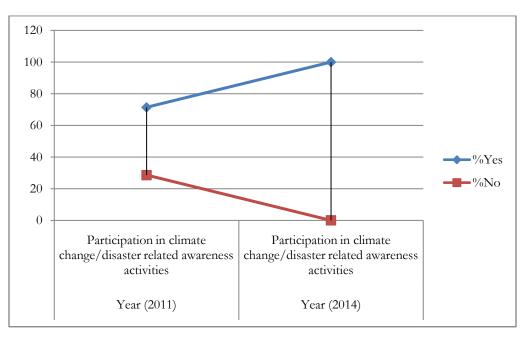


Column chart 2Percentage of national level focal Persons able to or not able to prioritize plan and implement measures to reduce human and material losses from potential GLOFs

There has been a remarkable change in the percentage of national level focal persons able to prioritize plan and implement measures to reduce human and material losses from potential GLOFs between 2011 and 2014 as the increase was from 50-100% as shown in column chart 2 when the same question was asked.



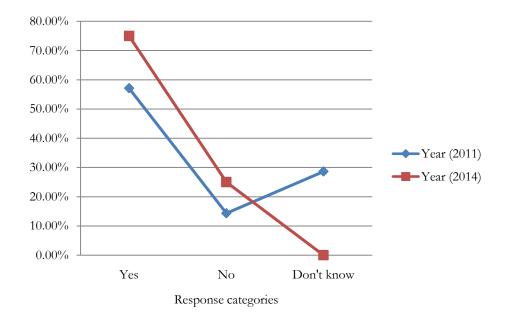
Both 2011 and 2014 assessment reports indicated that focal persons accessing climate risk information through DDM was fairly low. In 2011, it was reported there was only about 21% of focal persons accessing disaster management information system database, however, within 3 years it increased by 54% as there were 75% of them actively accessing climate risk information database as per the 2014 finding (changes depicted in Line chart 3 above). Theres is a marked change in this component too and the reasons can be attributed to the development of technology used by the relevant agencies and also the coordination that DDM had built with other relevant agencies in trying to give access to climate risk information database to the relevant agencies/individuals.



Line chart 4 Participation in any sensitization workshops or trainings organized by DDM

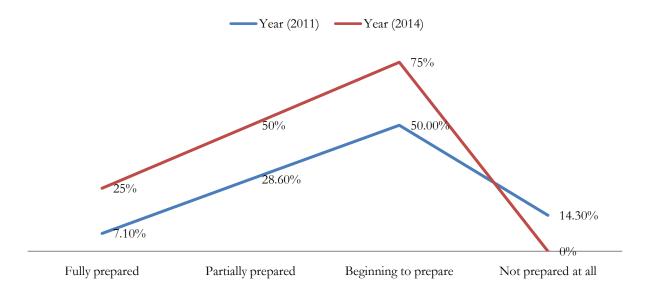
Line chart 4 above shows there was a drop of the answer 'no' to the question on partication in climate change/disaster related awareness activities from about 20% responding it in 2011 and the rise on the 'yes' response from 79 % in 2011 to 100 percent in 2014.

About 71% of the focal persons interviewed responded having participated in climate change/disaster related awareness workshops organized by DDM in the assessment study carried out in 2011. In 2014 study there was not a single respondent who reported that he/she hasn't availed any sensitization workshops or trainings. The respondents have also reported that they not only availed trainings, but also can take measures to mitigate and respond to disasters.



Line chart 5A comparisons of long-term activities carried out for GLOF and other hazards over the years

Line chart 5 shows responses when asked if there are any long-term prevention/mitigation strategies/activities for GLOF or other hazards in their annual or 5-Year Plan, a little over 57% answered 'yes', over 14% 'no' and the rest a little over 28% answered 'don't know' in the 2011 report. As per 2014 report, 75% reported 'yes' and the rest 25% reported 'no'. Not a single person answered 'don't know'. This indicates two things: a number of long-term prevention/mitigation strategies or activities have increased manifold; and adequate awareness has been created since the number of respondents who answered don't know have dropped from 28.6% in 2011 to 0% in 2014. There is a remarkable positive change in this too.



Line chart 6Responsiveness in the event of a disaster assessed in the year 2011 and 2014

When the assessment was carried out in 2011, only 7.1% of respondents reported that their sectors were fully prepared for any eventuality. This response has risen to 25% in 2014. Likewise, of 14.30% of respondents who reported that their sectors weren't prepared at all to respond in the event of a disaster, none has echoed the same in 2014.

So in the preparedness of the sectors to respond to disaster has also been built and the achievement level in this has a difference at least double the effect from 2011 to 2014.

3.2 Higher Order Analysis and Modeling

3.2.1 Inference

3.2.1.1 Awareness

To gauge the level of disaster awareness, it is hypothesized that having participated in any sensitization workshops and training have led to the awareness of disaster management act of Bhutan – 2013, CBDRM, *Gewog* disaster management policy and strategy, *Dzongkhag* disaster management policy and strategy, school disaster management policy and strategy, sector disaster management policy and strategy, and of national disaster management framework 2006.

The level of significance between participation in sensitization workshops or training and awareness level was determined by setting up hypothesis tests where null hypothesis (H_0) represents "no change" or "no difference" between the studies conducted in 2014 and 2011. Alternative hypothesis (H_a) represents chage impacted due to the intervention of the program.

The tables below show the results from the Chi-squared tests of relations between the Inputs by DDM as shown in the extreme left hand column and the derived changes/results with the respondents as shown in the right side of the columns with the answers yes and no.

	>	Are you aware of disa	aster management	act of Bhutan - 2013?	
Have you		Yes	No	Don't know	
participated in any	All	3	0	0	
sensitization	Some	11	0	0	
workshops/training	Not at all	0	0	0	
organized by DDM?					
	$\chi^2 = 4.5714,$	df = 1, p-value = 0.03251,	critical value = 3.841		
		Are you aware of CB	DRM?		
Have you		Yes	No	Don't know	
participated in any	All	5	0	0	
sensitization	Some	5	3	3	
workshops/training	Not at all	0	0	0	
organized by DDM?					
	$\chi^2 = 6.8636,$	df = 2, p-value = 0.0189, a	critical value = 5.991		
		Are you aware of Ge strategy?	wog disaster mana	igement policy and	
Have you		Yes	No	Don't know	
participated in any	All	0	3	0	
sensitization	Some	3	5	3	
workshops/training	Not at all	0	0	0	
organized by DDM?					
	$\chi^2 = 7.8636,$	df = 2, p-value = 0.0489, a	ritical value = 5.991		
		Are you aware of Dzongkhag disaster management policy and			
		strategy?	-		

Inference i Chi-squared test to determine whether participation in training is related to awareness on disaster management plans

Have you		Yes	No	Don't know		
participated in any	All	3	0	0		
sensitization	Some	8	3	0		
workshops/training	Not at all	0	0	0		
organized by DDM?						
	$\chi^2 = 0.0514,$	df = 1, p-value = 0.8206, c	ritical value = 3.841			
		Are you aware of sche strategy?	ool disaster manag	ement policy and		
Have you		Yes	No	Don't know		
participated in any	All	3	0	0		
sensitization	Some	5	6	0		
workshops/training	Not at all	0	0	0		
organized by DDM?						
	$\chi^2 = 1.0694,$	df = 1, p-value = 0.3011, c	ritical value = 3.841			
		Are you aware of sect	or disaster manage	ement policy and		
		strategy?	-			
Have you		Yes	No	Don't know		
participated in any	All	3	0	0		
sensitization	Some	5	6	0		
workshops/training	Not at all	0	0	0		
organized by DDM?						
	$\chi^2 = 1.0694,$	df = 1, p-value = 0.3011, c	ritical value = 3.841			
		Are you aware of national disaster management framework 2006?				
Have you		Yes	No	Don't know		
participated in any	All	3	0	0		
sensitization	Some	8	3	0		
workshops/training	Not at all	0	0	0		
organized by DDM?						
<u> </u>	$\gamma^2 = 4.0514$	df = 1, p-value = 0.04206, a	ritical value = 3.841	•		

In an investigation to assess if there is a significant association between participation in any sensitization workshops/training organized by DDM and the level of awareness of disaster management act of Bhutan 2013, we reject H_0 because $4.5714 \ge 3.841$ and we have a statistically significant evidence at $\alpha = 0.05$ to show that there is a significant (*p-value* = 0.03251) association between the two.

Likewise, it can be proven that a significant association exists between participation in any sensitization workshops/training organized by DDM and the level of awareness of CDBRM, of *Gewog* disaster management policy and strategy, and of national disaster management framework.

Nonetheless, there is no significant association between the participation in any sensitization workshops/training and the level of awareness of *Dzongkbag* disaster management policy and strategy, of school disaster management policy and strategy, and of sector disaster management policy and strategy. This may be attributed to the skepticism of some of the national focal persons on the impact of awareness programs.

For those pairs whose associations are significant we carry out modeling to estimate the effect of workshops and training organized by DDM on the level of awareness on a host of activities.

glm(DisasterManagementActBhutan2013~WorkshopsTrainingParticipation, family=binomial(link="logit"))

Model i Effect of sensitization workshops/training on the awareness management act of Bhutan - 2013

Variable	Estimate	Std. Error	Z value	$\Pr(> z)$
Intercept	-0.5934	0.2247	-0.566	0.0571
Participation in workshops/training	22.2387	8823.9117	0.003	0.0348
. 0		AIC=5.8191		

For a unit increase in participation in worshops/training, the level of awareness on management act of Bhutan is predicted to be significantly increased by 8823.9117.

glm(CBDRMAwareness~WorkshopsTrainingParticipation, family=binomial(link="logit"))

Model ii Effect of sensitization workshops/training on CBDRM awareness

Variable	Estimate	Std. Error	Z value	Pr (> z)
Intercept	-1.9824	0.4774	-3.351	0.000347***
Participation in workshops/training	1.7811	0.5262	2.844	0.009514***
	Singnif. Codes: 0	`***' 0.001 `**' 0.05 `.'	0.1 ' ' 1	
	-	AIC=57.298		

In other words, the glm tests further proves the results earlier derived that the participation in the workshops/trainings by DDM led to positive change in the awareness of DMAct,2013, Gewog DM Policy and Strategy and NDRMF, 2006.

3.2.1.2 Preparedness

To suppose that having participated in any sensitization workshops/training had boosted the confidence of respondents in prioritizing, planning and implementing measures to reduce human and material losses from potential GLOFs, a chi-square test for independence is employed to see if the supposed associations exist.

Inference ii Chi-squared test to determine whether participation in training is related to confidence level in prioritizing, planning and implementing measures to reduce human and material losses

	>	How confident are you in prioritizing measures to reduce human an material losses from potential GLOFs?				
Have you		Very confident		Not so confident	Not confident at all	
participated in any	All	2	1	0	0	
sensitization	Some	0	11	0	0	
workshops/training organized by DDM?	Not at all	0	0	0	0	
~ .	$\chi^2 = 3.$	9773, df = 1, p-value	= 0.04612, critica	l value = 3.841		
		How confident as material losses fre		ng measures to red LOFs?	uce human and	
Have you		Very confident	Confident	Not so confident	Not confident at all	
participated in any	All	0	3	0	0	
sensitization	Some	0	11	0	0	
workshops/training	Not at all	0	0	0		
organized by DDM?						
	$\chi^2 = 4.$	5714, df = 1, p-value				
		How confident material losses f			to reduce human and	
Have you		Very confident	Confiden	t Not so	Not confident	
participated in any				confident	at all	
sensitization	All	0	1	2	0	
workshops/training	Some	0	5	6	0	
organized by DDM?	Not at all				0	

 $\chi^2 = 0, df = 1, p$ -value = 1, critical value = 3.841 We reject H_0 in first and second cases since their respective chi-square values are greater than the critival values (3.9773 \geq 3.841, 4.5714 \geq 3.841). At $\alpha = 0.05$ we conclude that there exist significant association between participation in sensitization workshops/training and the level of confidence in prioritizing (*p-value* = 0.04612), and planning (*p-value* = 0.03251) measures to reduce human and material losses from potential GLOFs.

In simple terms, there is a positive result in having attended the sensitization workshops/trainings and gaining confidence to respond to disasters in the future by planning, prioritizing and implementing measures against GLOF.

Again, generalized linear modeling was carried out for pairs exhibiting significant associations or showing positive changes to assess the effect of workshops and training conducted on the level of confidence in prioritizing, planning and implementing measures against potential GLOFs.

Glm(PrioritizingMeasures~WorkshopsTrainingParticipation, family=binomial(link="logit"))

Model iii Effect of sensitization workshops or training on the ability to prioritize measures to reduce human and material losses from potential GLOFs

Variable	Estimate	Std. Error	Z value	$\Pr(\geq z)$
Intercept	-0.6931	1.2647	-0.566	0.571
Participation in workshops/training	22.2592	813.9137	0.003	0.998
1 0		AIC=7.8191		

A unit increase in participation in workshops/training is predicted to increase the ability of national disaster management committee members to prioritize measures to reduce human and material losses from GLOFs by 813.9137. However there's no significant effect.

glm(PlanningMeasures~WorkshopsTrainingParticipation, family=binomial(link="logit"))

Model iv Effect of sensitization workshops or training on the ability to plan measures to reduce human and material losses from potential GLOFs

Variable	Estimate	Std. Error	Z value	Pr (> z)
Intercept	0.6931	1.2247	0.566	0.571
Participation in workshops/training	-0.5108	1.3663	-0.374	0.708
1 0		AIC=22.977		

Despite the fact that the respondents reported that they were able to prioritize and plan measure against GLOFs shot up from 50% in 2011 baseline study to 100% in 2014 terminal study, no statistically significant linear dependence of the mean of response variable on explanatory variable was detected.

The results from *glm tests* show a different scenario in that it tells us that participating in the sensitization workshops/trainings did not have the direct impact on the Effect on the ability to plan measures to reduce human and materials losses from GLOFs. This means that respondents tend to attribute this ability to factors other than the trainings given.

3.2.1.3 ResponseCapacities

The percentage of respondents who answered "fully prepared," "partially prepared," "beginning to prepare," for disaster eventualities have drastically risen in the 2014 study from that of the 2011 study. It is assumed that the rise was due to the workshops and training organized by DDM. A chi-square test of independence is used to test if the rise was due to the workshops and training organized by DDM.

Inference iii Chi-squared test to determine whether participation in training is associated with the response capacity of a sector focal persons in the event of a disaster

		Do you think that your sector is prepared to respond in the event of a disaster?			
Have you		Fully prepared	Partially	Beginning to	Not prepared
participated in any			prepared	prepare	at all
sensitization	All	0	1	2	0
workshops/training	Some	3	5	3	0
organized by DDM?	Not at all	0	0	0	0
	$\chi^2 = 1.$	9232, df = 2, p-value =	= 0.3823, critical value	= 3.841	

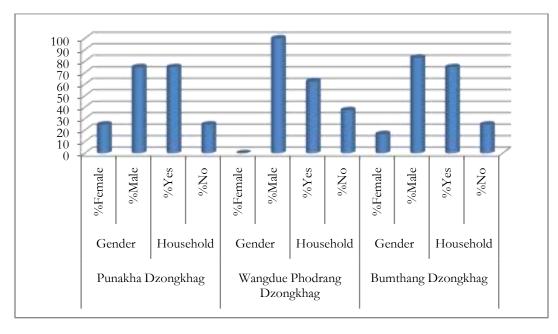
Test result shows that *Chi-square value* (1.9232) is lower than the critical value (3.841) and *p-value* (0.3823) is higher than the α value (0.05), so we accept H_0 and infer that there is no significant association between participation in workshops/training and the preparedness to respond to disaster eventualities.

Inference iii above shows that the change in the preparedness levels of the sectors was not brought about by participating in the workshops/trainings availed which means that the sectors are saying their level of preparedness was not due to the sensitization workshops but rather due to other factors not captured in this study.

3.3 Dzongkhag and Gewog level

- 3.3.1 Data Analysis
- 3.3.2 Descriptive Statistics

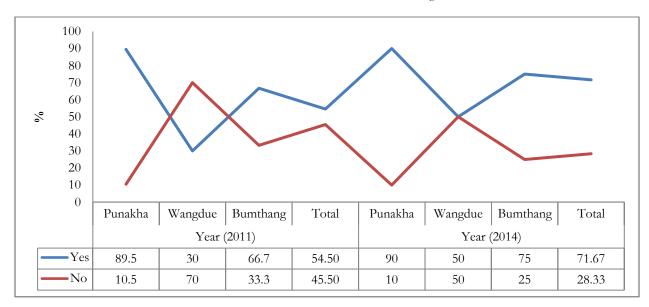
A total of 48 *Dzongkhag* and *Gewog* disaster focal persons of whom 41 men were interviewed in this study. Thirty four were the heads of their household.



Column chart 7Respondents' profile

Column chart 7 shows the respondents' profile at the Dzongkhags and the Gewog Level Focal Persons in which there were forty-eight respondents in total out of which, seven were women and forty-one were men. Gender-segregated dzongkhag-wise distribution shows that in all the three dzongkhags, there were more males than females and in all three dzongkhags, the hourseheads (HH) were majority men (34 from 41) as shown by the 'yes' responses in the chart.

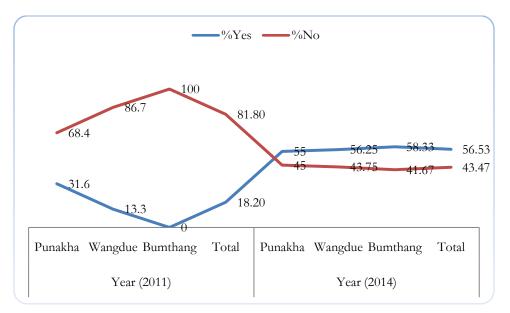
Line chart 8Dzongkhag disaster management focal persons and Gewog disaster management committee members who attended or not attended CBDRM training



Line chart 8 shows the comparative analysis of Dzongkhag and Geowg disaster management committee members who attended and did not attend the CBDRM trainings in 2011 and 2014. It is obvious that the number of respondents who reported having been trained in Community Based Disaster Risk Management planning process have substantially increased in all 3 pilot *Dzongkhags* compared to situation in 2011. The line showing 'yes' shows steady rise in the number of respondents attending the trainings as compared to 2011 data. In Punakha, there was an increase from 89.5 to 90 respondents, in Wangdue, there was an increase from 30 to 50 and in Bumthangm the increase was from 66.7 to 75 in 2014. In terms of percentage, the change was from 54.5 percent in 2011 to almost 72 percent in 2014. Subsequently, the 'no' response to show not having attended the CBDRM training has fallen steadily in 2014 as compared to 2011.

The above scenario is a clear demarcation that continuos effort of DDM in giving the CBDRM training has got its objective fulfilled in trying to reach out more to communities in the pilot dzongkhags.

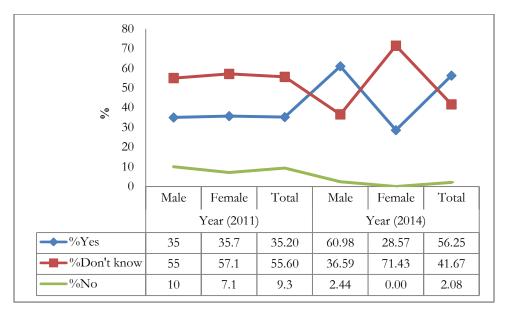
Line chart 9Dzongkhag disaster management focal persons and Gewog disaster management committee members who participated or not participated in mock/evacuation drills



According to the responses for the participation in the mock drills for evacuation (as shown in Chart 9), the fall of percentage of "not having attended" was from 68.4% in 2011 to 45% in Punakha (shown by maroon line), 86.7 down to 43.75 in Wangdue, and the rise of percentages in 'yes' (shown by blue line from 31.6 up to 55 in 2014, and 13.3 to 56.25 respectively, can be largely attributed to the the Mock Drill for GLOF Response conduced in Punakha-Wangdue valley conducted from 25–31 October 2012. The respondents also reported that such mock/evacuation drills are very useful, relevant and applicable.

The trend in this analysis shows a positive change/achievement in terms of having the dzongkhag/gewog disaster management committee members trained to stay prepared for evacuation in cases of a flood disaster.

Line chart 10Overviewall *Dzongkhag* disaster management focal Persons and *Gewog* disaster management committee members' opinions on whether disaster management guidelines and frameworks support climate change adaptation efforts by gender



Line chart 10 showing the Gender-dissagregated Dzongkhag and Gewog DM Committee's response on whether or not the Management Guidelines and Frameworks support the Climate Change Adaptation efforts shows the overall percent of respondents who are of the positive opinion have increased from 35% in 2011 to 56.25% in 2014. Correspondingly, the total percent of respondents who answered 'don't know' and 'no' dropped from 55.60 to 41.67 and 9.3 to 2.08 respectively.

The response trend in chart 10 indicates that there has been a rise in the awareness of the Guidelines and the Frameworks that have been developed. However, the responses of female respondents were not consistent with the statistics of 2011 study, and this inconsistency can be either because there were very less female respondents (7/48) or it could be that female respondents do not have the habit of reading/referring the said documents. This statement merits further study in the future.

3.4 Higher Order Analysis and Modeling

3.4.1 Inference

3.4.1.1 Awareness

In order to ascertain the level of awareness because of mockdrills carried out, workshops conducted and meetings held, a *chi-square test* of independence is employed to see if having participated in mockdrills, workshops and meetings have any effect on the level of awareness on the roles and responsibilities in a disaster situation.

Inference ivAssociation between participation in awareness activities carried out and the level of awareness of the roles and responsibilities in a disaster situation

	>	Are you aware of you situation?	r roles and responsil	oilities in a disaster
1) Have you		Yes	No	Can't say
participated V	Yes	19	0	3
in mockdrill?	No	7	0	11
	χ^2	= 16.5154, df = 6, p-value	<i>= 0.01124</i>	
		Are you aware of you situation?	r roles and responsil	oilities in a disaster
2) Have you		Yes	No	Can't say
participated	Yes	17	1	4
in workshops?	No	8	2	10
	2	$\chi^2 = 9.325, df = 6, p$ -value =	0.1561	
		Are you aware of you situation?	r roles and responsil	oilities in a disaster
3) Have you		Yes	No	Can't say
participated	Yes	20	1	3
in meetings?	No	5	2	8
¥	2	$\chi^2 = 9.197, df = 6, p$ -value =	0.1628	÷

In the first case we reject H_0 and at $\alpha = 0.05$ we conclude that mockdrill and the level of awareness of their respective roles and responsibilities are closely associated. The association is further investigated by modeling it as:

The result from the test in Inference iv showed that there was a positive result in the level of awareness raised for roles and responsibilities in times of disaster and the intervention made by DDM by giving Mock Drill Sessions, holding workshops and meetings in order to build the capacities of the communities.

This result was futher tested using the glm test below and the result derived was the same positive change derived from the Mock Drills but not from the workshops and the meetings.

glm(RolesResponsibilityAwareness~ParticipationInMockdrill, family=poission(link=log))

Variable	Estimate	Std. Error	Z value	$\Pr(\geq z)$			
Intercept	-1.9924	0.5774	-3.451	0.000559***			
ParticipationInMockdrill	1.7811	0.6262	2.844	0.004452***			
Singnif. Codes: 0 **** 0.001 *** 0.05 0.1 * 1							
AIC=67.298							

Model v Effect of participation in awareness activities on the awareness of roles and responsibilities in a disaster situation

Awareness of roles and responsibilities in a disaster situation is predicted to be singnificantly (*p*-0.004452***) increased by 1.7811 with a unit increment in mockdrill participation.

Similar *chi-square* tests have been carried out to test the association between the awareness level of vulnerability and risk assessment and each of the participation in mockdrill, workshops and meetings.

Inference vAssociation between participation in awareness activities and the awareness level of vulnerability and risk assessment in the community

		How do you rate the awareness level of vulnerability and risk assessment in your community after the implementation of the project?									
1) Have you		High	Medium	Low	Same as before						
participat		13	8	0	0						
d in mockdrill	▼ No	5	10	4	0						
	$\chi^2 = 11.228, df = 6, p$ -value = 0.08158										
		How do you rate t	the awareness level of	of vulnerability and	risk assessment						
		in your communit	y after the implemer	ntation of the project	ct?						
2) Have you		High	Medium	Low	Same as before						
participat	e Yes	13	7	2	0						
d in workshop ?		5	11	2	0						
		$\chi^2 = 11.7408, df =$	= 6, p-value = 0.06801								
		How do you rate t	he awareness level o	of vulnerability and	risk assessment						
		in your communit	y after the implemer	ntation of the project	ct?						
3) Have you	u	High	Medium	Low	Same as before						
participat		15	12	1	0						
d in meetings	No	3	7	3	0						
		$\chi^2 = 24.8932$, df = 0	<i>f, p-value = 0.000357</i>	4							

At $\alpha = 0.05$, participation in meetings show the significant associations with the level of awareness of vulnerability and risk assessment.

The result of the chi-square test in Inference v shows that there was no positive effect/change derived from participating in the Mock Drills and workshops and the awareness level of Vulnerability and Risk Assessment (VRA). However, the positive result was found in participating meetings and raise in the awareness levels of VRA in the communities. So, the association further investigated shows the following results:

glm(AwarenessLevelOfRiskAssessment~ParticipationInMeetings, family=poission(link=log))

Variable	Estimate	Std. Error	Z value	Pr (> z)		
Intercept	-006931	0.2673	-2.594	0.0095**		
Participation in meetings	0.6931	0.3852	1.800	0.0719.		
Singnif. Codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1						
	Ū	AIC=82.953				

Model vi Effect of participation in meetings on the awareness level of vulnerability and risk assessment

The awareness level of vulnerability and risk assessment is significantly (p-0.0095**) predicted to be - 006931 when participation in meetings is 0. The significant association seen in *chi-square test* between participation in meetings and the awareness level of vulnerability and risk assmessment could be the cascading effects of other awareness campaign initiatives.

Inference viAssociation between participation in awareness activities and the awareness on the enforcement of circular

			eness on the enforc azard zonation map		
1) Have you		High	Medium	Low	Same as before
participate	Yes	13	11	0	0
d in mockdrill?	No	4	9	6	0
		$\chi^2 = 16.7404, df =$	<i>6, p-value = 0.01029</i>)	
		Your level of awar	eness on the enforc	ement of circular	about the land use
		based on GLOF h	azard zonation map	ping issued by M	IoHCA?
2) Have you		High	Medium	Low	Same as before
participate	Yes	11	11	2	0
d in workshops ?	No	5	9	4	0
	χ^2	= 5.7784, df = 6, p-value	= 0.4485		
			eness on the enforc azard zonation map		
3) Have you		High	Medium	Low	Same as before
participate	Yes	12	15	2	0
d in meetings?	No	3	6	4	0
		$\chi^2 = 10.8403$, df =	= 6, p-value = 0.09344		

Participation in mockdrills has the strongest effect on the level of awareness on the enforcement of circular about the land use based on GLOF hazard zonation mapping issued by MoHCA followed by participation in meetings and then workshops.

The results from Inference vi shows that there was positive effect of participating in the Mock Drill and the level of awareness on the enforcement of the Circulars on Land Use based on GLOF hazard zonation and mapping issued by the MoHCA. This could be because the people got the opportunity to attend the Mock Drill physically. Along the same line, attending workshops also have given rise to positive result on the knowledge of the Land Use Mapping cited. However, attending meetings and the knowledge of the Land Use Mapping had no positive relation meaning it was not the meetings which resulted to the knowledge of the Land Use mapping and the zonation of MoHCA.

Further glm test (Model vii) showed that participating in the Mock Drill and the Workshops were the definite reasons for raising the level of awareness of the Circular on the Land Use Mapping and the Zonation. It is to be noted here that glm tests are not done when there is no positive relations/results derived in the chi-square tests.

glm(EnforcementCircularAwareness~ParticipationInMockdrill, family=poission(link=log))

Variable	Estimate	Std. Error	Z value	Pr (> z)		
Intercept	-0.7802	0.3015	-2.588	0.00967**		
Participation in mockdrill	0.9343	0.3722	2.510	0.01206*		
Singnif. Codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1						
AIC=87.007						

Model vii Effect of participation in mockdrill on the awareness of the enforcement of circular

A unit participation in mockdrill is significantly (0.01206*) predicted to increase the awareness on the enforcement of circular by 0.9343.

3.4.1.2 Preparedness

Trainings in CBDRM, mainstreaming DRR, school disaster preparedness and response, and *Dzong* fire safety training have led to instituting *Dzongkhag*, *Gewog* and community disaster management plans in place.

Inference vii shows that there exists a positive result on getting trained in CBDRM and having the DM Plan in place unlike other situations where having the Dzongkhag/Gwog DM Plans in place wa not due to the respondents' getting trained in CBDRM.

Subsection 2 of Inference vii shows that respondents getting trained in the Disaster Risk Reduction (DRR) had the positive effect on getting the Dzongkhag/Gewog DM Plans in place.

Likewise, subsection 3 of Inference vii shows that getting trained in the School Disaster Preparedness had a positive impact/effect on having the Dzongkhag, Gewog and Community DM Plans in place meaning DM Plans were found at all the said three levels.

In case 4, however shows no positive result/relation in having the Dzongkhag. Gewog and Community DM Plans in place and getting trained in Dzong Fire Safety Trainings.

		Does your Dzongkhag	g have disaster manag	ement plans in place?		
1) Are you		Yes	No	Don't know		
trained in	Yes	11	1	4		
CBDRM?	No	7	8	9		
	$\chi^2 =$	11.5259, df = 6, p-value =	0.07342			
		Does your Gewog have disaster management plans in place?				
Are you		Yes	No	Don't know		
trained in	Yes	7	5	4		
CBDRM?	No	3	11	8		
	χ^2	= 8.9127, df = 6, p-value =	= 0.1785			
		Does your community have disaster management plans in				
		place?				
Are you		Yes	No	Don't know		
trained in	Yes	9	8	1		
CBDRM?	No	8	6	9		
	$\chi^2 = 2$	12.6384, df = 6, p-value	= 0.04915			
		Does your Dzongkhag	g have disaster manage	ement plans in place?		
2) Are you		Yes	No	Don't know		
trained in	Yes	12	1	1		
mainstreaming	No	6	8	12		
DRR?	INO	0	0	12		
	$\chi^2 = 2$	21.4123, df = 6, p-value	= 0.001546			
	Does your Gewog have disaster management plans in place?					
Are you		Yes	No	Don't know		
trained in	Yes	7	6	1		
mainstreaming	No	3	10	11		

Inference viiAssociation between the training conducted and the disaster management plan in place

DRR?				
	χ ² =	= 13.2381, df = 6, p-value		
		Does your communi place?	ty have disaster man	agement plans in
Are you		Yes	No	Don't know
trained in	Yes	9	7	1
mainstreaming DRR?	No	8	7	9
I	χ	$^2 = 8.9877, df = 6, p-value =$	= 0.1743	
		Does your Dzongkhag		gement plans in pla
3) Are you		Yes	No	Don't know
trained in	Yes	7	0	1
school disaster preparedness and response?	No	11	9	12
	$\chi^2 =$	= 13.8999, df = 6, p-value	= 0.03077	
		Does your Gewog hav		ent plans in place?
Are you		Yes	No	Don't know
trained in	Yes	6	1	1
school				
disaster preparedness and response?	No	4	15	11
	$\chi^2 =$	17.6785, df = 6, p-value	= 0.007088	
	70	Does your communi		agement plans in
		place?	,	0 1
Are you		Yes	No	Don't know
trained in	Yes	8	2	1
school disaster preparedness and response?	No	10	12	9
· · ·	$\chi^2 =$	= 13.5936, df = 6, p-value	= 0.03452	•
		= 13.5936, df = 6, p-value Does your Dzongkhag	g have disaster mana	gement plans in pla
4) Are you		Yes	No	Don't know
trained in	Yes	13	4	4
Dzong fire safety training?	No	5	5	10
0	χ	$^2 = 8.4058, df = 6, p-value =$	= 0.2099	
		Does your Gewog hav		ent plans in place?
Are you		Yes	No	Don't know
trained in	Yes	6	10	3
Dzong fire safety training?	No	4	6	10
0	χ	2 = 7.9537, df = 6, p-value =	= 0.2415	
		Does your communi		agement plans in

Are you		Yes	No	Don't know	
trained in	Yes	9	9	3	
Dzong fire					
safety	No	9	5	8	
training?					
$\chi^2 = 7.3416$, df = 6, p-value = 0.2904					

glm(DisasterManagementPlansInPlace~CBDRMTraining, family=poission(link=log))

Variable	Estimate	Std. Error	Z value	Pr (> z)
Intercept	-0.9808	0.4082	-2.403	0.0163*
Training in CBDRM	1.8660	0.4546	2.247	0.0246*
	Singnif. Co	des: 0 '***' 0.001 '**' 0.05	5 '.' 0.1 ' ' 1	
		AIC=88.206		

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Model viii Effect of CBDRM training on community preparedness

Disaster management plans in place is predicted to be increase by 1.8660 when training in CBDRM goes up by one. And it's predicted to be -0.9808 if there's no CBDRM training at all.

Model viii on the Community Preparedness and Effect of Trainings in CBDRM highly justifies the relation that the preparedness was achieved as a result of the CBDRM trainings.

3.4.1.3 Response Capacities

Training in CBDRM, mainstreaming DRR, school disaster preparedness and response, and *Dzong* fire safety training have helped *Dzongkhag* disaster management persons and *Gewog* disaster management committee members to prioritize, plan and implement measures to reduce human and material losses from potential GOLFs as shwn by results in inference viii and further validated by the *glm test* of model ix.

Ability or inability to prioritize, plan and implement measures to reduce human and material losses from the GLOFs is used to assess the respone capacity. It is hypothesized that having trained in CBDRM, mainstreaming DRR, school disaster preparedness and response, and *Dzong* fire safety training had enabled the community members to be able to prioritize measures to reduce human and material losses from GLOFs. These hypotheses are tested by using the *chi-square* test of independence.

		Are you able to prior	itize measures to redu	ice human and
		material losses from	the potential GOLFs.)
1) Are you		Yes	No	Don't know
trained in	Yes	13	4	1
CBDRM?	No	16	4	5
	χ ² =	= 13.7152, df = 6, p-value	= 0.03298	
		Are you able to plan	measures to reduce h	uman and material
		losses from the poter	ntial GOLFs?	
Are you		Yes	No	Don't know
trained in	Yes	14	3	0
CBDRM?	No	16	4	5
		$\chi^2 = 5.381$, df = 6, p-value =	<i>0.496</i>	
		Are you able to imple	ement measures to rec	duce human and
		material losses from	the potential GOLFs)
Are you		Yes	No	Don't know
trained in	Yes	11	4	2
CBDRM?	No	12	5	9
	X	² = 10.4738, df = 6, p-value =	= 0.1061	
		Are you able to prior	itize measures to redu	
		material losses from	the potential GOLFs.)
2) Are you		Yes	No	Don't know
trained in	Yes	15	1	1
mainstreaming DRR?	No	14	7	5
	χ ² =	= 16.6309, df = 6, p-value	= 0.01074	
		Are you able to plan		uman and material
		losses from the poter		
Are you		Yes	No	Don't know
trained in	Yes	15	1	0
mainstreaming	No	15	6	5

Inference viiiRelationship between the training conducted and the ability to prioritize, plan and implement measures to reduce human and material losses from the potential GLOFs

DRR?				
	χ	2 ² = 8.996, df = 6, p-value =		
			lement measures to re	
		material losses from	the potential GOLF	
Are you		Yes	No	Don't know
trained in	Yes	14	2	1
mainstreaming DRR?	No	9	7	10
	$\chi^2 =$	17.4679, df = 6, p-value	= 0.007709	
	n		ritize measures to rec	luce human and
		, i i	the potential GOLF	
3) Are you		Yes	No	Don't know
trained in	Yes	10	0	0
school	103	10	0	0
disaster	No	19	8	6
preparedness				
and response?				
	χ ² =	= 16.5449, df = 6, p-valu		
			measures to reduce	human and materia
		losses from the pote	ential GOLFs?	
Are you		Yes	No	Don't know
trained in	Yes	10	0	1
school				
disaster	NT		-	
preparedness	No	21	7	4
and response?				
and response.	γ	2 = 7.3851, df = 6, p-value	= 0.2867	
	λ		lement measures to re	educe human and
			the potential GOLF	
٨			A	
Are you	Yes	Yes 9	No 0	Don't know
trained in	165	9	0	1
school				
disaster	No	14	9	10
preparedness				
and response?				
	$\chi^2 =$	<i>12.9502, df = 6, p-value</i>	e = 0.04383	
		Are you able to prio	ritize measures to rec	luce human and
		material losses from	the potential GOLF	s?
4) Are you		Yes	No	Don't know
trained in	Yes	15	3	4
Dzong fire		-	-	-
safety	No	14	5	3
2	110	17	5	5
training?		2- (1011 10	- 0.4446	
	χ	$2^{2} = 6.1041, df = 6, p-value$		
			measures to reduce	human and materia
1		losses from the pote		
Are you		Yes	No	Don't know
trained in	Yes	18	3	2
Dzong fire				
Dzong fire safety	No	13	4	4

	$\chi^2 = 2.4612$, df = 6, p-value = 0.8728					
		Are you able to implen	Are you able to implement measures to reduce human and			
material losses from the potential GOLFs?						
Are you	Are you Yes No Don't k					
trained in	Yes	13	5	4		
Dzong fire	N	10	4	0		
safety training?	No	10	4	8		
$\chi^2 = 4.8255, df = 6, p$ -value = 0.5664						

The test result shows that there exists significant (*p-value 0.03298*) association at $\alpha = 0.05$ between CBDRM training and the ability to prioritize measures against potential GLOFs. Similarly, significant associations are also seen between the ability to prioritize measures against GLOFs and training in mainstreaming DRR, and training in school disaster preparedness and response. Significant association is also seen between the ability to implement measures against GLOFs and training in *Dzong* fire safety.

Case 1 of Inference viii shows that there is a positive relation in that getting trained in CBDRM had positive effect in being able to prioritize and plan measures to reduce human and material losses from potential GLOF threats whereas getting such training did not show positive relation in being able to implement measure to reduce human and material losses from the threat mentioned.

Case 2 shows the positive relation/impact or change derived between getting trained in DRR and being able to prioritize, plan and implement measures to reduce human and material losses from the potential GLOF threats.

Case 3 shows otherwise, in that it shows that getting traine in DRR did not have the positive relation with being able to plan measures to reduce human and material losses from the said GLOF threats. Likewise, subsection 4 goes to show there is no positive relation between "getting trained for Dzong Fire Safety and and being able to prioritize, plan and implement measures to reduce the mentioned losses against the GLOF threats. This is obvious in that GLOF threat and Fire Safety are entirely two different worlds of hazards.

3.5 Community Level

3.5.1 Data Analysis

3.5.2 Descriptive Statistics

A total of 85 community members from Punakha *Dzongkhag* participated in the survey. Female respondents made up 67.1% of the total respondents. Over 51% of them were household heads, 25.9% business people, 9.4% civil servants, 42.4% farmer, and 20% students. A large majority of 74.1% were married, 21.2% single and 4.7% were divorcees. The percent of literate respondents was at 50.6 while the rest of 49.4% were illiterates.

In Wangdue Phodrang, 109 community members were interviewed out of which 53 were male and 56 were females. Amongst them, 54% of them were household heads, 22% business people, 10% civil servants, 24% farmers, 9% house wives, 24% students and 10% others. Of them 3% were divorcees, 65% married and 32% single people. Literate respondents made up 74%.

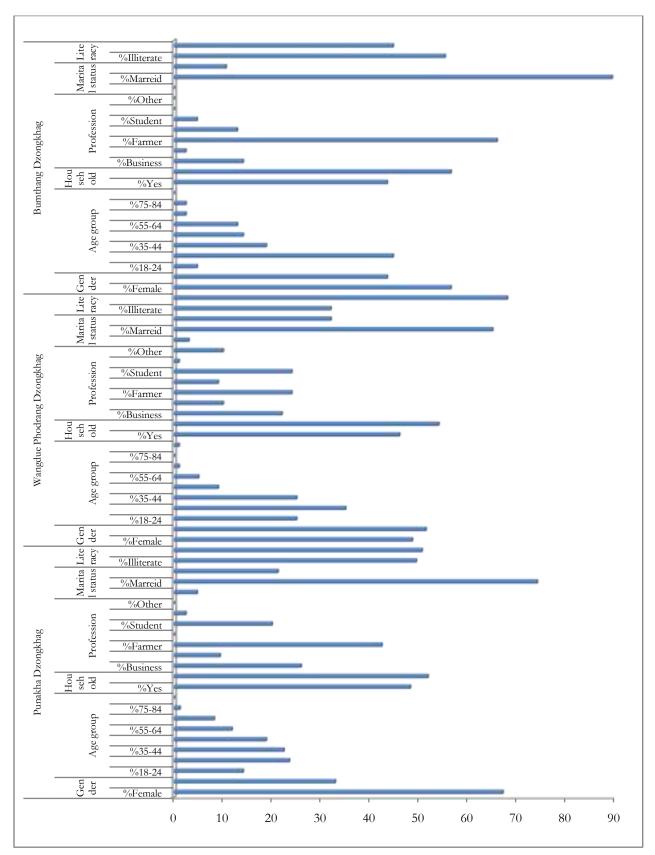
Eighty five community members were interviewed in Bumthang *Dzongkhag* out of which 56.5% were female. There were 48 household heads, making up 56.5% of the total respondents. Samples were drawn from a wide range of occupations groups–14.1% were business people, 2.4% civil servants, 65.9% farmers, 12.9 house wives, and 4.7% were students.

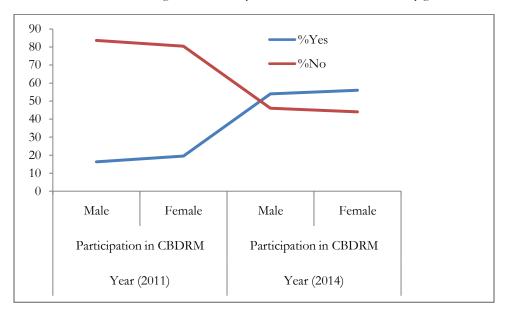
It is interesting to note that at the Community Level, female respondents constitute the maximum percentage in all three dzongkhags of Punakha, Wangdue and Bumthang and in all the three dzongkhags, majority of them (always 50%) were heads of households.

Chart 11 shows the detailed gender-dissagregated profile of community respondents covering their occupations, literacy levels and marital statuses.

In terms of Literacy Levels, Punakha had about 50% illiterate respondents, Wangdue had about 26% illiterates. Surprisingly, Wangdue respondents were the highest literate ones at the percentage level of 74.

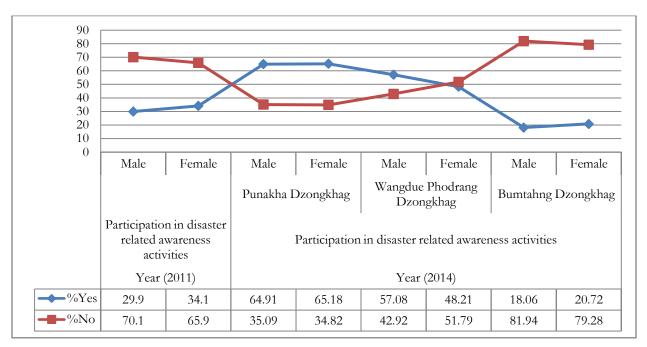
Bar chart 11Respondents' profile





Line chart 12Percentage of community members trained in CBDRM by gender

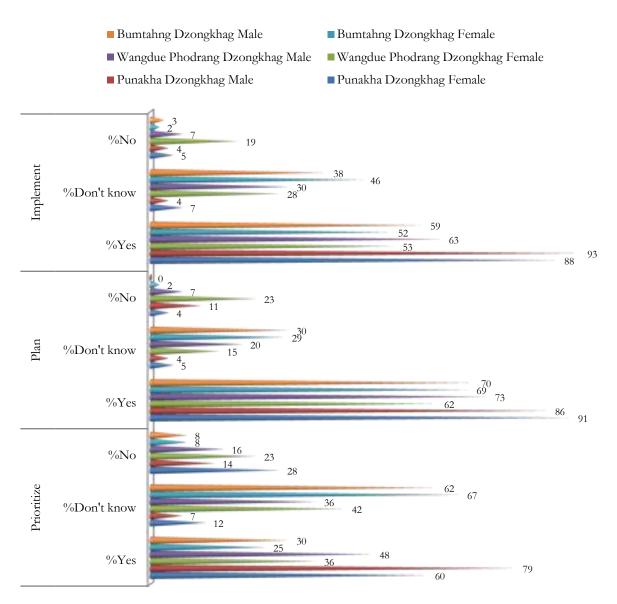
A gender-disaagregated study on the percenate of community members being trained in CBDRM showed the results that a total of 16.3% male and 19.5% femalecommunity members were found to have been trained in CBDRM in 2011 baseline study. The percentages have shot up to 54 and 56 respectively in this 2014 terminal study. The increase in the CBDRM trained community members was attributed largely to awareness trainings conducted in post-2011. The community also attributed the increase to awareness created through media (radio, television and print media).



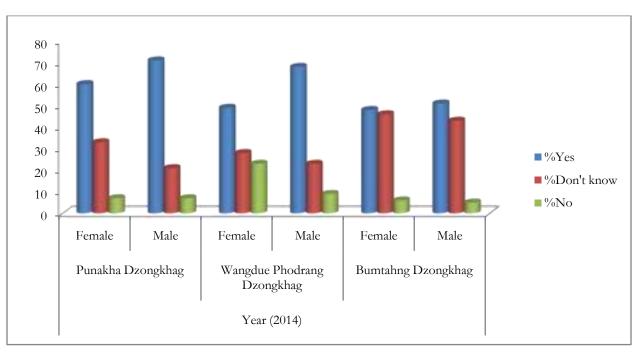
Line chart 13Participation in disaster related awareness activities by gender

Percentage of male and female respondents who reported having participated in disaster related awareness activities such as CBDRM, School Disaster Preparedness and Response Training, *Dzong* Fire Safety Trainingwere 29.9% and 34.1% in 2011 baseline study. In 2014 terminal evaluation study, the percengtages were 64.91% and 65.18% in Punakha *Dzongkhag*, 58.08% and 48.21% in Wangdue Phodrang *Dzongkhag*, and 18.06% and 20.72% in Bumthang *Dzongkhag*.

Bar chart 14Community members able to prioritize plan and implement measures to reduce human and material losses from potential GLOF

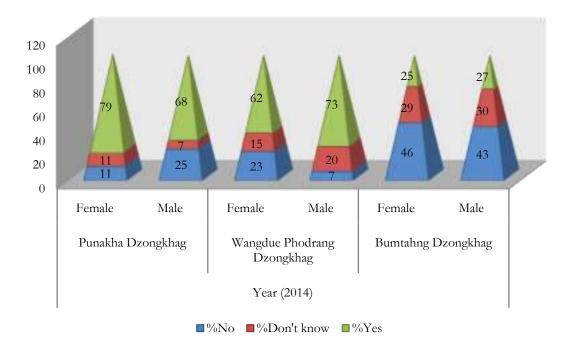


Seventy percent of male and 69% of female from Bumthang, 73% of male and 62% of female from Wangdue Phodrang, 86% of female and 91% of male respondents reported that they were able to plan measures to reduce human and material losses from potential GLOF. According to them, the planning include monitoring weather forecasts, having emergency evacuation plan, preparing to to move to the designated evacuation/safe areas marked by concerned authorities. This shows that the need to strengthen awareness at the community level reflected in the 2011 report has been strengthened to a large extent.



Column chart 15Community members who are able to take precautionary measures in the event of GLOF

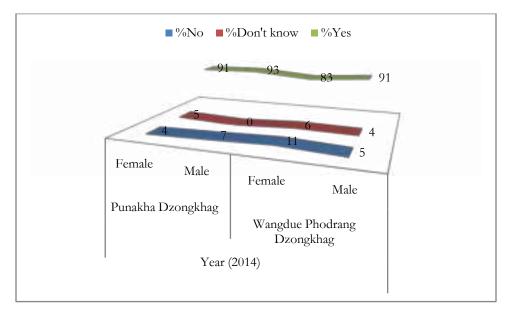
As per 2011 baseline study, on an average the percent of community members who are able to take precautionary measures and react to potential GLOFs to minimize human and material losses by securing safe grain storage and insuring house against GLOF are 6.9 and 33 respectively. These low percents have drastically improved over the last 3 years.



Column chart 16Disaster management plans in place at the community level

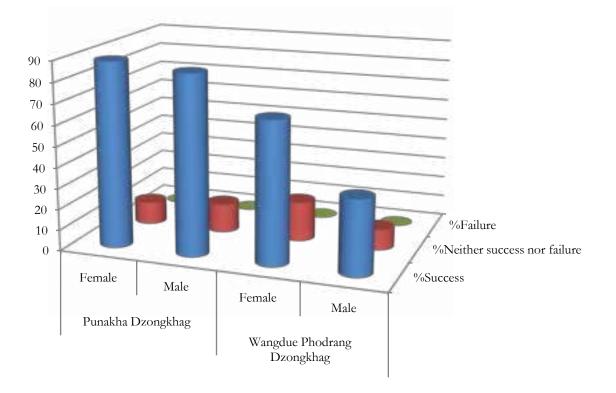
They baseline study conducted in 2011 reported that 72.7% of respondents in Punakha, 57.1% in Wangdue Phodrang, and 100% in Bumthang have disaster management plans in place at their communities. This study showed 79% of female and 68% of male respondents in Punakha, 62% female and 73% male in Wangdue Phodrang, and only 25% female and 27% male in Bumthang reported having disaster management plans in place at their communities. The low pecent in Bumthang was attributed to non-functional *Gewog* disaster management community members.

It is remarkable to note that Bumthang has almost equal percent of males and females in all the categories of responses of 'yes', "do not know" and 'no' but more females are shown to have the knowledge than males in Punakha Dzonkhag which is the worst hit District in the previous floods of 1994, and Cyclone Aila in 2009.



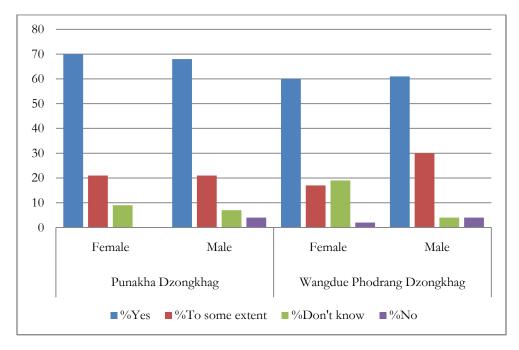
Line chart 17Level of awareness on mitigation work at Thorthormi lake

The level of awareness of mitigation work at Thorthormi lake was exceedingly high in both Punakha and Wangdue Phodrang *Dzongkhags* with 91% female and 93% male in Punakha *Dzongkha,* 83% female and 91% male in Wangdue Phodrang *Dzongkhag* answering yes that they are aware of mitigation work at Thorthormi lake.



Column chart 18Rating of Thorthormi lake mitigation work

Column chart 18 shows the rating given by respondents in the success levels of mitigation of Thorthormi Lake in causing flood threat in the future and it was found that 89% of female respondents and 86% male respondents rated the work as success in Punakha *Dzongkha* shown by the blue cylinder in the front. Under Wangdue Phodrang *Dzongkhag* 68% of female and 83% of male respondents rated the work as success. This clearly shows men are being more cautious in responding about the success of mitigation intervention which has not been tested yet by a major flood like that of 1994.



Column chart 19 Mitigation work and the risk of GLOF

With the completion of mitigation work, 70% of female and 68% of male respondents in Punakha Dzongkhag are of the opinion that the risk of GLOF has now been reduced to a safe level. Twenty one percent of female and male respondents think that the risk has been reduced to some extend only. Under Wangdue Phodrang Dzongkhag the pecent of female and male respondents who were of the opinion that the GLOF mitigation work at Thorthormi lake had reduced the risk of GLOF to a safe level were 60% and 61%.

3.6 Higher Order Analysis and Modeling

3.6.1 Inference

3.6.1.1 Awareness

Test (1) through (3) show that at community level participation in mockdrills, workshops, and meetings have significantly enchanced the awareness level of roles and responsibilities amongst the community members.

Inference ixRelationship between participation in awareness activities and the level of awareness of the roles and responsibilities

		Your awareness level	of roles and responsil	oilities?	
1) Have you		High	Low	Medium	
participated	Yes	59	2	68	
in mockdrill?	No	20	68	61	
	$\chi^2 =$	83.3097, df = 4, p-value	e = 2.2e-16		
		Your awareness level of roles and responsibilities?			
2) Have you		High	Low	Medium	
participated	Yes	10	0	3	
in workshops?	No	70	70	125	
	$\chi^2 =$	17.194, df = 4, p-value	= 0.001772		
		Your awareness level	of roles and responsil	oilities?	
3) Have you		High	Low	Medium	
participated	Yes	58	3	58	
in meetings?	No	22	67	71	
	$\chi^2 =$	71.5443, df = 2, p-value	<i>= 2.91e-16</i>		

In all of the above tests, at $\alpha = 0.05$ the *p-value* is highly significant, so the alternative hypothesesthat the awareness level of roles and responsibilities of community members are closely associated with participation in mockdrills, workshops and meetings. The relationships are further investigated by modeling them.

glm(LevelOfRRAwareness~ParticipationInMockdrill, family=poission(link=log))

Model ix Effect of participation in mockdrill on the awareness of roles and responsibilities

Variable	Estimate	Std. Error	Z value	$\Pr(\geq z)$
Intercept	-1.3876	0.1748	-7.939	2.04e-15***
Participation in mockdrill	0.6717	0.1177	5.708	1.14e-08***
	Singnif. Co	des: 0 '***' 0.001 '**' 0.05	·.' 0.1 ' ' 1	
		AIC= 455.62		

The level of awarenss of the roles and responsibilities is predicted to increase by 0.6717 when the participation in mockdrill goes up by one.

glm(LevelOfRRAwareness ~ ParticipationInWorkshops, family=poission(link=log))

Variable	Estimate	Std. Error	Z value	$\Pr(\geq z)$
Intercept	-0.11346	0.10380	-1.093	0.274
Participation in workshops	0.06677	0.08367	0.798	0.425
	Singnif. Co	des: 0 '***' 0.001 '**' 0.0	5 '.' 0.1 ' ' 1	
	_	AIC = 558.75		

Model x Effect of participation in workshops on the awareness of roles and responsibilities

For a unit increment in participation in workshops, the level of awareness of their roles and responsibilities are predicted to be increased by 0.06677. But the coefficients are not significant.

glm(LevelOfRRAwareness ~ParticipationInMeetings, family=poission(link=log))

Model xi Effect of participation in meetings on the awareness of roles and responsibilities

Variable	Estimate	Std. Error	Z value	Pr (> z)
Intercept	-1.2375	0.1646	-7.519	5.54e-14***
Participation in meetings	0.6058	0.1127	5.376	7.60e-08***
	Singnif. Co	odes: 0 '***' 0.001 '**' 0.0	5 '.' 0.1 ' ' 1	
		AIC = 471.64		

Participation in disaster management meetings has a significant positive effect on the level of awarensss of roles and responsibilities. The level of awarenss is predicted to rise by 0.6058 with a unit increase in meetings.

Inference xRelationship between participation in awareness activities and the awareness of location and access safe GLOF evacuation sites

		Are you aware of location safe GLOF evacuation		
1) Have you		Yes	No	
participated	Yes	103	4	
in mockdrill?	No	68	15	
	$\chi^2 = 80.7402,$	df = 10, p-value = 3.594e-	-13	
		Are you aware of location	on and access routes to	
		safe GLOF evacuation sites?		
2) Have you		Yes	No	
participated	Yes	11	2	
in workshops?	No	160	17	
	$\chi^2 = 7.601$	7, $df = 10$, p-value = 0.6677		
		Are you aware of location	on and access routes to	
		safe GLOF evacuation	sites?	
3) Have you		Yes	No	
participated	Yes	88	4	
in meetings?	No	84	15	
	$\chi^2 = 76.9385,$	df = 5, p-value = 3.663e-	15	

At $\alpha = 0.05$ thetests (1) and (3) support the hypotheses that participation in mockdrills and meetings have significant positive effect on the awareness of locations and access routes to safe GLOF evacuation sites. The tests are further investigated by modeling them as:

glm(LocationAccessRoutesAwareness~ParticipationInMockdrill, family=binomial(link=logit))

Model xii Effect of participation in mockdrill on the awareness of location and access routes to safe GLOF evacuation sites

Variable	Estimate	Std. Error	Z value	Pr (> z)
Intercept	-0.4006	0.1556	-2.575	0.01002*
Participation in mockdrill	1.7224	0.5838	2.950	0.00318**
	Singnif. Co	des: 0 '***' 0.001 '**' 0.05	5 '.' 0.1 ' ' 1	
		AIC = 255.23		

glm(LocationAccessRoutesAwareness~ParticipationInMeetings, family=binomial(link=logit))

Model xiii Effect of participation in meetings on the awareness of location and access routes to safe GLOF evacuation sites

Variable	Estimate	Std. Error	Z value	Pr (> z)		
Intercept	-0.04652	0.15254	-0.305	0.7604		
Participation in meetings	1.36828	0.58304	2.347	0.0189*		
Singnif. Codes: 0 **** 0.001 *** 0.05 ·. 0.1 · 1						
		AIC = 261.91				

3.6.1.2 Preparedness

		In the event of potent	tial GLOF. can vou	take precautionary
		measures against it?		
1) Are you		Yes	No	Don't know
trained in	Yes	76	8	18
CBDRM?	No	83	20	73
	$\chi^2 =$	21.2105, df = 4, p-value =	0.0002876	1
		Does your community		agement plans in
		place?	, ,	0 1
Are you		Yes	No	Don't know
trained in	Yes	85	14	3
CBDRM?	No	64	61	51
	$\chi^2 =$	62.3618, df = 4, p-value =	9.245e-13	
		In the event of potent	tial GLOF, can you	take precautionary
		measures against it?	-	
2) Are you		Yes	No	Don't know
trained in	Yes	27	3	12
school				
disaster	No	133	25	79
preparedness	140	155	25	15
and response?				
	χ	$x^2 = 1.0754, df = 2, p-value =$		
		Does your community	y have disaster man	agement plans in
		place?		
Are you		Yes	No	Don't know
trained in	Yes	28	7	7
school				
disaster	No	121	69	47
preparedness	110	121	09	47
and response?				
	χ	$x^2 = 3.8421, df = 2, p-value =$		
		In the event of potent	tial GLOF, can you	take precautionary
		measures against it?		
3) Are you		Yes	No	Don't know
trained in	Yes	14	2	1
Dzong fire				
safety	No	146	26	90
preparedness	INO	140	20	90
and response?				
1	χ^2	= 5.9946, df = 2, p-value =	= 0.04992	- 1
		Does your community		agement plans in
		place?		
Are you		Yes	No	Don't know
Are you trained in	Yes	Yes 14	<u>No</u> 3	Don't know
	Yes			
trained in	Yes			

Inference xiRelationship between the training conducted and the preparedness

and response?					
$\chi^2 = 6.956, df = 2, p$ -value = 0.03087					

In all cases of tests (1) and (3) the *p*-values are smaller than the significance level ($\alpha = 0.05$), hence alternative hypotheses are accepted and the relationship are further investigated by modeling them.

glm(PrecautionaryMeasures~TrainingInCBDRM, family=poission(link=log))

Model xiv Effect of trainingin CBDRM on the ability to take precautionary measures against GLOF

Variable	Estimate	Std. Error	Z value	Pr (> z)			
Intercept	-0.8408	0.1508	-5.577	2.45e-08***			
Training in CBDRM	0.7766	0.1696	4.580	4.65e-06***			
Singnif. Codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1							
	-	AIC = 645.44					

Result: Strong relationship exists between the two.

glm(DisasterManagementPlanInPlace~TrainingInCBDRM, family=poission(link=log))

Model xv Effect of training in CBDRM on having disaster management plan in place

Variable	Estimate	Std. Error	Z value	Pr (> z)
Intercept	-1.6292	0.2236	-7.286	3.19e-13***
Training in CBDRM	1.5530	0.2368	6.557	5.50e-11***
	Singnif. Co	des: 0 '***' 0.001 '**' 0.0	5 '.' 0.1 ' ' 1	
	_	AIC = 537.05		

Result: Strong relationship exists between the two.

glm(PrecautionaryMeasures~TrainingInDzongFireSafety, family=poission(link=log))

Model xvi Effect of training in Dzong fire safety on the ability to take precautionary measures against GLOF

Variable	Estimate	Std. Error	Z value	Pr (> z)		
Intercept	-1.4469	0.4998	-2.895	0.00379**		
Training in <i>D₂ong</i> fire safety	1.2065	0.5046	2.391	0.01681*		
Singnif. Codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1						
		AIC = 660.8				

glm(DisasterManagementPlanInPlace~TrainingInDzongFireSafety, family=poission(link=log))

Model xvii Effect of training in Dzong fire safety on having disaster management plan in place

Variable	Estimate	Std. Error	Z value	Pr (> z)				
Intercept	-1.7346	0.5773	-3.005	0.00266**				
Training in <i>Dzong</i> fire safety	1.3648	0.5820	2.345	0.01904*				
Singnif. Codes: 0 **** 0.001 *** 0.05 ·. 0.1 · 1								
AIC = 591.15								

3.6.1.3 Response Capacities

Inference xiiRelationship between the training conducted and the ability to prioritize, plan and implement measures to reduce human and material losses from the potential GLOFs

		Are you able to priorit		
1) A no you		material losses from th Yes	No	Don't know
1) Are you	Yes	69	18	15
	No	56	30	90
CBDRM?				90
	χ² =	142.7117, df = 4, p-value =		1 1 . • •
		Are you able to plan m losses from the potent		human and materia
Are you		Yes	No	Don't know
trained in	Yes	92	6	4
CBDRM?	No	115	16	43
CDDRM:		28.0028, df = 6, p-value =		75
	λ -	Are you able to impler	ment measures to r	educe human and
		material losses from th		
Are you		Yes	No	Don't know
trained in	Yes	92	3	7
CBDRM?	No	92	17	65
	$\chi^2 =$	44.4575, df = 6, p-value =	5.998e-08	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Are you able to priorit		duce human and
		material losses from th		
2) Are you		Yes	No	Don't know
trained in	Yes	22	2	18
school				
disaster	No	102	16	88
preparedness	INO	103	46	88
and response?				
<b>1</b>	χ	² = 5.3908, df = 2, p-value = 0	0.06751	
		Are you able to plan m	neasures to reduce	human and materia
		losses from the potent		
Are you		Yes	No	Don't know
trained in	Yes	27	3	10
school				
disaster	No	180	19	38
preparedness	INO	100	19	50
and response?				
	$\chi^2 =$	= 13.2283, df = 3, p-value =	0.004168	
		Are you able to impler	ment measures to r	educe human and
		material losses from th	ne potential GOLF	's?
Are you		Yes	No	Don't know
trained in	Yes	22	3	15
school				
disaster	NT-	1(2	17	EO
preparedness	No	162	17	58
and response?				
	2	<i>: 114.3893, df = 3, p-value :</i>	0.00010	1

			ritize measures to redu the potential GOLFs?	
3) Are you		Yes	No	Don't know
trained in	Yes	12	1	4
Dzong fire safety measures?	No	113	47	102
	$\chi^2$	= 5.0321, df = 2, p-value =	0.08078	•
		Are you able to plan losses from the poter	measures to reduce hunce hunce hunce hunce hunce here have been been been measured as the measure of the measures have been been been been been been been be	uman and materia
Are you		Yes	No	Don't know
trained in	Yes	15	0	2
Dzong fire safety training?	No	192	22	46
	χ ²	² = 2.3497, df = 3, p-value =	= 0.5031	
			ement measures to rec the potential GOLFs?	
Are you		Yes	No	Don't know
trained in	Yes	14	0	3
Dzong fire safety training?	No	170	20	70
	γ	2 = 2.668, df = 3, p-value =	0.4457	•

# glm(AbilityToPrioritize~TrainingInCBDRM, family=poission(link=log))

Model xviii Effect of training in CBDRM on the ability to prioritize measures to reduce human and material losses from potential GLOFs

Variable	Estimate	Std. Error	Z value	Pr (> z )				
Intercept	-0.7538	0.1443	-5.223	1.76e-07***				
Training in CBDRM	0.9342	0.1598	5.845	5.06e-09***				
Singnif. Codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1								
AIC = 666.8								

### glm(AbilityToPlan~TrainingInCBDRM, family=poission(link=log))

Model xix Effect of training in CBDRM on the ability to plan measures to reduce human and material losses from potential GLOFs

Variable	Estimate	Std. Error	Z value	Pr (> z )					
Intercept	-1.9859	0.2673	-7.431	1.08e-13***					
Training in CBDRM	1.4655	0.2847	5.148	2.63e-07***					
Singnif. Codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1									
	_	AIC = 470.39							

glm(AbilityToImplement~TrainingInCBDRM, family=poission(link=log))

Variable	Estimate	Std. Error	Z value	$\Pr(\geq  z )$
Intercept	-1.7918	0.2425	-7.388	1.49e-13***
Training in CBDRM	1.6309	0.2560	6.371	1.88e-10***
0	Singnif. Co	des: 0 '***' 0.001 '**' 0.0	5 `.' 0.1 ` ' 1	
		AIC = 546.05		

Model xx Effect of training in CBDRM on the ability to implement measures to reduce human and material losses from potential GLOFs

### glm(AbilityToPlan~TrainingInSchoolDPR, family=poission(link=log))

Model xxi Effect of training in school disaster preparedness and response on the ability to plan me reduce human and material losses from potential GLOFs

measures to

Variable	Estimate	Std. Error	Z value	$\Pr(\geq  z )$				
Intercept	-0.5534	0.2085	-2.654	0.00796**				
Training in CBDRM	-0.3608	0.2324	-1.553	0.12053				
Singnif. Codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1								
AIC = 546.05								

### glm(AbilityToImplement~TrainingInSchoolDPR, family=poission(link=log))

Model xxii Effect of training in school disaster preparedness and response on the ability to implement measures to reduce human and material losses from potential GLOFs

Variable	Estimate	Std. Error	Z value	Pr (> z )				
Intercept	-0.5534	0.2085	-2.654	0.00796**				
Training in CBDRM	-0.3608	0.2324	-1.553	0.12053				
Singnif. Codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1								
AIC = 546.05								

# IV. LESSONS LEARNT, EXPERIENCES AND RECOMMENDATIONS

A summary of lessons, experiences and recommendations from specific training and workshops carried out:

Training workshop on CBDRM for the *Dzongkhag* Disaster Management Committee (DDMC) and *Dzongkhag* disaster Management Teams (DDMT) was found to be extremely beneficial, relevant and equipped the participants with information on the important topics and tools for developing *Dzongkhag* Disaster Management Plans. It also gave them the requisite capacity to, in turn train the *Gewog* functionaries in disaster management plans.

Recommendations:

- It is recommended that the formation of DDMC and DDMT be supported by bestowing powers and responsibilities which is clearly spelt out in their terms of reference. Also, having a very strong line of command and coordination between these two bodies would help them function smoothly.
- In view of the *Dzongkhag*officials being burdened with the additional responsibility of manning emergency operation center (EOC), it is recommended that DDM recruit at least two regular trained staff to operate the EOC.
- It is highly recommended that a close coordination and collaboration is promoted between agencies and government partners through information sharing, conferences, and researches, etc.

Workshops on Disaster Preparedness and Response for Safe School were reported to be relevant and timely with the occurrence of disasters increasing ever before.

• A need to conduct workshops on multi-hazard was recommended with the nature of disaster changing every year.

Mock drill on Glacial Lake Outburst Flood Disaster Response showed direct positive impact on the response and preparedness level among the vulnerable communities.

Recommendations:

- It is recommended to organize and conduct more multi-hazard drills in the country to help increase the level of preparedness of the people who are always the first responders.
- Stakeholder co-ordination and co-operation was vital and necessary in organizing drills and was deemed necessary during real emergencies.
- For security and running EWS, community ownership was found be to be inevitable.

A summary of lessons learnt, experiences and recommendations from the review of training and workshops, and mock drill documents, interviews with key informants and analysis of the data collected:

Recommendations:

- Women's representation as sector focal persons at national level is significantly low (14.3%). There is a need to encourage women's participation, particularly at national level.
- Focal persons accessing climate risk information through Disaster Management Information System are almost non-existent. Therefore, DDM may explore better alternative ways of utilizing climate risk information at the sector levels.
- There is a need for continuous awareness campaign and sharing of information at community level and in vulnerable areas.
- More empirical studies may be conducted on glaciers and climate change, and on the application of state-of-the-art technology to combat and better prepare against the adverse effect of climate change.
- Laws and regulations have been put in place, awareness activities have been carried out to a large extent, yet preparedness against GLOF is however quite low.
- Government and corporate officials have been familiarized with Disaster Management policies and strategies but the DDM has not taken any initiative to familiarize people working in private sector who are also equally vulnerable.
- To carry out risk reduction activities in a planned manner, it is felt that a legal framework like Thromde Disaster Management plan is necessary.
- It is recommended to continue awareness activities and build capacity of planner and policy makers to enable them to mainstream DDR concerns into their plans and policies.
- Evacuation and mockdrills were reported to be very helpful and efforts must continue.
- Dedicated disaster management personnel at *Dzongkhag* level would be helpful. Currently, the focal persons are *Dzongkhag* officials who have their respective primary responsibility. Therefore, DDM may look into the placement of dedicated disaster management personnel at *Dzongkhag* level.
- DDM may look into developing standard training monitoring, reporting and evaluation tools to keep track of training conducted, assess effectiveness and provide support as and when required.
- Focal persons for early warning system are seen to have gone ineffective since the discontinuation of providing mobile vouchers.
- There is a need to create an emergency response funds at *Dzongkhag* and *Gewog* levels.
- Need to conduct of first responder training at *Dzongkhag, Gewog,* and community levels.
- Risk reduction and disaster awareness activities and measures being adopted or carried out by sectors and *Dzongkhags*are project tied and outside the scope of five-year plans. These activities and measures can be mainstreamed or made sustainable by incorporating them into sectors and *Dzongkhags* planned activities.
- DDM to explore other effective options of carrying out awareness and knowledge dissemination activities to reach the intended target audience. Radio programs and messages were reported to be effective media. Even in emergency communication, owing to their reach and access, mobile phones and radio proved to be the two powerful and effectivetools.

It is recommended that DDM consults telecommunication and broadcasting agencies like Bhutan Telecom, Tashi Cell and the Bhutan Broadcasting Service and explore alternative early warning and emergency communication mechanisms.

- Although people have realized the hard way as to why they should insure their homes and other belongings, there are still quite a bit of residents who need to be encouraged and pursued to insure their homes and belongings against such untoward occurrences. DDM may take up with the insurance companies to advocate for and offer such schemes.
- Since co-ordination seems to be weak and ineffective, there is need to re-energize the multisector committees and the teams at the *Dzongkhag* and *Gewog* levels.

# V. CONCLUSION

DDM and its initiatives can be compared to have had "the organic growth" getting their DM Act, 2013 in place after series of deferring the endorsement of DM Bill, 2010 by the previous Government. As a party/signatory to the Hyogo Framework of Action (2005-2015) and having been guided by the NDRMF, 2006 back in the country, DDM has been working on building the capacities of not only the communities to build disaster resilient communities but also built the capacities at the national and district levels in the effort of able to respond to the all forms of natural disasters like earthquakes, wind storms, landslides and floods.

This study "Qualitative Based Survey of Awareness, Preparedness and Response Capacities related to Climate Induced Risks and Vulnerabilites from GLOF" focused particularly on those districts and communities where Capacity Building had happened as part of the Flood Mitigation to minimize losses should there be a GLOF like the one experienced in 1994 and Cyclone Aila 2009 in which many households lost much properties in the form of cattle, land area and loss of some dear ones in the flood.

DDM took the partnership of educating the people of Gasa District at Lunana with the UNDP-GEF funded Thorthormi Lake Lowering Project (2008-2012) for disaster management and building resilience. The said project came as a boon to communities in Wangdue, Punakha and Gasa. When the former two districts benefitted in terms of getting the technical interventions like the Flood Warning Sirens (17 in Punakha-Wangdue Valley), Gasa benefitted socio-economically as the Project contributed to the porterage and labour payments to the communities of Gasa in the Project Period.

This Study focused on the efforts taken by DDM in building capacities of the three districts and the National Level officials by forming Disaster Management Committees at all levels till the village (Chiwog/Community) who were supposed to be the Trainer of Trainers to roll out the activities.

Taking the findings of the quantitative statistical analysis, the qualitative data analysis, review of relevant documents, and the interviews with the informants into account, the study questions on the awareness, preparedness and response capacity can be summed up thus:

DDM has relentlessly carried out an array of awareness raising meetings, trainings, workshops and mockdrills. to sensitize, orient and enhance the awareness and build the capacities of stakeholders, beneficiaries, and counterparts on the natural disasters, in particular the GLOF threat in Bhutan. Significant impact has been created on the ground, especially in Punakha-Wangdue Valleys. Having said that, the Department could do more by developing comprehensive awareness building strategy as part of the National Preparedness and Contingency Plan; and by upscaling systematic awareness, mockdrills and capacity building programs at all levels, including advocacy at decision-making levels.

To a large extent, disaster preparedness has now gained great significance and has been duly integrated as part of the larger development strategy. However, owing to the lack of technical expertise and resources, a few sectors couldn't initiate the formulation of disaster contingency plans and the absence of contingency plans has resulted in the lack of effective coordination, delays in relief distribution and planning for disaster response. Therefore, it is urgent to come up with contingency plans for all sectors at all levels in order to have teams, resources and information flows in the event of emergencies.

Despite the fact that a significant number of respondents were able to prioritize, plan and implement measures to reduce losses from potential GLOF, there is a need to encourage resource sharing and optimize resource acquisition, allocation, and deployment through increased communication, collaboration and standardization.

The study found that much has been achieved by DDM in terms of building preparedness, raising awareness of GLOF and capacity to respond as all of these initiatives showed positive relation to the nation-wide CBDRM training provided by DDM as one of the initial steps. Communities are better informed after the project as it was observed that there were marked changes of awareness levels from 2011 to 2014 with some changes like 50-100 percent awareness levels in some communities and stakeholders.

Implementation of the Land Use Mapping and Hazard Zonation will now become stronger with the DM Act in place and the few households who are still residing in the red zones will have to move/run the risk of not getting insurance should they become victim to flood.

Disaster management has taken good roots in the schools across the country in the form of drills for response to earthquakes and identification of evacuation sites in times of flood.

The National Disster Management Steering Committee, being the over all apex body of implementing orders in times national disasters, similar other committee down the line till the gewog have mandated roles to respond and act in times of a disaster in any part of the country.

Development of documents like the NDRMF, 2006, Rules and Regulations, 2012, DM Policy and Strategy and having DM Plans at all levels of institutions not only in the three districts limited to this study but also in the whole country were all products of DDM's constant effort of raising awareness and making everyone able to respond to unforeseen disasters in their Mission of Building a Disaster Resilient Bhutan are all commendable achievements and the initiatives should keep rolling till each and every citizen of the country can answer "100%Yes" to all the assessment questions of disaster awareness, preparedness and response capacities.

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# 7 APPENDICES

### 7.1 TABLES

### 7.1.1 National Level Tables

Table iii Respondents' profile

NATIONAL LEVEL					
		Frequency	Percent		
Gender	Female	2	14.3		
Γ	Male	12	85.7		
Tot	Total		100		
Household head	No	3	21.4		
Household head	Yes	11	78.6		
Tot	al	14	100		

Table iv Count and percentage of national level focal Persons able to or not able to prioritize, plan and implement measures to reduce human and material losses from potential GLOFs

	NA	<b>FIONAL LE</b>	VEL			
			R	lesponden	ts	
			National	level foca	l persons	
Ability to:		Gender	(counts)	T1	0	/0
		Female	Male	- Total	Female	Male
	Very confident	2	0	2	100	0
Prioritize	Confident	0	12	12	0	100
Phonuze	Not so confident	0	0	0	0	0
	Not confident	0	0	0	0	0
	Total	2	12	2 14 100 10		100
	Very confident	0	0	0	0	0
D1	Confident	2	12	14	100	100
Plan	Not so confident	0	0	0	0	0
	Not confident	0	0	0	0	0
	Total	2	12	14	100	100
	Very confident	0	0	0	0	0
Implement	Confident	0	6	6	0	50
	Not so confident	2	6	8	100	50
	Not confident	0	0	0	0	0
	Total	2	12	14	100	100

Table v Access to climate risk information database

NATIONAL LEVEL							
		Respondents					
		National	level focal	persons			
		Gender (counts) Total				%	
		Female Male		Total	Female	Male	
How often to you access to climate risk information	On a regular basis	0	0	0	0	0	
database?	Sometimes	0	9	9	0	75	
uatabase:	Not at all	2	3	5	100	25	
Total		2	12	14	100	100	

Table vi Utilization of climate risk information

	NAT	IONAL LE	EVEL			
		Respondents National level focal persons				
		Gender (counts) 7 1 %			%	
		Female	Male	Total	Female	Male
Do you utilize alimete risk	Missing	2	3	5	100	25
Do you utilize climate risk information?	No	0	3	3	0	25
momaton	Yes	0	6	6	0	50
Total		2	12	14	100	100

Table vii Participation in any sensitization workshops or trainings organized by DDM

NATIONAL LEVEL								
		Respondents National level focal persons						
		Gender (counts)		Total	%			
		Female	Male	Total	Female	Male		
Have you participated in any sensitization workshops or trainings organized by DDM?	All	0	3	3	0	25		
	Some	2	9	11	100	75		
	Not at all	0	0	0	0	0		
Total		2	12	14	100	100		

Table viii Long-term strategies or activities for GLOF or other hazards

NATIONAL LEVEL								
		Respondents National level focal persons						
		Gender (counts) Female Male		Total	%			
					Female	Male		
Are there any long-term	No	0	3	3	0	25		
prevention/mitigation	Don't know	0	0	0	0	0		
strategies/activities for GLOF or other hazards in your sector's annual or five-year plan?	Yes	2	9	11	100	75		
Total		2	12	14	100	100		

Table ix Awareness on disaster management plans

NATIONAL LEVEL								
		Respondents						
		National level focal persons						
		Gender (counts)		T1	%			
		Female	Male	Total	Female	Male		
Disaster management act of Bhutan - 2013	Don't know	0	0	0	0	0		
	No	0	0	0	0	0		
	Yes	2	12	14	100	100		
Total		2	12	14	100	100		
Community-based disaster risk management (CBDRM)	Don't know	0	3	3	0	25		
	No	0	3	3	0	25		
	Yes	2	6	8	100	50		
Total		2	12	14	100	100		
<i>Gewog</i> disaster management policy and strategy	Don't know	0	3	3	0	25		
	No	2	6	8	100	50		
	Yes	0	3	3	0	25		
Total		2	12	14	100	100		
Dzongkhag disaster management	Don't know	0	0	0	0	0		

policy and strategy	No	0	3	3	0	25
	Yes	2	9	11	100	75
Total		2	12	14	100	100
School disaster management policy and strategy	Don't know	0	0	0	0	0
	No	0	6	6	0	50
	Yes	2	6	8	100	50
Total		2	12	14	100	100
Santan diaastan managamant	Don't know	0	0	0	0	0
Sector disaster management policy and strategy	No	0	6	6	0	50
policy and strategy	Yes	2	6	8	100	50
Total		2	12	14	100	100
National disaster management	Don't know	0	0	0	0	0
National disaster management framework 2006	No	0	3	3	0	25
Hamework 2000	Yes	2	9	11	100	75
Total		2	12	14	100	100

Table x DRR, CCA and sector plans/policies/activities

		NATION	VAL LEV	EL				
					Re	sponder	nts	
				National level focal persons				
				Gender (counts) Total		%	)	
				Female	Male	Iotai	Femal e	Male
		Sector	Don't know	0	0	0	0	0
Do your sector plans,	DRR	plans/policies/ activities	No	0	3	3	0	25
policies and activities have		activities	Yes	2	9	11	100	75
Disaster Risk Reduction		Total		2	12	14	100	100
(DRR) and Climate Change Adaptation (CCA)	CCA	Sector plans/policies/	Don't know	0	0	0	0	0
incorporated into them?		activities	No	0	9	9	0	75
			Yes	2	3	5	100	25
		Total		2	12	14	100	100

Table xi Implementation status of disaster management plans

	NATIONA	AL LEVEL					
		Respondents					
		]	National le	vel focal	persons		
	Gender (	(counts)	Total	%			
		Female	Male	Total	Female	Male	
Do you think that the disaster	In the process of implementation	2	0	2	100	0	
management plans are implemented successfully?	No	0	6	6	0	50	
implemented successfully:	Yes	0	6	6	0	50	
Total	2	12	14	100	100		

Table xii Responsiveness in the event of a disaster

NATIONAL LEVEL							
		Re	spondents	6			
	National level focal persons						
	Gender (	counts)	Total	%			
	Female	Female	Male				

Do you think that you are sector is prepared to respond in the event of a disaster?	Fully prepared	0	3	3	0	25
	Partially prepared	0	6	6	0	50
	Beginning to prepare	2	3	5	100	25
	Not prepared at all	0	0	0	0	0
Total		2	12	14	100	100

Table xiii Preparedness of Dzongkhags after the implementation of the project

	NATIONAL LEVEL								
				Respondents					
		N	Vational le	vel foca	l persons				
		Gender (counts)		Total	%				
		Female	Male I otal		Female	Male			
In your opinion, are the districts now better	Don't know	2	6	8	100	50			
prepared to deal with the GLOF after the	No	0	0	0	0	0			
implementation of the project?	Yes	0	6	6	0	50			
Total		2	12	14	100	100			

Table xiv Relevance, effectiveness, efficiency, sustainability, and impact of the awareness and education programs carried out on the risk of a GLOF

	NATIO	ONAL LEV	EL			
			R	lesponden	ts	
			National	level foca	l persons	
		Gender	(counts)	77 . 1		%
		Female	Male	Total	Female	Male
D 1	Not relevant	0	3	3	0	25
Relevance	Relevant	2	9	11	100	75
Tota	Total		12	14	100	100
	Highly satisfactory	0	3	3	0	25
	Highly unsatisfactory	0	0	0	0	0
Effectiveness	Moderately satisfactory	2	3	5	100	25
	Moderately Unsatisfactory	0	0	0	0	0
	Satisfactory	0	6	6	0	50
	Unsatisfactory	0	0	0	0	0
Tota	ıl	2	12	14	100	100
	Highly satisfactory	0	3	3	0	25
	Highly unsatisfactory	0	0	0	0	0
Efficiency	Moderately satisfactory	0	0	0	0	0
	Moderately unsatisfactory	0	3	3	0	25
	Satisfactory	2	6	8	100	50
	Unsatisfactory	0	0	0	0	0
Tota	ıl	2	12	14	100	100
	Likely	0	6	6	0	50
	Moderately likely	2	6	8	100	50
Sustainability	Moderately Unlikely	0	0	0	0	0
	Unlikely	0	0	0	0	0

Total		2	12	14	100	100
	Minimal	2	3	5	100	25
Impact	Negligible	0	0	0	0	0
	Significance	0	9	9	0	75
Total		2	12	14	100	100

Table xv Relevance, effectiveness, efficiency, sustainability, and impact of the prevention and mitigation activities carried out on the risk of GLOF

	NATIO	ONAL LEV				
				lesponden		
			National	level foca	l persons	
		Gender	(counts)	77 . 1	%	
		Female	Male	Total	Female	Male
D -1	Not relevant	0	3	3	0	25
Relevance	Relevant	2	9	11	100	75
Tota	ıl	2	12	14	100	100
	Highly satisfactory	0	0	0	0	0
Effectiveness	Highly unsatisfactory	0	0	0	0	0
	Moderately satisfactory	2	3	5	100	25
	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	0	9	9	0	75
	Unsatisfactory	0	0	0	0	0
Tota	ıl	2	12	14	100	100
	Highly satisfactory	0	3	3	0	25
	Highly unsatisfactory	0	0	0	0	0
Efficiency	Moderately satisfactory	2	3	5	100	25
	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	0	6	6	0	50
	Unsatisfactory	0	0	0	0	0
Tota	ıl ,	2	12	14	100	100
	Likely	0	6	6	0	50
	Moderately likely	2	6	8	100	50
Sustainability	Moderately Unlikely	0	0	0	0	0
	Unlikely	0	0	0	0	0
Tota		2	12	14	100	100
	Minimal	2	6	8	100	50
Impact	Negligible	0	0	0	0	0
T	Significance	0	6	6	0	50
Tota		2	12	14	100	100

Table xvi Relevance, effectiveness, efficiency, sustainability, and impact of the response capacities

NATIONAL LEVEL								
		R	espondent	s				
		National level focal persons						
		Gender	(counts)	Total	%			
		Female	Male	Female Male				
Relevance	Not relevant	0	3	3	0	25		

	Relevant	2	9	11	100	75
Tota	1	2	12	14	100	100
	Highly satisfactory	0	0	0	0	0
	Highly unsatisfactory	0	0	0	0	0
Effectiveness	Moderately satisfactory	2	6	8	100	50
	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	0	6	6	0	50
	Unsatisfactory	0	0	0	0	0
Tota	1	2	12	14	100	100
	Highly satisfactory	0	0	0	0	0
	Highly unsatisfactory	0	0	0	0	0
Efficiency	Moderately satisfactory	2	6	8	100	50
,	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	0	6	6	0	50
	Unsatisfactory	0	0	0	0	0
Tota	1	2	12	14	100	100
	Likely	0	6	6	0	50
	Moderately likely	0	6	6	0	50
Sustainability	Moderately Unlikely	0	0	0	0	0
	Unlikely	2	0	2	100	0
Tota		2	12	14	100	100
	Minimal	2	9	11	100	75
Impact	Negligible	0	0	0	0	0
1	Significance	0	3	3	0	25
Tota		2	12	14	100	100

Table xvii Opinions about the occurrence of GLOF

NATIONAL LEVEL								
			Re	espondent	S			
	National level focal persons							
		Gender (counts)			%			
		Female	Male	Total	Female	Male		
Do you think you will not experience	No	2	6	8	100	50		
GLOF in winter?	Yes	0	6	6	0	50		
Total 2 12 14 100 100								

Table xviiiRespondents' profile

	PUNAKHA	DZONGKHAG	
		Frequency	Percent
Gender	Female	5	25.0
	Male	15	75.0
Te	otal	20	100.0
Household head	No	5	25.0
Household head	Yes	15	75.0
Te	otal	20	100.0
	WANGDUE PHOD	RANG DZONGKHAG	

		Frequency	Percent
Gender	Female	0	0
	Male	16	100.0
Tota	al	16	100.0
Household head	No	6	37.5
Household head	Yes	10	62.5
Tota	1	16	100.0
100			100.0
		DZONGKHAG	
Gender	BUMTHAG		Percent
		DZONGKHAG Frequency	
	<b>BUMTHAG</b> Female Male	DZONGKHAG Frequency 2	<b>Percent</b> 16.7
Gender Tota	<b>BUMTHAG</b> Female Male	DZONGKHAG Frequency 2 10	Percent 16.7 83.3
Gender	BUMTHAG Female Male al	DZONGKHAG Frequency 2 10 12	Percent 16.7 83.3 100

## 7.1.2 *Dzongkhag* and *Gewog* Level Tables

Table xixCount and percentage of *Dzongkhag* disaster management focal Persons and *Gewog* disaster management committee members trained in the following training

I	PUNAK	HA DZON	GKHAG			
Training			R Ag disaster lisaster mar		ent focal Pe	
8		Gender (counts)				%
		Female	Male	Total	Female	Male
Community-Based Disaster Risk	Yes	4	14	18	80	93
Management (CBDRM)	No	1	1	2	20	7
Total		5	15	20	100	100
Mainstreaming Disaster Risk Reduction	Yes	4	12	16	80	80
(DRR)	No	1	3	4	20	20
Total		5	15	20	100	100
School Disaster Preparedness and	Yes	4	12	16	80	80
Response Training	No	1	3	4	20	20
Total		5	15	20	100	100
Dzong Fire Safety Training	Yes	5	10	15	100	67
Dig The Safety Training	No	0	5	5	0	33
Total		5	15	20	100	100
Others	Yes	5	13	18	100	87
	No	0	2	2	0	13
Total		5	15	20	100	100
WANGI	DUE PH	IODRANG	DZONGK	HAG		
			R	lesponden	ts	
		Dzongkh	ag disaster	managem	ent focal Pe	ersons and
			<i>ag</i> disaster lisaster mar			
Training		Gewog	lisaster mar	agement	committee	
Training		Gewog			committee	members
	Yes	Gewog d Gender	lisaster mar (counts)	agement	committee	members %
Community-Based Disaster Risk	Yes No	Gewog d Gender Female	lisaster mar (counts) Male	Total	committee Female	members % Male
		Gewog d Gender Female	lisaster mar (counts) Male 8	Total	<b>Female</b>	<b>members</b> <b>Male</b> 50
Community-Based Disaster Risk Management (CBDRM) Total		Gewog d Gender Female 0 0	lisaster mar (counts) Male 8 8	Total	committeeFemale00	Members           Male           50           50
Community-Based Disaster Risk Management (CBDRM)	No	Gewog d           Gender           Female           0           0           0	lisaster mar (counts) Male 8 8	Total 8 8 16	Committee           Female           0           0           0           0	Male           50           50           100
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction	No Yes	Gewog d           Gender           Female           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7	agement           Total           8           8           16           7	Committee           Female           0           0           0           0           0           0	Male           50           50           100           44
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total	No Yes	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7 9	agement           Total           8           8           16           7           9	Female         0           0         0           0         0           0         0           0         0           0         0	Male           50           50           100           44           56
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR)	No Yes No	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7 9 16	agement           Total           8           8           16           7           9           16	Female         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0	Male           50           50           100           44           56           100
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and	No Yes No Yes	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7 9 16 16 11	agement           Total           8           8           16           7           9           16           11	Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	Male           50           50           100           44           56           100           69
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training Total	No Yes No Yes	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5	agement           Total           8           8           16           7           9           16           11           5	Female         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0	Male           50           50           50           100           44           56           100           69           31
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training	No Yes No Yes No	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5 16	agement           Total           8           16           7           9           16           11           5           16	Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	Male           50           50           100           44           56           100           69           31           100
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training Total	No Yes No Yes Yes	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5 16 6	agement of           Total           8           8           16           7           9           16           11           5           16           6	Committee           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	Male           50           50           100           44           56           100           69           31           100           38
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training Total Dzong Fire Safety Training Total	No Yes No Yes Yes	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5 16 6 10	agement           Total           8           16           7           9           16           11           5           16           6           10	Female         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0	members           Male           50           50           100           44           56           100           69           31           100           38           63
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training Total Dzong Fire Safety Training	No Yes No Yes No	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5 16 6 10 16	agement           Total           8           8           16           7           9           16           11           5           16           6           10           16	Female         O           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0	Male           50           50           50           100           44           56           100           69           31           100           38           63           100
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training Total Dzong Fire Safety Training Total	No Yes No Yes No Yes	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5 16 6 10 16	agement           Total           8           8           16           7           9           16           11           5           16           6           10           16           15	Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	members           %           Male           50           50           100           44           56           100           69           31           100           38           63           100           94
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training Total Dzong Fire Safety Training Total Others Total	No Yes No Yes No Yes No	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5 16 6 10 16 6 10 16 15 1 1 16	agement           Total           8           8           16           7           9           16           11           5           16           6           10           16           16           16           1           1           1           1           1           1	Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	members           %           Male           50           50           100           44           56           100           69           31           100           38           63           100           94           6
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training Total Dzong Fire Safety Training Total Others Total	No Yes No Yes No Yes No	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5 16 6 10 16 15 1 16 15 1 16 NGKHAG	agement of           Total           8           8           16           7           9           16           11           5           16           11           5           16           11           5           16           10           16           15           1           16	Female         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0	members           %           Male           50           50           100           44           56           100           69           31           100           38           63           100           94           6
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training Total Dzong Fire Safety Training Total Others Total	No Yes No Yes No Yes No	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5 16 6 10 16 16 15 1 1 16 NGKHAG	agement of           Total           8           8           16           7           9           16           11           5           16           10           16           15           1           16           8           8           16           5           16           6           10           16           15           1           16	Committee           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	members           Male           50           50           100           44           56           100           69           31           100           38           63           100           94           6           100
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training Total Dzong Fire Safety Training Others B	No Yes No Yes No Yes No	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0      0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5 16 6 10 16 6 10 16 15 1 16 15 1 16 8 <b>KHAG</b> <b>R</b> ag disaster	agement of       Total       8       8       16       7       9       16       11       5       16       10       16       10       15       1       16       10       16       10       16       10       16       10       16       10       16       10       16       10       10       10       10       10       10	committee           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	members           Male           50           50           50           100           44           56           100           69           31           100           38           63           100           94           6           100           ersons and
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training Total Dzong Fire Safety Training Total Others Total	No Yes No Yes No Yes No	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0      0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5 16 6 10 16 15 1 16 NGKHAG R ag disaster mar	agement of       Total       8       8       16       7       9       16       11       5       16       10       16       10       15       1       16       10       16       10       16       10       16       10       16       10       16       10       16       10       10       10       10       10       10	committee           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	members           %           Male           50           50           100           44           56           100           69           31           100           38           63           100           94           6           100           ersons and           members
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training Total Dzong Fire Safety Training Others B	No Yes No Yes No Yes No	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0      0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5 16 6 10 16 15 16 16 15 1 16 NGKHAG R ag disaster mar (counts)	agement of       Total       8       8       16       7       9       16       11       5       16       10       16       10       15       1       16       10       16       10       16       10       16       10       16       10       16       10       16       10       10       10       10       10       10	Female         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0	members           %           Male           50           50           100           44           56           100           69           31           100           38           63           100           94           6           100           ersons and           members           %
Community-Based Disaster Risk Management (CBDRM) Total Mainstreaming Disaster Risk Reduction (DRR) Total School Disaster Preparedness and Response Training Total Dzong Fire Safety Training Others B	No Yes No Yes No Yes No	Gewog d           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0      0	lisaster mar (counts) Male 8 8 16 7 9 16 11 5 16 6 10 16 15 1 16 NGKHAG R ag disaster mar	agement of       Total       8       8       16       7       9       16       11       5       16       10       16       16       16       16       16       16       16       16       16       16       16       16       16       16       16       16       16       agement of	committee           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	members           %           Male           50           50           100           44           56           100           69           31           100           38           63           100           94           6           100           ersons and           members

Management (CBDRM)	No	1	2	3	50	20
Total		2	10	12	100	100
Mainstreaming Disaster Risk Reduction	Yes	1	6	7	50	60
(DRR)	No	1	4	5	50	40
Total		2	10	12	100	100
School Disaster Preparedness and	Yes	2	8	10	100	80
Response Training	No	0	2	2	0	20
Total		2	10	12	100	100
Decome Fire Safety Training	Yes	0	3	3	0	30
Dzong Fire Safety Training	No	2	7	9	100	70
Total		2	10	12	100	100
Others	Yes	1	9	10	50	90
Others	No	1	1	2	50	10
Total	•	2	10	12	100	100

Table xxCount and percentage of *Dzongkhag* disaster management focal Persons and *Genog* disaster management committee members who participated in awareness activities

	PUNAK	HA DZON	GKHAG					
			R	esponden	ts			
Awareness Activities		Dzongkhag disaster management focal Persons a Gewog disaster management committee membe						
		Gender	(counts)	Texal		%		
		Female	Male	Total	Female	Male		
Mock drill	Yes	4	7	11	80	47		
MOCK UHII	No	1	8	9	20	53		
Total	·	5	15	20	100	100		
Workshops	Yes	4	6	10	80	40		
Workshops	No	1	9	10	20	60		
Total	·	5	15	20	100	100		
Maatinga	Yes	3	7	10	60	47		
Meetings	No	2	8	10	40	53		
Total	-	5	15	20	100	100		
Others	Yes	5	14	19	100	93		
Others	No	0	1	1	0	7		
Total	•	5	15	20	100	100		

### WANGDUE PHODRANG DZONGKHAG

			R	esponden	ts	
		Dzongkh	<i>ag</i> disaster 1	managem	ent focal P	ersons and
Awareness Activities	Gewog disaster manag			committee	members	
		Gender	(counts)	Total		%
		Female	Male	Total	Female	Male
Mock drill	No	0	7	7	0	44
MOCK UHII	Yes	0	9	9	0	56
Total	·	0	16	16	0	100
Werkshere	No	0	6	6	0	38
Workshops	Yes	0	10	10	0	63
Total		0	16	16	0	100
Mastings	No	0	4	4	0	25
Meetings	Yes	0	12	12	0	75
Total		0	16	16	0	100
Others	No	0	0	0	0	0
Others	Yes	0	0	0	0	0

Total	Total		0	0	0	0
	BUMTH	ANG DZO	NGKHAG			
			R	espondent	ts	
	Dzongkh	ag disaster	manageme	ent focal Po	ersons and	
Awareness Activities		Gewog	lisaster man	agement o	committee	members
		Gender	(counts)	Tatal		%
		Female	Male	Total	Female	Male
Mock drill	No	0	5	5	0	50
MOCK UHII	Yes	2	5	7	100	50
Total		2	10	12	100	100
Washababa	No	1	6	7	50	60
Workshops	Yes	1	4	5	50	40
Total		2	10	12	100	100
Maatinga	No	0	4	4	0	40
Meetings	Yes	2	6	8	100	60
Total		2	10	10	100	100
Others	No	1	9	10	50	90
Oulers	Yes	1	1	2	50	10
Total		2	10	12	100	100

Table xxi Count and percentage of the opinions of *Dzongkhag* disaster management focal Persons and *Gewog* disaster management committee memberson the usefulness of awareness activities

		Respondents						
		Dzongkhag disaster management focal Persons and Gewog disaster management committee members						
	Gender	(counts)	77 - 1	0	/0			
	Female	Male	- Total	Female	Male			
	Usefulness of Mock	drill						
Not relevant	4	5	9	80	33			
Not useful	0	0	0	0	0			
Useful	0	6	6	0	40			
Very useful, relevant and applicable	1	4	5	20	27			
Total	5	15	20	100	100			
Not relevant	3	4	7	60	27			
Not useful	0	0	0	0	0			
Useful	1	5	6	20 20	<u>33</u> 40			
		-	-	100	40			
Very useful, relevant and applicable		15	20		100			
Very useful, relevant and applicable Total	5	15	20	100	100			
	5 Usefulness of Meet		20	100	100			
			20	40	33			
Total	Usefulness of Meet	ings						
Total Not relevant Not useful	Usefulness of Meet	ings 5	7	40	33			
Total	Usefulness of Meet	tings 5 0	7	40 0	<u> </u>			

Not relevant	5	14	19	100	93
Not useful	0	0	0	0	0
Useful	0	0	0	0	0
Very useful, relevant and applicable	5	14	19	100	93
Total	5	15	20	100	100
WANGDU	E PHODRANG	DZONGK	HAG		
		R	lesponden	ts	
	Dzongkh	ag disaster			ersons and
		lisaster mar			
		(counts)			%
	Female	Male	Total	Female	Male
	Usefulness of Moc	k drill	•		
Not relevant	0	5	5	0	31
Not useful	0	0	0	0	0
Useful	0	5	5	0	31
Very useful, relevant and applicable	0	6	6	0	38
Total	0	16	16	0	100
	Usefulness of Worl	*	1		
Not relevant	0	5	5	0	31
Not useful	0	0	0	0	0
Useful	0	4	4	0	25
Very useful, relevant and applicable	0	7	7	0	44
Total	0	16	16	0	100
	Usefulness of Mee	etings			
Not relevant	0	6	6	0	38
Not useful	0	0	0	0	0
Useful	0	5	5	0	31
Very useful, relevant and applicable	0	5	5	0	31
Total	0	16	16	0	100
Usefuln	ess of Other Aware	ness Activities	3		
Not relevant	0	0	0	0	0
Not useful	0	0	0	0	0
Useful	0	0	0	0	0
Very useful, relevant and applicable	0	0	0	0	0
Total	0	0	0	0	0
BUN	ITHANG DZO				
			lesponden		
		ag disaster			
		lisaster mar	nagement	1	
		(counts)	Total		%
	Female	Male	Iotai	Female	Male
	Usefulness of Moc	k drill			

Not relevant	0	5	5	0	50
Not useful	0	0	0	0	0
Useful	2	3	5	100	30
Very useful, relevant and applicable	0	2	2	0	20
Total	2	10	12	100	100
τ	Usefulness of Wor	kshops			
Not relevant	1	6	7	50	60
Not useful	0	0	0	0	0
Useful	1	2	3	50	20
Very useful, relevant and applicable	0	2	2	0	20
Total	2	10	12	100	100
Not relevant	0	4	4	0	40
Not useful	0	0	0	0	
Useful	2	4	6	100	40
Very useful, relevant and applicable	0	2	2	0	20
Total	2	10	12	100	100
Usefulne	ess of Other Aware	eness Activities			
Not relevant	1	9	10	50	90
Not useful	0	0	0	0	0
Useful	1	1	2	50	10
Very useful, relevant and applicable	0	0	0	0	0
Total	2	10	12	100	100

Table xxii Count and percentage of *Dzongkhag* disaster management focal Persons and *Gewog* disaster management committee membersable to prioritize, plan and implement measures to reduce human and material losses from potential GLOFs

PUNAKHA DZONGKHAG						
			R	espondent	ts	
		Dzongkh	<i>ag</i> disaster 1	nanageme	ent focal Po	ersons and
Ability to:		Gewog	lisaster man	agement o	committee	members
		Gender	(counts)	Total		%
	Female M				Female	Male
	No	1	4	5	20	27
Prioritize	Don't know	2	0	2	40	0
	Yes	2	11	13	40	73
Total		5	15	20	100	100
	No	0	5	5	0	33
Plan	Don't know	2	2	4 40		13
	Yes	3	8	11	60	53
Total		5	15	15 20 100 100		100
	No	0	5	5	0	33
Implement	Don't know	3	3	6	60	20
	Yes	2	7	9	40	47

Total		5	15	20	100	100
	WANGDUE PH	IODRANG	DZONGK	HAG		
			R	lesponden	ts	
		Dzongkh	ag disaster	manageme	ent focal Pe	ersons and
Ability to:			lisaster man			
2			r (counts)			%
		Female	Male	Total	Female	Male
	No	0	3	3	0	19
Prioritize	Don't know	0	3	3	0	19
	Yes	0	10	10	0	63
Total		0	16	16	0	100
	No	0	3	3	0	19
Plan	Don't know	0	1	1	0	6
	Yes	0	12	12	0	75
Total		0	16	16	0	100
	No	0	3	3	0	19
Implement	Don't know	0	6	6	0	38
	Yes	0	7	7	0	44
Total		0	16	16	0	100
	BUMTH	ANG DZO	NGKHAG			
			R	lesponden	ts	
		Dzongki	hag disaster	managem	ent focal P	ersons and
Ability to:			lisaster man			
5			(counts)			%
		Female	Male	Total	Female	Male
	No	1	1	2	50	10
Prioritize	Don't know	0	2	2	0	20
	Yes	1	7	8	50	70
Total		2	10	12	100	100
	No	1	0	1	50	0
Plan	Don't know	0	2	2	0	20
	Yes	1	8	9	50	80
Total	·	2	10	12	100	100
	No	1	1	2	50	10
Implement	Don't know	0	2	2	0	20
*	Yes	1	7	8	50	70
	res	1	/	0	50	70

Table xxiii Count and percentage of *Dzongkhag* disaster management focal Persons and *Gewog* disaster management committee members' opinions on whether disaster management guidelines and frameworks support climate change adaptation efforts

PUNAKHA DZONGKHAG								
		Respondents						
Dzongkhag disaster management focal Persons an				s and Gewog				
		disaster management committee members				bers		
		Gender	(counts)	Total	%			
		Female	Male	Total	ocal Persons an nittee members	Male		
Do you think that the disaster	No	0	1	1	0	7		
management guidelines and	Don't know	5	3	8	100	20		
frameworks support climate change adaptation efforts?	Yes	0	11	11	0	73		
Total	Total 5 15 20 100				100			
W	ANGDUE PH	IODRANG	DZONGKI	HAG				

			R	espondent	s		
		Dzongkh	ag disaster 1	manageme	ent focal P	ersons and	
		Gewog	lisaster man	agement o	committee	members	
		Gender	(counts)	Total		%	
		Female	Male	Total	Female	Male	
Do you think that the disaster	No	0	0	0	0	0	
management guidelines and	Don't know	0	7	7	0	44	
frameworks support climate change adaptation efforts?	Yes	0	9	9	0	56	
Total		0	16	16	0 100		
	BUMTH	ANG DZO	NGKHAG				
			R	espondent	<b>S</b>		
		Dzongkh	ag disaster 1	manageme	ent focal P	ersons and	
		Gewog	lisaster man	agement o	committee	members	
		Gender	(counts)	7.4.1		%	
		Female	Male	Total	Female	Male	
Do you think that the disaster	No	0	0	0	0	0	
management guidelines and	Don't know	0	5	5	0	50	
frameworks support climate change adaptation efforts?	Yes	2	5	7	100	50	
Total		2	10	12	100	100	

Table xxivRespondents' profile

	GASA DZONGKHAG						
		Frequency	Percent				
Gender	Female	2	18.2				
	Male	9	81.8				
Тс	otal	11	100.0				
Litomory	Illiterate	0	0				
Literacy	Literate	11	100.0				
Тс	otal	11	100.0				

Table xxvParticipation in disaster related awareness workshop

GASA DZONGKHAG								
		Respondents						
	Dzong	Dzongkhag disaster management focal						
		Persons	and Ge	<i>wog</i> disas	ster mana	gement		
			comn	nittee me	mbers	_		
				Tadal	Seter management focal           total           %           Total         %           Total $e$ Male           11         100         100           0         0         0           11         100         100           11         100         100           11         0         0           0         0         0			
		Female	Male	Total		Male		
Have you participated in disaster related	No	2	9	11	100	100		
awareness workshop?	Yes	0	0	0	0	0		
Total		2	9	11	100	100		
Have you participated in GLOF and early	No	2	9	11	100	100		
warning sensitization training/workshop?	Yes	0	0	0	0	0		
Total		2	9	11	100	100		
Have you participated in any mock drill?	No	2	9	11	100	100		
Trave you participated in any mock unit!	Yes	0	0	0	0	0		

Total		2	9	11	100	100
Have you attended any training or workshops	No	2	9	11	100	100
outside Bhutan?	Yes	0	0	0	0	0
Total		2	9	11	100	100
Have you been twined in CRDBM)	No	2	9	11	100	100
Have you been trained in CBDRM?	Yes	0	0	0	100 0 100	0
Total		2	9	11	100	100

Table xxviDisaster management plans in place

GASA DZONGKHAG								
	Respondents							
	Dzongkhag disaster management focal Persons and Gewog							
		disaster management committee members						
	Gender	(counts)	Total	%				
	Female	Male	Total	Female	Male			
Community DMP	2	5	7	100	56			
Gewog DMP	0	3	3	0	33			
Dzongkhag DMP	0	1	1	0	11			
Total	2	9	11	100	100			

Table xxviiRequirements of women and disaster management plans

GAS	A DZONO	GKHAG					
		Respondents					
		Dzongkhag disaster management foca Persons and Gewog disaster manageme committee members					
		Gender (counts)		Total	%		
		Female	Male	Total	Femal e	Male	
In your opinion, does the disaster management	No	2	1	3	100	11	
plan address the requirements of women	Don't know	0	1	1	0	11	
adequately?	Yes	0	7	7	0	78	
Total		2	9	11	100	100	
Do you think that the guidelines and frameworks support the climate change adaptation efforts?	No	2	2	4	100	22	
	Don't know	0	3	3	0	33	
adaptation enorts:		0	44				
Total		2	9	11	100	100	
	No	2	2	4	100	22	
Do the disaster management plans consider long term climate risk?	Don't know	0	2	2	0	22	
	Yes	0	5	5	nagement           ter management           mbers           %           Femal           e           100           0           100           0           0           0           0           100           0           100           100           0           100           100           100	56	
Total		2	9	11	100	100	
	No	2	1	3	100	11	
Do you know how to address long term climate risk?	Don't know	0	2	2	0	22	
	Yes	0	6	6	0	67	
Total		2	9	11	100	100	
Do you think that you will be able to prioritize,	No	2	2	4	100	22	
plan and implement measure to reduce human	Don't know	0	1	1	0	11	
and material losses from potential GLOF?	Yes	0	6	6	0	67	

Total		2	9	11	100	100
	No	2	3	5	100	33
Were the trainings and workshops relevant to your functions or community needs?	Don't know	0	0	0	0	0
	Yes	0	6	6	0	67
Total		2	9	11	100	100
	No	2	3	5	100	33
Was the district/community GLOF risk assessment conducted?	Don't know	0	4	4	0	44
	Yes	0	2       3       5       100         0       0       0       0       0         0       6       6       0       2         2       9       11       100       100         2       9       11       100       100         2       9       11       100       100         2       3       5       100       100         0       4       4       0       100         0       2       2       0       100         2       9       11       100       100         2       2       4       100       100         0       5       5       0       100         0       0       0       0       0       0         0       0       0       0       0       0         2       9       11       100       100       100         2       9       11       100       100       100         2       9       11       100       100       100         2       9       11       100       100       10	22		
Total		2	9	11	100	100
	No	2	2	4	100	22
Are you aware of the GLOF hazard zonation for your district/community?	Don't know	0	2	2	0	22
, <u>,</u>	Yes	0	5	5	0	56
Total		2	9	11	100	100
	No	0	0	0	0	0
In the high risk zones, are people still constructing new houses for settlement?	Don't know	0	0	0	0	0
	Yes	2	9	11	100	100
Total			9		100	100
	No	2	3	5	100	33
Do you think that people are better prepared to deal with natural disaster than 3 years ago?	Don't know	0	3	3	0	33
	Yes	0	3	3	0	33
Total		2	9	11	100	100
	No	2	2	4	100	22
Are there any long term prevention strategies for GLOF in the district work plan?	Don't know	0	4	4	0	44
*	Yes	0	3	3	0	33
Total		2	9	11	100	100

### Table xxviiiDisaster management plans in place

	GASA	DZONG	KHAG			
			R	espondent	ts	
		Dzongkh	<i>ag</i> disaster r	nanageme	ent focal Pe	ersons and
		Gewog	lisaster man	agement o	committee	members
		Gender	(counts)	T 1		%
		Female	Male	Total	committee member	Male
Disaster management bill	Yes	0	1	1	0	11
	No	2	4	6	100	44
Disaster management bill	Don't know	0	3	3	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	33
	Not applicable	0	1	1	0	11
Total		2	9	11	100	100
	Yes	0	3	3	0	33
CBDRM	No	2	4	6	100	44
CBDIAM	Don't know	0	2	2	0	22
	Not applicable	0	0	0	0	0
Total		2	9	11	100	100
Campage disaster management	Yes	0	2	2	0	22
Gewog disaster management	No	2	5	7	100	56
plan	Don't know	0	2	2	0	22

	Not applicable	0	0	0	0	0
Total		2	9	11	100	100
	Yes	0	2	2	0	22
Dzongkhag disaster management	No	2	5	7	100	56
plan	Don't know	0	2	2	0	22
	Not applicable	0	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0		
Total		2	9	11	100	100
	Yes	0	5	5	0	56
Schooldisaster management	No	2	2	4	100	22
plan	Don't know	0	2	2	0	22
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0				
Total		2	9	11	100	100
	Yes	0	3	3	0	33
Sectordisaster management	No	2	3	5	100	33
plan	Don't know	0	3	3	0	33
	Not applicable	0	0	0	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0
Total		2	9	11	100	100
	Yes	0	0	0	0	0
Any others	No	2	7	9	100	78
Any others	Don't know	0	2	2	0	22
	Not applicable	0	0	0	0	0
Total		2	9	11	100	100

Table xxixParticipation in the development of disaster management plans

GAS	A DZONO	GKHAG				
		Respondents				
		Dzongkhag disaster management foca Persons and Gewog disaster management committee members				
		Gender (counts) Total			0/	0
		Female	Male	10(a)	Femal         e           100         0           0         0           100         0           0         100           0         0           0         0           0         0           0         0           0         0	Male
	No	2	4	6	100	44
Have you taken part in the development of any disaster management plans?	Don't know	0	0	0	0	0
	Yes	0	5	5	0	56
Total		2	9	11	100	100
	No	2	0	2	100	0
Do you think such plans are useful?	Don't know	0	2	2	0	22
	Yes	0	7	7	0	78
Total		2	9	11	100	100
	No	2	2	4	100	22
Do you think that the plans are implemented successfully?	Don't know	0	4	4	0	44
	Yes	0	3	3	0	33
Total		2	9	11	100	100

Table xxx Responsiveness in the event of a disaster

	GASA DZON	GKHAG				
		Respondents				
		Dzongkhag disaster management focal				
		Persons and Gewog disaster management				ment
			commit	tee mem	oers	
		Gender (	counts)		%	
		Female	Male	Total	Femal	Mal
		Female	Wale		e	e
Do you think that your	Fully prepared	0	3	3	0	33
Do you think that your Dzongkhag/Gewog/sector is	Partially prepared	0	4	4	0	44
prepared to respond in the	Beginning to prepare	0	1	1	0	11
event of a disaster?	Not prepared at all	0	0	0	0	0
event of a disaster!	Don't know	2	1	3	100	11
Total		2	9	11	100	100

Table xxxiAwareness on National Disaster Risk Management Framework (NDRMF)

	GAS	A DZONGI	KHAG			
				Respo	ndents	
		Dzongk	<i>hag</i> disas	ster mana	gement fo	cal Persons and
						nittee members
		Gender (				%
		Female	Male	Total	Femal e	Male
	Missing	0	0	0	0	0
Are you aware of the National	No	1	6	7	50	67
Disaster Risk Management Framework?	Not applicable	0	0	0	0	0
Framework?	Yes	1	3	4	50	33
Total		2	9	11	100	100
	Missing	0	0	0	0	0
Are you aware of the district	No	0	5	5	0	56
hazard zonation map for GLOF?	Don't know	0	0	0	0	0
	Yes	2	4	6	100	44
Total		2	9	11	100	100
Are you aware of the circular on	Missing	0	0	0	0	0
land use based on the Dzongkhag	No	0	3	3	0	33
hazard zonation map for	Don't know	0	0	0	0	0
GLOF?	Yes	2	6	8	100	67
Total		2	9	11	100	100
	Missing					
Are you aware of the early	No	0	1	1	0	11
warning systems being installed?	Don't know	0	0	0	0	0
	Yes	2	8	10	100	89
Total		2	9	11	100	100
Did the committee identify safe	Missing	0	0	0	0	0
evacuation area for the	No	0	4	4	0	44
community?	Don't know	0	1	1	0	11
	Yes	2	4	6	100	44
Total		2	9	11	100	100

	PUNAK	HA DZON	GKHAG				
			R	espondent	ts		
		Dzongkh	<i>ag</i> disaster r	nanageme	ent focal Po	ersons and	
			lisaster man				
			(counts)			%	
		Female	Male	Total	Female	Male	
Do you incorporate long-term	No	1	5	6	20	33	
climate risk planning into your	Don't know	4	6	10	80	40	
ongoing DRM responsibilities in your project areas?	Yes	0	4	4	0	27	
Total		5	15	20	100	100	
W	ANGDUE PH	IODRANG	DZONGKI	HAG			
			R	espondent	ts		
		Dzongkhag disaster management focal Persons and					
		Gewog disaster management committee members					
		Gender	(counts)	Total	%		
		Female	Male	Total	Female	Male	
Do you incorporate long-term	No	0	6	6	0	38	
climate risk planning into your	Don't know	0	4	4	0	25	
ongoing DRM responsibilities in your project areas?	Yes	0	6	6	0	38	
Total		0	16	16	0	100	
	BUMTH	ANG DZO	NGKHAG				
			R	espondent	ts		
		Dzongkh	<i>ag</i> disaster r	nanageme	ent focal Po	ersons and	
		Gewog	lisaster man	agement o	committee	members	
		Gender	(counts)	Total		%	
		Female	Male	Total	Female	Male	
Do you incorporate long-term	No	0	1	1	0	10	
climate risk planning into your	Don't know	1	8	9	50	80	
ongoing DRM responsibilities in your project areas?	Yes	1	1	2	50	10	
Total		2	10	12	100	100	

Table xxxiiIncorporation of long-term climate risk planning into ongoing DRM responsibilities

Table xxxiiiDisaster management plans in place

	PUNAK	HA DZON	GKHAG			
			R	espondent	s	
		Dzongkh	<i>ag</i> disaster r	nanageme	ent focal P	ersons and
		Gewog	lisaster man	agement o	committee	members
		Gender	(counts)	Total		%
	Female	Male	Total	Female	Male	
	Missing	0	0	0	0	0
Community DMD	No	0	4	4	0	27
Community DMP	Don't know	3	4	7	60	27
	Yes	2	7	9	40	47
Total		5	15	20	100	100
	Missing	0	0	0	0	0
Gewog DMP	No	1	4	5	20	27
	Don't know	2	7	9	40	47

		Yes	2	4	6	40	27
	Total		5	15	20	100	100
		Missing	0	0	0	0	0
		No	0	3	3	0	20
Dzongkhag DMP		Don't know	3	8	11	60	53
		Yes	2	4	6	40	27
	Total		5	15	20	100	100
		WANGDUE PH	IODRANG	DZONGKI			
					espondent	s	
			Dzongkh	<i>ag</i> disaster r			ersons and
				lisaster man			
				(counts)			%
			Female	Male	Total	Female	Male
		Missing	0	3	3	0	19
		No	0	5	5	0	31
Community DMP		Don't know	0	3	3	0	19
		Yes	0	5	5	0	31
	Total		0	16	16	0	100
		Missing	0	5	5	0	31
		No	0	4	4	0	25
Gewog DMP		Don't know	0	3	3	0	19
		Yes	0	4	4	0	25
	Total		0	16	16	0	100
		Missing	0	4	4	0	25
$D_{1}$		No	0	2	2	0	13
Dzongkhag DMP		Don't know	0	3	3	0	19
		Yes	0	7	7	0	44
	Total		0	16	16	0	100
		BUMTH	ANG DZO	NGKHAG			
				R	espondent	s	
			Dzongkh	<i>ag</i> disaster r			ersons and
				lisaster man			
				(counts)			%
			Female	Male	Total	Female	Male
		Missing	0	1	1	0	10
0		No	1	4	5	50	40
Community DMP		Don't know	1	1	2	50	10
		Yes	0	4	4	0	40
	Total	•	2	10	12	100	100
		Missing	0	3	3	0	30
		No	1	6	7	50	60
Gewog DMP		Don't know	1	1	2	50	10
		Yes	0	0	0	0	0
	Total	•	2	10	12	100	100
		Missing	0	2	2	0	20
Devengh hag DMD		No	0	4	4	0	40
Dzongkhag DMP		Don't know	0	1	1	0	10
		Yes	2	3	5	100	30

	PUNAK	HA DZON	GKHAG			
				espondent	s	
		Dzongkh	ag disaster 1	_		ersons and
		0	lisaster man	0		
			(counts)			%
		Female	Male	Total	Female	Male
Are you aware of your roles and	No	2	1	3	40	7
responsibilities in a disaster	Can't say	2	7	9	40	47
situation?	Yes	1	7	8	20	47
Total		5	15	20	100	100
W	ANGDUE PH	IODRANG	DZONGKI	HAG		
			R	espondent	S	
		Dzongkhag disaster management focal Persons and				
		Gewog disaster management committee members				
		Gender (counts)				%
		Female	Male	Total	Female	Male
Are you aware of your roles and	No	0	2	2	0	13
responsibilities in a disaster	Can't say	0	2	2	0	13
situation?	Yes	0	12	12	0	75
Total		0	16	16	0	100
	BUMTH	ANG DZO	NGKHAG			
			R	espondent	s	
		Dzongkh	<i>ag</i> disaster r	nanageme	ent focal Po	ersons and
			lisaster man			
		Gender	(counts)	T1		%
		Female	Male	Total	Female	Male
Are you aware of your roles and	No	0	0	0	0	0
responsibilities in a disaster	Can't say	0	4	4	0	40
situation?	Yes	2	6	8	100	60
Total		2	10	12	100	100

Table xxxivAwareness of roles and responsibilities in a disaster situation

Table xxxvAssessment of to what extent the needs of different groups are addressed

PUNAKHA DZONGKHAG										
			R	espondent	ts					
		Dzongkh	ag disaster 1	nanageme	ent focal P	ersons and				
Needs of:		Gewog	lisaster man	agement o	committee	members				
		Gender	(counts)	T1		%				
			Male	Total	Female	Male				
	Don't know	0	0	0	0	0				
Men	Fully addressed	3	8	11	60	53				
Men	Not at all addressed	2	3	5	40	20				
	Partially addressed	0	4	4	0	27				
	Total	5	15	20	100	100				
	Don't know	0	0	0	0	0				
Women	Fully addressed	1	5	6	20	33				
wonnen	Not at all addressed	2	3	5	40	20				
	Partially addressed	2	7	9	40	47				
Total		5	15	20	100	100				
	Don't know	0	0	0	0	0				
Boys	Fully addressed	0	8	8	0	53				
	Not at all addressed	3	3	6	60	20				

	Partially addressed	2	4	6	40	27							
	Total	5	4	20	100	100							
	Don't know	0	0 5	0	0	0							
Girls	Fully addressed	0		5	ÿ	33							
	Not at all addressed	3	3	6	60	20							
	Partially addressed	2	7	9	40	47							
	Total		15	20	100	100							
	WANGDUE	PHODRANG											
			Respondents										
			ag disaster										
Needs of:			lisaster mar	agement o									
		Gender	(counts)	Total		%							
		Female	Male	10121	Female	Male							
	Don't know	0	2	2	0	13							
м	Fully addressed	0	9	9	0	56							
Men	Not at all addressed	0	2	2	0	13							
	Partially addressed	0	3	3	0	19							
	Total	0	16	16	0	100							
	Don't know	0	2	2	0	13							
	Fully addressed	0	5	5	0	31							
Women	Not at all addressed	0	3	3	0	19							
	Partially addressed	0	6	6	0	38							
	Total	0	16	16	0	100							
Boys	Don't know	0	2	2	0	13							
	Fully addressed	0	8	8	0	50							
	Not at all addressed	0	3	3	0	19							
	Partially addressed	0	3	3	0	19							
	Total	0	16	16	0	100							
	Don't know	0	2	2	0	13							
	Fully addressed	0	5	5	0	31							
Girls	Not at all addressed	0	4	4	0	25							
	Partially addressed	0	5	5	0	23							
	Total	0	16	16	0	100							
	1000	0	10	10	0	100							
	BUMT	HANG DZO	NGKHAG										
	20111			lesponden	ts								
		Dzonakł	ag disaster			ersons and							
Needs of:			lisaster mar										
INCCUS OI.			(counts)		1	%							
			` /	Total									
	Develtation	Female	Male	2	Female	Male							
	Don't know	0	2	2	0	20							
Men	Fully addressed	2	6	8	100	60							
	Not at all addressed	0	0	0	0	0							
	Partially addressed	0	2	2	0	20							
	Total	2	10	12	100	100							
	Don't know	0	2	2	0	20							
Women	Fully addressed	2	1	3	100	10							
	Not at all addressed	0	1	1	0	10							
		0	6	6	0	60							
	Partially addressed	-				400							
	Total	2	10	12	100	100							
	Total Don't know	2 0	2	2	0	20							
Boys	Total	2			+								

	Partially addressed	0	4	4	0	40
	Total		10	12	100	100
	Don't know	0	2	2	0	20
Girls	Fully addressed	2	2	4	100	20
GIIIS	Not at all addressed					
	Partially addressed	0	6	6	0	60
	Total		10	12	100	100

Table xxxviAwareness level of vulnerability and risk assessment

	PUNAK	HA DZON	GKHAG			
			R	espondent	ts	
		Dzongkh	<i>ag</i> disaster 1	nanageme	ent focal P	ersons and
			lisaster man			
		U	(counts)			%
		Female	Male	Total	Female	Male
	Missing	0	1	1	0	7
How do you rate the awareness	High	1	7	8	20	47
level of vulnerability and risk	Medium	2	6	8	40	40
assessment in your community	Low	2	1	3	40	7
after the implementation of the project?	Same as before	0	0	0	0	0
Total		5	15	20	100	100
W	ANGDUE PH	IODRANG	DZONGKI	HAG		
			R	esponden	ts	
		Dzongkhag disaster management focal Persons and				
		Gewog	lisaster man	agement o	committee	members
		Gender (counts)				
		Female	Total	Female	Male	
	Missing	0	3	3	0	19
How do you rate the awareness	High	0	6	6	0	38
level of vulnerability and risk	Medium	0	6	6	0	38
assessment in your community after the implementation of the	Low	0	1	1	0	6
project?	Same as before	0	0	0	0	0
Total		0	16	16	0	100
	BUMTH	ANG DZO	NGKHAG			
			R	espondent	ts	
		Dzongkh	<i>ag</i> disaster 1	nanageme	ent focal P	ersons and
		Gewog	lisaster man	agement o	committee	members
		Gender	(counts)	Total		%
		Female	Male	Total	Female	Male
Llow do you gets the average	Missing	0	3	3	0	30
How do you rate the awareness	High	1	3	4	50	30
level of vulnerability and risk assessment in your community	Medium	1	4	5	50	40
after the implementation of the	Low	0	0	0	0	0
project?	Same as before	0	0	0	0	0
Total		2	10	12	100	100

Table xxxviiLevel of awareness on the enforcement of circular about the land use based on GLOF hazard zonation mapping issued by MoHCA

	PUNAK	HA DZON	GKHAG				
			R	espondent	ts		
		Dzongkh	ag disaster			ersons and	
			disaster man				
			(counts)			2/0	
		Female	Male	Total	Female	Male	
	Missing	0	1	1	0	7	
Your level of awareness on the	High	0	6	6	0	40	
enforcement of circular about	Medium	2	7	9	40	47	
the land use based on GLOF hazard zonation mapping issued by MoHCA?	Low	3	1	4	60	7	
	Same as before	0	0	0	0	0	
Total	belole	5	15	20	100	100	
	ANGDUE PH	-		= -	100	100	
				espondent	ts		
		Dzongkhag disaster management focal Persons and					
		<i>Gewog</i> disaster management committee members					
		Gender (counts)					
		Female	Male	Total	Female	Male	
	Missing	0	0	0	0	0	
Your level of awareness on the	High	0	9	9	0	56	
enforcement of circular about	Medium	0	5	5	0	31	
the land use based on GLOF	Low	0	2	2	0	13	
hazard zonation mapping issued by MoHCA?	Same as before	0	0	0	0	0	
Total		0	16	16	0	100	
	BUMTH	ANG DZO	NGKHAG	•			
			R	espondent	ts		
		Dzongkh	ag disaster	manageme	ent focal Pe	ersons and	
		Gewog	lisaster man	agement o	committee	members	
		Gender	(counts)	Total		%	
		Female	Male	Total	Female	Male	
Your level of awareness on the	Missing	0	3	3	0	30	
	High	1	1	2	50	10	
enforcement of circular about	Medium	1	6	7	50	60	
		0	0	0	0	0	
the land use based on GLOF	Low	0	0	0	0	0	
	Low Same as before	0	0	0	0	0	

# Table xxxviiiDzongkhag incorporating Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) activities into its annual and 5-year plans

		PUNAKHA	DZONG	KHAG				
						sponder		
				Dzongk		aster ma Persons	nagement	t focal
				Genc (cour	ler		%	)
				Female	Male	Total	Femal e	Male
			Don't know	0	0	0	0	0
		Annual Plan	No	3	6	9	60	40
			Yes	2	9	11	40	60
	DRR	Total		5	15	20	100	100
		E' V D1	Don't know	0	0	0	0	0
Does your <i>Dzongkhag</i>		Five-Year Plan	No	1	8	9	20	53
incorporate Disaster Risk Reduction (DPR) and			Yes	4	7	11	80	47
Reduction (DRR) and Climate Change Adaptation		Total		5	15	20	100	100
(CCA) activities into your annual and 5-year plans?	CCA	Annual Plan	Don't know	0	0	0	0	0
annuar and 3-year plans.			No	4	8	12	80	53
			Yes	1	7	8	20	47
		Total		5	15	20	100	100
		Five-Year Plan	Don't know	0	0	0	0	0
			No	2	10	12	40	67
			Yes	3	5	8	60	33
	Total			5	15	20	100	100
	WAI	NGDUE PHOD	RANG D	ZONGKH	IAG			
					Re	sponder	nts	
				Dzongk	0	aster ma Persons	nagement	t focal
				Geno				
				(cour			%	)
				Female	Male	Total	Femal e	Male
			Don't know	0	2	2	0	13
		Annual Plan	No	0	1	1	0	6
			Yes	0	13	13	0	81
	DRR	Total		0	16	16	0	100
Does your <i>Dzongkhag</i> incorporate Disaster Risk			Don't know	0	5	5	0	31
Reduction (DRR) and		Five-Year Plan	No	0	4	4	0	25
Climate Change Adaptation			Yes	0	7	7	0	44
(CCA) activities into your		Total		0	16	16	0	100
annual and 5-year plans?	CCA	Annual Plan	Don't know	0	2	2	0	13
			No	0	1	1	0	6
			Yes	0	13	13	0	81

					-			
		Five-Year Plan	Don't know	0	5	5	0	31
			No	0	4	4	0	25
			Yes	0	7	7	0	44
	Total		100	0	16	16	0	100
		BUMTHAN	G DZON	GKHAG		1		<u>I</u>
					Re	sponder	nts	
				Dzongk		<u> </u>	nagemen	t focal
				_		Persons	-	
				Gend			%	)
				(cour	its)	Total	Femal	T
				Female	Male		e	Male
			Don't know	0	3	3	0	30
		Annual Plan	No	0	2	2	0	20
			Yes	2	5	7	100	50
	DRR	Total		2	10	12	100	100
		Five-Year Plan -	Don't know	1	5	6	50	50
Does your Dzongkhag			No	0	1	1	0	10
incorporate Disaster Risk			Yes	1	4	5	50	40
Reduction (DRR) and Climate Change Adaptation		Total		2	10	12	100	100
(CCA) activities into your annual and 5-year plans?	CCA	Annual Plan	Don't know	0	3	3	0	30
annuar and 5-year plans.			No	0	3	3	0	30
			Yes	2	4	6	100	40
		Total		2	10	12	100	100
		Five-Year Plan	Don't know	1	5	6	50	50
			No	0	2	2	0	20
			Yes	1	3	4	50	30
	Total			2	10	12	100	100

Table xxxix Gewog incorporating Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) activities into its annual and 5-year plans

PUNAKHA DZONG	KHAG				
	Respondents				
	Gewog disaster management committee				mittee
	members				
	Gend	ler		0/0	
	(cour	its)	Total	70	
	Female	Male	Total	Femal e	Male

			Don't	Γ				
			know	0	0	0	0	0
		Annual Plan	No	3	7	10	60	47
			Yes	2	8	10	40	53
	DRR	Total		5	15	20	100	100
			Don't know	0	0	0	0	0
Does your Gewogincorporate		Five-Year Plan	No	2	10	12	40	67
Disaster Risk Reduction (DRR) and Climate Change			Yes	3	5	8	60	33
Adaptation (CCA) activities		Total		5	15	20	100	100
into your annual and 5-year plans?	CCA	Annual Plan	Don't know	0	0	0	0	0
piano.			No	4	7	11	80	47
			Yes	1	8	9	20	53
		Total		5	15	20	100	100
		Five-Year Plan	Don't know	0	0	0	0	0
			No	4	11	15	80	73
			Yes	1	4	5	20	27
	Total			5	15	20	100	100
	WA	NGDUE PHOE	ORANG E	ZONGKH				
						sponder		
				<i>Gewog</i> d		managei nembers	ment com	mittee
				Genc (cour			%	)
				Female	Male	Total	Femal e	Male
			Don't know	0	7	7	0	44
		Annual Plan	No	0	0	0	0	0
			Yes	0	9	9	0	56
	DRR	Total		0	16	16	0	100
			Don't know	0	8	8	0	50
Does your Dzongkhag		Five-Year Plan	No	0	3	3	0	19
incorporate Disaster Risk			Yes	0	5	5	0	31
incorporate Disaster Risk Reduction (DRR) and						16	0	100
Reduction (DRR) and		Total		0	16	10	0	
Reduction (DRR) and Climate Change Adaptation (CCA) activities into your	CCA	Total Annual Plan	Don't know	0	7	7	0	44
Reduction (DRR) and Climate Change Adaptation	CCA		know No	0 0	7	7	0	0
Reduction (DRR) and Climate Change Adaptation (CCA) activities into your	CCA	Annual Plan	know	0 0 0 0 0	7 0 9	7 0 9	0 0 0 0	0 56
Reduction (DRR) and Climate Change Adaptation (CCA) activities into your	CCA	Annual Plan Total	know No Yes	0 0	7	7	0	0
Reduction (DRR) and Climate Change Adaptation (CCA) activities into your	CCA	Annual Plan	know No Yes Don't know	0 0 0 0 0	7 0 9 16 8	7 0 9 16 8	0 0 0 0 0	0 56 100 50
Reduction (DRR) and Climate Change Adaptation (CCA) activities into your	CCA	Annual Plan Total	know No Yes Don't know No	0 0 0 0 0 0	7 0 9 16 8 3	7 0 9 16 8 3	0 0 0 0 0 0	0 56 100 50 19
Reduction (DRR) and Climate Change Adaptation (CCA) activities into your		Annual Plan Total	know No Yes Don't know	0 0 0 0 0 0 0 0	7 0 9 16 8 3 5	7 0 9 16 8 3 5	0 0 0 0 0 0 0 0	0 56 100 50 19 31
Reduction (DRR) and Climate Change Adaptation (CCA) activities into your	CCA	Annual Plan Total	know No Yes Don't know No	0 0 0 0 0 0	7 0 9 16 8 3	7 0 9 16 8 3	0 0 0 0 0 0	0 56 100 50 19

		BUMTHAN	G DZON	GKHAG								
					Re	sponder	nts					
				<i>Gewog</i> disaster management cor members				mittee				
				Gend (coun		Total	%	)				
				Female	Male	Total	Femal e	Male				
		Annual Plan	Don't know	1	5	6	50	50				
	DRR	Annual Plan	No	0	2	2	0	20				
			Yes	1	3	4	50	30				
		Total		2	10	12	100	100				
		Five-Year Plan	Don't know	2	7	9	100	70				
Does your Dzongkhag			No	0	1	1	0	10				
incorporate Disaster Risk			Yes	0	2	2	0	20				
Reduction (DRR) and		Total		2	10	12	100	100				
Climate Change Adaptation (CCA) activities into your annual and 5-year plans?	CCA	Annual Plan	Don't know	1	5	6	50	50				
annuar and 5-year plans:			No	0	3	3	0	30				
			Yes	1	2	3	50	20				
		Total		2	10	12	100	100				
		Five-Year Plan	Don't know	2	6	8	100	60				
			No	0	2	2	0	20				
			Yes	0	2	2	0	20				
	Total			2	10	12	100	100				

Table xlrelevance, effectiveness, efficiency, sustainability, and impact of the awareness and education programs carried out on the risk of a GLOF

PUNAKHA DZONGKHAG								
			R	esponden	ts			
		Dzongkhag focal persons and Gewog communi						
		_		members	-	-		
		Gender	(counts)	Tatal	(	%		
		Female	Male	Total	Female	Male		
	Missing	0	1	1	0	7		
Relevance	Not relevant	0	0	0	0	0		
	Relevant	5	14	19	100	93		
Total		5	15	20	100	100		
	Missing	0	1	1	0	7		
	Highly satisfactory	0	5	5	0	33		
	Highly unsatisfactory	0	0	0	0	0		
Effectiveness	Moderately satisfactory	1	2	3	20	13		
	Moderately Unsatisfactory	1	0	1	20	0		
	Satisfactory	3	7	10	60	47		
	Unsatisfactory	0	0	0	0	0		
Total		5	15	20	100	100		

	201	0	4	4		-
	Missing	0	<u>1</u> 5	1 5	0	7 33
	Highly satisfactory	0	5	5	0	55
	Highly unsatisfactory	0	0	0	0	0
Efficiency	Moderately satisfactory	2	4	6	40	27
	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	2	5	7	40	33
	Unsatisfactory	1	0	1	20	0
Total	,	5	15	20	100	100
1000	Missing	0	1	1	0	7
	Likely	2	5	7	40	33
	Moderately likely	3	8	11	60	53
Sustainability	Moderately					
	Unlikely	0	1	1	0	7
	Unlikely	0	0	0	0	0
Total		5	15	20	100	100
	Missing	0	1	1	0	7
Impact	Minimal	2	6	8	40	40
	Negligible	0	1	1	0	7
	Significance	3	7	10	60	47
Total		5	15	20	100	100
	WANGDUE PHO		R	espondent		
	WANGDUE PHO		R <i>chag</i> focal pe	espondent ersons and		mmunity
	WANGDUE PHO	Dzongk	R <i>chag</i> focal pe	espondent ersons and members	Gewog co	mmunity %
	WANGDUE PHO	Dzongk Gender	R <i>chag</i> focal pe	espondent ersons and	Gewog co	-
		Dzongk	R chag focal pe (counts) Male	espondent ersons and members Total	Gewog co	%
Relevance	Missing	Dzongk Gender Female	R <i>chag</i> focal pe	espondent ersons and members	Gewog co Female	% Male
Relevance	Missing Not relevant	Dzongk Gender Female	R chag focal per (counts) Male 2	espondent rsons and members Total 2	Gewog co Female	<b>%</b> <u>Male</u> 13
Relevance	Missing	Dzongk Gender Female 0 0	R chag focal per (counts) Male 2 1	espondent rsons and members Total 2 1	<b>Gewog</b> co <b>Female</b> 0 0	% Male 13 6
	Missing Not relevant Relevant	Dzongk Gender Female 0 0 0	R           chag focal per           (counts)           Male           2           1           13	espondent rsons and members Total 2 1 1 13	<b>Gewog</b> co <b>Female</b> 0 0 0	Male           13           6           81
	Missing Not relevant	<b>Dzongk</b> Gender Female 0 0 0 0 0 0 0	R           chag focal per           (counts)           Male           2           1           13           16	espondent rsons and members Total 2 1 1 13 16	<b>Gewog</b> co	Male           13           6           81           100
Total	Missing Not relevant Relevant Missing Highly satisfactory Highly	<b>Dzongk</b> Gender Female 0 0 0 0 0 0 0 0 0 0	<b>R</b> <i>chag</i> focal per (counts) Male 2 1 13 16 2	espondent rsons and members Total 2 1 1 13 16 2	Gewog co Female 0 0 0 0 0 0	%           Male           13           6           81           100           13
	Missing Not relevant Relevant Missing Highly satisfactory Highly unsatisfactory Moderately	<b>Dzongk</b> Gender Female 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R           chag focal per           (counts)           Male           2           1           13           16           2           5	espondent rsons and members Total 2 1 13 16 2 5	Gewog co Female 0 0 0 0 0 0 0	Male           13           6           81           100           13           31
Total	Missing Not relevant Relevant Missing Highly satisfactory Highly unsatisfactory Moderately satisfactory	<b>Dzongk</b> Gender Female 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R           chag focal per           (counts)           Male           2           1           13           16           2           5           1           5	espondent           rsons and           members           Total           2           1           13           16           2           5           1           5	Gewog co Female 0 0 0 0 0 0 0 0 0 0 0	%           Male           13           6           81           100           13           31           6           31
Total	Missing Not relevant Relevant Missing Highly satisfactory Highly unsatisfactory Moderately satisfactory Satisfactory	Dzongk           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	R           chag focal per           (counts)           Male           2           1           13           16           2           5           1           5           3	espondent           rsons and           members           Total           2           1           13           16           2           5           1           5           3	Gewog co Female 0 0 0 0 0 0 0 0 0 0 0 0	%           Male           13           6           81           100           13           31           6           31           19
Total	Missing Not relevant Relevant Missing Highly satisfactory Highly unsatisfactory Moderately satisfactory Satisfactory Unsatisfactory	<b>Dzongk</b> Gender Female 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R           chag focal per           (counts)           Male           2           1           13           16           2           5           1           5           3           0	espondent           rsons and           members           Total           2           1           13           16           2           5           1           5           3           0	Gewog co Female 0 0 0 0 0 0 0 0 0 0 0 0 0	%           Male           13           6           81           100           13           31           6           31           19           0
Total	Missing Not relevant Relevant Missing Highly satisfactory Highly unsatisfactory Moderately satisfactory Satisfactory Unsatisfactory	<b>Dzongk</b> Gender Female 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R           chag focal per           (counts)           Male           2           1           13           16           2           5           1           5           3           0           16	espondent rsons and members Total 2 1 13 16 2 5 1 5 3 0 16 16 16 16 16 16 16 16 16 16	Gewog co	%           Male           13           6           81           100           13           31           6           31           19           0           100
Total	Missing Not relevant Relevant Missing Highly satisfactory Highly unsatisfactory Moderately satisfactory Satisfactory Unsatisfactory Missing	<b>Dzongk</b> Gender Female 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R           chag focal per           (counts)           Male           2           1           13           16           2           5           1           5           3           0           16           2	espondent rsons and members - Total 2 1 13 16 2 5 1 1 5 3 0 16 2 5 1 1 5 3 0 16 2 5 1 1 5 3 0 16 2 5 1 1 5 3 0 16 2 5 1 1 5 16 2 5 1 1 5 16 2 5 1 1 5 16 16 2 5 1 1 1 1 1 1 1 1 1 1 1 1 1	Gewog co Female 0 0 0 0 0 0 0 0 0 0 0 0 0	%           Male           13           6           81           100           13           31           6           31           19           0           100           13
Total	MissingNot relevantRelevantMissingHighly satisfactoryHighlyunsatisfactoryModeratelysatisfactorySatisfactoryUnsatisfactoryUnsatisfactoryMissingHighly satisfactoryHighly satisfactory	Dzongk           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	R           chag focal per           (counts)           Male           2           1           13           16           2           5           1           5           3           0           16	espondent rsons and members Total 2 1 13 16 2 5 1 5 3 0 16 16 16 16 16 16 16 16 16 16	Gewog co	%           Male           13           6           81           100           13           31           6           31           19           0           100
Total	MissingNot relevantRelevantMissingHighly satisfactoryHighlyunsatisfactoryModeratelysatisfactorySatisfactoryUnsatisfactoryUnsatisfactoryHighly satisfactoryHighly satisfactoryMissingHighly satisfactoryHighly unsatisfactoryModeratelyMissingHighly unsatisfactoryModerately	Dzongk           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	R           chag focal per           (counts)           Male           2           1           13           16           2           5           1           5           3           0           16           2           6	espondent rsons and members Total 2 1 13 16 2 5 1 5 3 0 16 2 5 1 5 3 0 16 2 5 4 6	Gewog co	%           Male           13           6           81           100           13           31           6           31           19           0           100           13
Total Effectiveness Total	MissingNot relevantRelevantMissingHighly satisfactoryHighlyunsatisfactoryModeratelysatisfactorySatisfactoryUnsatisfactoryUnsatisfactoryHighly satisfactoryHighly satisfactoryMissingHighly satisfactoryHighly satisfactoryModeratelysatisfactoryModeratelysatisfactoryModeratelysatisfactoryModeratelysatisfactoryModerately	Dzongk           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	R           chag focal per           (counts)           Male           2           1           13           16           2           5           1           5           3           0           16           2           6           1	espondent rsons and members - Total 2 1 13 16 2 5 1 1 5 3 0 16 2 6 1 1 2 6 1	Gewog co	%           Male           13           6           81           100           13           31           6           31           100           13           33           6           31           100           13           38           6
Total	MissingNot relevantRelevantMissingHighly satisfactoryHighlyunsatisfactoryModeratelysatisfactorySatisfactoryUnsatisfactoryUnsatisfactoryHighly satisfactoryHighly satisfactoryHighly satisfactoryMissingHighly satisfactoryHighly satisfactoryModeratelysatisfactoryModeratelysatisfactoryModeratelysatisfactory	Dzongk           Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	R           chag focal per           (counts)           Male           2           1           13           16           2           5           3           0           16           2           6           1           3	espondent rsons and members - Total 2 1 13 16 2 5 1 1 5 3 0 16 2 6 1 3 0 16 2 6 1 3 0 16 2 5 1 3 0 16 2 5 1 3 0 16 2 5 1 3 0 16 2 5 1 1 3 16 2 5 1 1 3 16 2 5 1 1 3 16 2 5 1 1 3 16 2 5 1 1 3 16 2 5 1 1 1 1 1 1 1 1 1 1 1 1 1	Gewog co	%           Male           13           6           81           100           13           31           6           31           19           0           100           13           8           6           31           19           0           100           13           38           6           19

Total		0	16	16	0	100
	Missing	0	2	2	0	13
	Likely	0	6	6	0	38
	Moderately likely	0	4	4	0	25
Sustainability	Moderately Unlikely	0	2	2	0	13
	Unlikely	0	2	2	0	13
Total	0	0	16	16	0	100
	Missing	0	2	2	0	13
-	Minimal	0	5	5	0	31
Impact	Negligible	0	1	1	0	6
	Significance	0	8	8	0	50
Total			16	16	0	100
	BUMTAH	NG DZON	GKHAG		1	
				espondent	ts	
		Dzonal	<i>hag</i> focal pe			mmunity
		Dzongi		members	00000000000	initiatiity
		Conder	(counts)			%
		Female	· · · · · · · · · · · · · · · · · · ·	Total	Female	
	) (°		Male	2	-	Male
D 1	Missing	0	2	2	0	20
Relevance	Not relevant	0	0	0	0	0
て 、 1	Relevant	2	8	10	100	80
Total	NC .	2	10	12	100	100
	Missing	0	2	2	0	20
	Highly satisfactory	0	1	1	0	10
Effectiveness	Highly unsatisfactory	0	0	0	0	0
	Moderately satisfactory	1	1	2	50	10
	Satisfactory	1	6	7	50	60
	Unsatisfactory	0	0	0	0	0
Total		2	10	12	100	100
	Missing	0	2	2	0	20
	Highly satisfactory	0	0	0	0	0
	Highly unsatisfactory	0	0	0	0	0
Efficiency	Moderately satisfactory	1	2	3	50	20
	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	1	6	7	50	60
	Unsatisfactory					
Total	-	2	10	12	100	100
	Missing	0	2	2	0	20
	Likely	1	5	6	50	50
Sustainability	Moderately likely	1	3	4	50	30
0.0000000000000000000000000000000000000	Moderately Unlikely	0	0	0	0	0
	Unlikely	0	0	0	0	0
Total		2	10	12	100	100
	Missing	0	2	2	0	20
Impact	Minimal	1	2	3	50	20
mpace	Negligible	0	0	0	0	0
	Significance	1	6	7	50	60

Total 2 10 12 100 100
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# Table xlirelevance, effectiveness, efficiency, sustainability, and impact of the prevention and mitigation activities carried out on the risk of GLOF

			R	lesponden	ts		
		Dzongkhag focal persons and Gewog community					
		members					
		Conder	(counts)		0	/0	
		Female	Male	Total		Male	
	Missing	0	1	1	<b>Female</b>		
Relevance	Missing Not relevant	1	0	1	20	0	
Kelevance	Relevant	4	14	1	80	93	
Total	Kelevant	5	14	20	100	100	
Total	Missing	0			+ +	7	
			<u>1</u> 5	1 5	0		
	Highly satisfactory	0	5	5	0	33	
Effectiveness	Highly unsatisfactory	0	0	0	0	0	
	Moderately satisfactory	3	4	7	60	27	
	Moderately unsatisfactory	0	1	1	0	7	
	Satisfactory	2	4	6	40	27	
	Unsatisfactory	0	0	0	0	0	
Total	0	5	15	20	100	100	
	Missing	0	1	1	0	7	
	Highly satisfactory	0	3	3	0	20	
	Highly	0	0	0	0	0	
Efficiency	unsatisfactory Moderately	2	3	5	40	20	
	satisfactory Moderately	0	0	0	0	0	
	unsatisfactory	0	_	-	0	-	
	Satisfactory	3	8	11	60	53	
	Unsatisfactory	0	0	0	0	0	
Total		5	15	20	100	100	
	Missing	0	1	1	0	7	
	Likely	1	4	5	20	27	
Sustainability	Moderately likely	4	9	13	80	60	
Sustainability	Moderately Unlikely	0	1	1	0	7	
	Unlikely	0	0	0	0	0	
Total		5	15	20	100	100	
	Missing	0	1	1	0	7	
-	Minimal	3	4	7	60	27	
Impact	Negligible	0	1	1	0	7	
	Significance	2	9	11	40	60	
Total	Significantee	5	15	20	100	100	
i Otal	WANGDUE PHO				100	100	
				lesponden	te		
		Dzongk	hag focal pe			nmunity	
				members			

			(counts)	Total		/0
		Female	Male	10141	Female	Mal
	Missing	0	2	2	0	13
Relevance	Not relevant	0	1	1	0	6
	Relevant	0	13	13	0	81
Tota		0	16	16	0	100
	Missing	0	2	2	0	13
	Highly satisfactory	0	4	4	0	25
	Highly unsatisfactory	0	1	1	0	6
Effectiveness	Moderately satisfactory	0	3	3	0	19
Total	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	0	6	6	0	38
	Unsatisfactory	0	0	0	0	0
Tota		0	16	16	0	100
	Missing	0	2	2	0	13
	Highly satisfactory	0	6	6	0	38
	Highly unsatisfactory	0	1	1	0	6
Efficiency	Moderately satisfactory	0	3	3	0	19
	Moderately unsatisfactory	0	1	1	0	6
	Satisfactory	0	3	3	0	19
	Unsatisfactory	0	0	0	0	0
Tota	1	0	16	16	0	100
	Missing	0	2	2	0	13
	Likely	0	7	7	0	44
C ( 111)	Moderately likely	0	5	5	0	31
Sustainability	Moderately Unlikely	0	1	1	0	6
	Unlikely	0	1	1	0	6
Tota	2	0	16	16	0	100
	Missing	0	2	2	0	13
т	Minimal	0	3	3	0	19
Impact	Negligible	0	2	2	0	13
	Significance	0	9	9	0	56
Tota		0	16	16	0	100

	DUMIH	AING DZUN	GNHAG				
			R	espondent	S		
		Dzongk	<i>hag</i> focal pe	ersons and	Gewog con	mmunity	
		_	members				
		Gender	(counts)	Tatal	%		
		Female	Male	Total	Female	Male	
	Missing	0	2	2	0	20	
Relevance	Not relevant	0	0	0	0	0	
	Relevant	2	8	10	100	80	
Tota	1	2	10	12	100	100	

	Missing	0	2	2	0	20
	Highly satisfactory	0	1	1	0	10
	Highly unsatisfactory	0	0	0	0	0
Effectiveness	Moderately satisfactory	1	2	3	50	20
	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	1	5	6	50	50
	Unsatisfactory	0	0	0	0	0
Total		2	10	12	100	100
	Missing	0	2	2	0	20
	Highly satisfactory	0	1	1	0	10
	Highly unsatisfactory	0	0	0	0	0
Efficiency	Moderately satisfactory	1	2	3	50	20
	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	1	5	6	50	50
	Unsatisfactory	0	0	0	0	0
Total		2	10	12	100	100
	Missing	0	2	2	0	20
	Likely	1	3	4	50	30
	Moderately likely	1	5	6	50	50
Sustainability	Moderately Unlikely	0	0	0	0	0
	Unlikely	0	0	0	0	0
Total		2	10	12	100	100
	Missing	0	2	2	0	20
T ,	Minimal	1	4	5	50	40
Impact	Negligible	0	0	0	0	0
	Significance	1	4	5	50	40
Total		2	10	12	100	100

Table xliirelevance, effectiveness, efficiency, sustainability, and impact of the response capacities

PUNAKHA DZONGKHAG								
		Respondents						
		Dzongk	<i>hag</i> focal pe	ersons and	Gewog co	mmunity		
				members				
		Gender	(counts)	Total		%		
		Female	Male	Total	Female	Male		
	Missing	0	1	1	0	7		
Relevance	Not relevant	0	0	0	0	0		
	Relevant	5	14	19	100	93		
Total		5	15	20	100	100		
	Missing	0	1	1	0	7		
	Highly satisfactory	1	5	6	20	33		
	Highly unsatisfactory	0	0	0	0	0		
Effectiveness	Moderately satisfactory	3	3	6	60	20		
	Moderately unsatisfactory	0	1	1	0	7		
	Satisfactory	1	5	6	20	33		

	Unsatisfactory	0	0	0	0	0
Total	Chisatioractory	5	15	20	100	100
1014	Missing	0	1	1	0	7
	Highly satisfactory	1	3	4	20	20
	Highly unsatisfactory	0	0	0	0	0
Efficiency	Moderately satisfactory	3	3	6	60	20
	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	1	8	9	20	53
	Unsatisfactory	0	0	0	0	0
Total	Chisadistactory	5	15	20	100	100
10141	Missing	0	1	1	0	7
	Likely	1	5	6	20	33
	Moderately likely	4	8	12	80	53
Sustainability	Moderately	0	1	1	0	7
	Unlikely			<u></u>	-	
	Unlikely	0	0	0	0	0
Total		5	15	20	100	100
	Missing	0	1	1	0	7
Impact	Minimal	3	4	7	60	27
<u>F</u>	Negligible	0	0	0	0	0
	Significance	2	10	12	40	67
Total		5	15	20	100	100
		Respondents           Dzongkhag focal persons and Gewog communi				
		Dzongk	<i>hag</i> focal pe	ersons and		mmunity
			<i>thag</i> focal pe	ersons and members	Gewog co	-
		Gender	<i>thag</i> focal pe	ersons and	<i>Gewog</i> co	%
	Missing	Gender Female	<i>thag</i> focal pe (counts) Male	ersons and members Total	Gewog con Female	% Male
Relavance	Missing Not relevant	Gender Female	<i>counts)</i> (counts) Male	Total	Gewog cost Female	% Male 13
Relevance	Not relevant	<b>Gender</b> <b>Female</b> 0 0	chag focal period (counts) Male 2 1	Total	<b>Gewog</b> con <b>Female</b> 0 0	% Male 13 6
		<b>Gender</b> <b>Female</b> 0 0 0	counts) (counts) Male 2 1 13	Total	<b>Gewog</b> cost <b>Female</b> 0 0 0	% Male 13 6 81
Relevance Total	Not relevant Relevant	Gender           Female           0           0           0           0           0	counts         Male           2         1           13         16	Total 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Gewog cost Female 0 0 0 0	% Male 13 6 81 100
	Not relevant Relevant Missing	Gender           Female           0           0           0           0           0           0           0           0           0	counts         Counts           Male         2           1         13           16         2	Prime         Prime           Total         2           1         13           16         2	Gewog cost Female 0 0 0 0 0 0	Male           13           6           81           100           13
Total	Not relevant Relevant Missing Highly satisfactory Highly	Gender           Female           0           0           0           0           0	counts         Male           2         1           13         16	Total 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Gewog cost Female 0 0 0 0	% Male 13 6 81 100
	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately	Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0	counts         Male           2         1           13         16           2         4	2         1           13         16           2         4	Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0	Male           13           6           81           100           13           25
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory	Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	counts         Male           2         1           13         16           2         4           1         3	2         1           13         16           2         4           1         3	Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0 0 0	%         Male           13         6           81         100           13         25           6         19
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory	Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	counts       Male       2       1       13       16       2       4       1       3       6	Prime         Provide	Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0 0 0	Male           13           6           81           100           13           25           6           19           38
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory	Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	counts       Male       2       1       13       16       2       4       1       3       6       0	Prime         Prime           Total         2           1         13           16         2           4         1           3         6           0         0	Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0 0 0	%         Male           13         6           81         100           13         25           6         19
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Unsatisfactory	Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	(counts)         Male         2         1         13         16         2         4         1         3         6         0         16	Prime         Constraint         Constraint </td <td>Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>%           Male           13           6           81           100           13           25           6           19           38           0           100</td>	Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0 0 0	%           Male           13           6           81           100           13           25           6           19           38           0           100
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Moderately         satisfactory         Unsatisfactory         Missing	Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	(counts)         Male         2         1         13         16         2         4         1         3         6         0         16         2	Prime         Constraint         Constraint </td <td>Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>%         Male           13         6           81         100           13         25           6         19           38         0           1000         13</td>	Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0 0 0	%         Male           13         6           81         100           13         25           6         19           38         0           1000         13
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Highly satisfactory         Unsatisfactory         Highly satisfactory         Highly satisfactory         Highly	Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	(counts)         Male         2         1         13         16         2         4         1         3         6         0         16	Prime         Constraint         Constraint </td <td>Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>%           Male           13           6           81           100           13           25           6           19           38           0           100</td>	Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0 0 0	%           Male           13           6           81           100           13           25           6           19           38           0           100
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Highly satisfactory         Unsatisfactory         Missing         Highly satisfactory         Highly unsatisfactory         Moderately         Moderately	Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	(counts)         Male         2         1         13         16         2         4         1         3         6         0         16         2         5	Prime         Constraint         Constraint </td <td>Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>%         Male           13         6           81         100           13         25           6         19           38         0           100         13           31         31</td>	Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0 0 0	%         Male           13         6           81         100           13         25           6         19           38         0           100         13           31         31
Total Effectiveness Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Missing         Highly satisfactory         Highly satisfactory         Highly satisfactory         Highly satisfactory	Gender           Female           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	<i>chag</i> focal periods (counts) Male 2 1 13 16 2 4 1 3 6 0 16 2 5 1	Prime         Total           2         1           13         16           2         4           1         3           6         0           16         2           5         1	Gewog cost Female 0 0 0 0 0 0 0 0 0 0 0 0 0	%         Male           13         6           81         100           13         25           6         19           38         0           1000         13           31         6

	Unsatisfactory	0	0	0	0	0
Total		0	16	16	0	100
	Missing	0	2	2	0	13
	Likely	0	7	7	0	44
Constational III.	Moderately likely	0	4	4	0	25
Sustainability	Moderately unlikely	0	1	1	0	6
	Unlikely	0	2	2	0	13
Total	e	0	16	16	0	100
1000	Missing	0	2	2	0	13
_	Minimal	0	5	5	0	31
Impact	Negligible	0	2	2	0	14
	Significance	0	7	7	0	44
Total	- 8	0	16	16	0	100
	BUMTHAI			lesponden ersons and		mmuni
		Ŭ	0	members	U	
		Gender	(counts)	Total		%
		Female	Male	Total	Female	Mal
	Missing	0	2	2	0	20
Relevance	Not relevant	0	0	0	0	0
	Relevant	2	8	10	100	80
Total		2	10	12	100	100
	Missing	0	2	2	0	20
	Highly satisfactory	0	1	1	0	10
	Highly unsatisfactory	0	0	0	0	0
Effectiveness	Moderately satisfactory	1	2	3	50	20
	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	1	5	6	50	50
	Unsatisfactory					
Total		2	10	12	100	100
	Missing	0	2	2	0	20
	Highly satisfactory	0	0	0	0	0
	Highly unsatisfactory	0	0	0	0	0
Efficiency	Moderately satisfactory	1	1	2	50	10
	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	1	7	8	50	70
	Unsatisfactory					
Total		2	10	12	100	100
	Missing	0	2	2	0	20
	Likely	1	3	4	50	30
Sustainability	Moderately likely	1	5	6	50	50
SustamaDinty	Moderately Unlikely	0	0	0	0	0
Total	Unlikely	0 2	0 10	0 12	0 100	0 100

	Missing	0	2	2	0	20
Impost	Minimal	1	3	4	50	30
Impact	Negligible	0	0	0	0	0
	Significance	1	5	6	50	50
Total		2	10	12	100	100

Table xliiiOpinions about the occurrence of GLOF

	PUNAK	HA DZON	GKHAG			
			R	esponden	ts	
			Comm	nunity Me	mbers	
		Gender (counts) Total %				
		Female	Male	Total	Female	Male
	Missing	0	1	1	0	7
Do you think you will not	No	0	1	1	0	7
experience GLOF in winter?	Don't know	5	10	15	100	67
	Yes	0	3	3	0	20
Total		5	15	20	100	100
•	WANGDUE PH	IODRANG	DZONGKI	HAG		
			R	esponden	ts	
			Comm	nunity Me	mbers	
		Gender	(counts)	71		%
		Female	Male	Total	Female	Male
	Missing	0	1	1	0	6
Do you think you will not	No	0	9	9	0	56
experience GLOF in winter?	Don't know	0	5	5	0	31
	Yes	0	1	1	0	6
Total		0	16	16	0	100
	BUMTH	ANG DZO	NGKHAG			
			R	esponden	ts	
			Comm	nunity Me	mbers	
		Gender (counts)				
		Female	Male	Total	Female	Male
	Missing	0	2	2	0	20
Do you think you will not	No	2	2	4	100	20
experience GLOF in winter?	Don't know	0	5	5	0	50
	Yes	0	1	1	0	10
Total		2	10	12	100	100

## 7.1.3 Community Level Tables

Table xliv Respondents' profile

	PUNAKHA D	DZONGKHAG	
		Frequency	Percent
Gender	Female	57	67.1
	Male	28	32.9
Т	otal	85	100.0
	18 – 24	12	14.1
	25 - 34	20	23.5
Age group	35 - 44	19	22.4
	45 - 54	16	18.8
	55 - 64	10	11.8
	65 - 74	7	8.2
	75 - 84	1	1.2
	85 +	0	0
Т	otal	85	100.0
TT 1 111 1	No	41	48.2
Household head	Yes	44	51.8
Т	otal	85	100.0
	Business	22	25.9
	Civil servant	8	9.4
	Farmer	36	42.4
Profession	House wife	0	0
	Student	17	20.0
	Trainee	2	2.4
	Other	0	0
Т	otal	85	100.0
		<u>.</u>	
	Divorce	4	4.7
Marital status	Married	63	74.1
	Single	18	21.2
Т	otal	85	100.0
Litorogy	Illiterate	42	49.4
Literacy	Literate	43	50.6
Т	otal	85	100.0
	WANGDUE PHODF	RANG DZONGKHAG	
		Frequency	Percent
Gender	Female	53	48.6
	Male	56	51.4
Т	otal	109	100.0
		· ·	
	18 – 24	27	25
	25 - 34	38	35
	35 - 44	27	25
Age group	45 - 54	10	9
001	55 - 64	5	5
		i	
	65 - 74	1	1

	85 +	1	1
Т	otal	109	100
Household head	No	50	46
	Yes	59	54
Т	otal	109	100
	D	24	22
	Business Civil servant	<u> </u>	<u>22</u> 10
	Farmer	26	24
Profession	House wife	10	9
	Student	26	24
	Trainee	1	1
	Other	11	10
т	otal	109	100.0
1	otai	109	100.0
	Divorce	3	3
Marital status	Married	71	65
	Single	35	32
Т	'otal	109	100
Literacy	Illiterate	35	32
	Literate	74	68
Т	otal	109	100
	BUMTAHNG		
		Frequency	Percent
Gender	Female	48	56.5
	Male	37	43.5
	4 4		
Т	otal	85	100.0
Т			
Т	18 - 24	4	4.7
Т	$\frac{18-24}{25-34}$	<u>4</u> 38	4.7 44.7
	$     \begin{array}{r}             18 - 24 \\             25 - 34 \\             35 - 44         \end{array} $	4 38 16	4.7 44.7 18.8
T Age group	$     \begin{array}{r}             18 - 24 \\             25 - 34 \\             35 - 44 \\             45 - 54 \\         \end{array} $	4 38 16 12	4.7 44.7 18.8 14.1
	$     \begin{array}{r}             18 - 24 \\             25 - 34 \\             35 - 44 \\             45 - 54 \\             55 - 64 \\         \end{array} $	4 38 16 12 11	4.7 44.7 18.8 14.1 12.9
	$     \begin{array}{r}             18 - 24 \\             25 - 34 \\             35 - 44 \\             45 - 54 \\             55 - 64 \\             65 - 74 \\             \end{array}     $	4 38 16 12 11 2	4.7 44.7 18.8 14.1 12.9 2.4
	$     \begin{array}{r}             18 - 24 \\             25 - 34 \\             35 - 44 \\             45 - 54 \\             55 - 64 \\             65 - 74 \\             75 - 84 \\             \end{array} $	4 38 16 12 11 2 2	4.7 44.7 18.8 14.1 12.9 2.4 2.4
Age group	$     \begin{array}{r}             18 - 24 \\             25 - 34 \\             35 - 44 \\             45 - 54 \\             55 - 64 \\             65 - 74 \\             \end{array}     $	4 38 16 12 11 2	4.7 44.7 18.8 14.1 12.9 2.4
Age group	$ \begin{array}{r} 18 - 24 \\ 25 - 34 \\ 35 - 44 \\ 45 - 54 \\ 55 - 64 \\ 65 - 74 \\ 75 - 84 \\ 85 + \\ \end{array} $ 'otal	$ \begin{array}{r}     4 \\     38 \\     16 \\     12 \\     11 \\     2 \\     2 \\     0 \\     85 \\ \end{array} $	$ \begin{array}{r}     4.7 \\     44.7 \\     18.8 \\     14.1 \\     12.9 \\     2.4 \\     2.4 \\     0 \\     100.0 \\ \end{array} $
Age group T	$ \begin{array}{r} 18 - 24 \\ 25 - 34 \\ 35 - 44 \\ 45 - 54 \\ 55 - 64 \\ 65 - 74 \\ 75 - 84 \\ 85 + \\ \hline total \\ \hline No$	4 38 16 12 11 2 2 0 85 37	4.7 44.7 18.8 14.1 12.9 2.4 2.4 0 100.0 43.5
Age group T Household head	$ \begin{array}{r} 18 - 24 \\ 25 - 34 \\ 35 - 44 \\ 45 - 54 \\ 55 - 64 \\ 65 - 74 \\ 75 - 84 \\ 85 + \\ \hline total \\ \hline No \\ Yes \\ \end{array} $	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{r}     4.7 \\     44.7 \\     18.8 \\     14.1 \\     12.9 \\     2.4 \\     0 \\     100.0 \\   \end{array} $
Age group T Household head	$ \begin{array}{r} 18 - 24 \\ 25 - 34 \\ 35 - 44 \\ 45 - 54 \\ 55 - 64 \\ 65 - 74 \\ 75 - 84 \\ 85 + \\ \hline total \\ \hline No$	4 38 16 12 11 2 2 0 85 37	4.7 44.7 18.8 14.1 12.9 2.4 2.4 0 100.0 43.5
Age group T Household head	$ \begin{array}{r} 18 - 24 \\ 25 - 34 \\ 35 - 44 \\ 45 - 54 \\ 55 - 64 \\ 65 - 74 \\ 75 - 84 \\ 85 + \\ \hline total \\ \hline No \\ Yes \\ \hline total \end{array} $	$ \begin{array}{r}     4 \\     38 \\     16 \\     12 \\     11 \\     2 \\     2 \\     0 \\     85 \\   \end{array} $ $ \begin{array}{r}     37 \\     48 \\     85 \\   \end{array} $	$ \begin{array}{r}     4.7 \\     44.7 \\     18.8 \\     14.1 \\     12.9 \\     2.4 \\     2.4 \\     0 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     43.5 \\     56.5 \\     100.0 \\   \end{array} $
Age group T Household head	$ \begin{array}{r} 18 - 24 \\ 25 - 34 \\ 35 - 44 \\ 45 - 54 \\ 55 - 64 \\ 65 - 74 \\ 75 - 84 \\ 85 + \\ \hline \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	4       38       16       12       11       2       2       0       85       37       48       85       12	$ \begin{array}{r}     4.7 \\     44.7 \\     18.8 \\     14.1 \\     12.9 \\     2.4 \\     2.4 \\     0 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     43.5 \\     56.5 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     14.1 \\   \end{array} $
Age group T Household head	18 – 24         25 – 34         35 – 44         45 – 54         55 – 64         65 – 74         75 – 84         85 +         'otal         No         Yes         'otal         Business         Civil servant	$ \begin{array}{c}     4 \\     38 \\     16 \\     12 \\     11 \\     2 \\     2 \\     0 \\     85 \\     \hline     37 \\     48 \\     85 \\     \hline     12 \\     2 \\     2 \end{array} $	$ \begin{array}{r}     4.7 \\     44.7 \\     18.8 \\     14.1 \\     12.9 \\     2.4 \\     2.4 \\     0 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     43.5 \\     56.5 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     14.1 \\     2.4 \\   \end{array} $
Age group T Iousehold head	18 - 24           25 - 34           35 - 44           45 - 54           55 - 64           65 - 74           75 - 84           85 +           'otal           Yes           'otal           Business           Civil servant           Farmer	$ \begin{array}{c}     4 \\     38 \\     16 \\     12 \\     11 \\     2 \\     2 \\     0 \\     85 \\   \end{array} $ $ \begin{array}{c}     37 \\     48 \\     85 \\   \end{array} $ $ \begin{array}{c}     12 \\     2 \\     2 \\     56 \\   \end{array} $	$ \begin{array}{r}     4.7 \\     44.7 \\     18.8 \\     14.1 \\     12.9 \\     2.4 \\     2.4 \\     0 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     43.5 \\     56.5 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     14.1 \\     2.4 \\     65.9 \\   \end{array} $
Age group T Household head	18 - 24           25 - 34           35 - 44           45 - 54           55 - 64           65 - 74           75 - 84           85 +           'otal           Business           Civil servant           Farmer           House wife	$ \begin{array}{c}     4 \\     38 \\     16 \\     12 \\     11 \\     2 \\     2 \\     0 \\     85 \\   \end{array} $ $ \begin{array}{c}     37 \\     48 \\     85 \\   \end{array} $ $ \begin{array}{c}     12 \\     2 \\     56 \\     11 \\   \end{array} $	$ \begin{array}{r}     4.7 \\     44.7 \\     18.8 \\     14.1 \\     12.9 \\     2.4 \\     2.4 \\     0 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     43.5 \\     56.5 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     14.1 \\     2.4 \\     65.9 \\     12.9 \\   \end{array} $
Age group T Household head	18 - 24           25 - 34           35 - 44           45 - 54           55 - 64           65 - 74           75 - 84           85 +           'otal           Business           Civil servant           Farmer           House wife           Student	$ \begin{array}{c}     4 \\     38 \\     16 \\     12 \\     11 \\     2 \\     2 \\     0 \\     85 \\   \end{array} $ $ \begin{array}{c}     37 \\     48 \\     85 \\   \end{array} $ $ \begin{array}{c}     12 \\     2 \\     56 \\     11 \\     4 \\   \end{array} $	$ \begin{array}{r}     4.7 \\     44.7 \\     18.8 \\     14.1 \\     12.9 \\     2.4 \\     0 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     43.5 \\     56.5 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     14.1 \\     2.4 \\     65.9 \\     12.9 \\     4.7 \\   \end{array} $
Age group T Iousehold head	18 – 24         25 – 34         35 – 44         45 – 54         55 – 64         65 – 74         75 – 84         85 +         'otal         Business         Civil servant         Farmer         House wife         Student         Trainee	$ \begin{array}{c}     4 \\          38 \\          16 \\          12 \\          11 \\          2 \\          2 \\          0 \\          85 \\          \hline          37 \\          48 \\          85 \\          \hline          12 \\          2 \\          56 \\          11 \\          4 \\          0 \\          0         $	$ \begin{array}{r}     4.7 \\     44.7 \\     18.8 \\     14.1 \\     12.9 \\     2.4 \\     0 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     43.5 \\     56.5 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     14.1 \\     2.4 \\     65.9 \\     12.9 \\     4.7 \\     0 \\   \end{array} $
Age group T Iousehold head T Profession	18 - 24           25 - 34           35 - 44           45 - 54           55 - 64           65 - 74           75 - 84           85 +           'otal           Business           Civil servant           Farmer           House wife           Student	$ \begin{array}{c}     4 \\     38 \\     16 \\     12 \\     11 \\     2 \\     2 \\     0 \\     85 \\   \end{array} $ $ \begin{array}{c}     37 \\     48 \\     85 \\   \end{array} $ $ \begin{array}{c}     12 \\     2 \\     56 \\     11 \\     4 \\   \end{array} $	$ \begin{array}{r}     4.7 \\     44.7 \\     18.8 \\     14.1 \\     12.9 \\     2.4 \\     0 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     43.5 \\     56.5 \\     100.0 \\   \end{array} $ $ \begin{array}{r}     14.1 \\     2.4 \\     65.9 \\     12.9 \\     4.7 \\   \end{array} $

	Divorce	0	0
Marital status	Married	76	89.4
	Single	9	10.6
Те	otal	85	100.0
Literacy	Illiterate	47	55.3
Literacy	Literate	38	44.7
Те	otal	85	100.0

Table xlvCount and percentage of community members trained in the following training

	PUNAK	HADZON						
		Respondents						
Tasiaias			Comr	nunity Me	mbers			
Training		Gender	(counts)		0	6		
		Female	Male	Total	Female	Male		
Community-Based Disaster Risk	No	25	13	38	44	46		
Management (CBDRM)	Yes	32	15	47	56	54		
Total		57	28	85	100	100		
School Disaster Preparedness and	No	48	23	71	84	82		
Response Training	Yes	9	5	14	16	18		
Total		57	28	85	100	100		
Denne Eine Safate Terrining	No	54	23	77	95	82		
Dzong Fire Safety Training	Yes	3	5	8	5	18		
Total	•	57	28	85	100	100		
	No							
Others	Yes							
Total	•				1			

# WANGDUE PHODRANG DZONGKHAG

			R	espondent	ts			
Training			Community Members					
Training		Gender	(counts)	Total		%		
		Female	Male	Total	Female	Male		
Community-Based Disaster Risk	No	14	15	29	26	27		
Management (CBDRM)	Yes	39	41	80	74	73		
Total		53	56	109	100	100		
School Disaster Preparedness and	No	11	14	25	21	25		
Response Training	Yes	42	42	84	79	75		
Total		53	56	109	100	100		
Denne Fine Sefete Training	No	1	6	7	2	11		
Dzong Fire Safety Training	Yes	52	50	102	98	89		
Total		53	56	109	100	100		
Others	No	52	56	11	98	100		
Others	Yes	1	0	1	2	0		
Total	•	53	56	109	100	100		

## BUMTHANG DZONGKHAG Respondents

			Respondents						
Training			Comm	unity Mer	nbers				
Training	ling			Total	%				
		Female	Male	Total	Female	Male			
Community-Based Disaster Risk	No	15	12	27	31	32			
Management (CBDRM)	Yes	33	25	58	69	68			

Total		48	37	85	100	100
School Disaster Preparedness and	No	46	36	82	96	97
Response Training	Yes	2	1	3	4	3
Total		48	37	85	100	100
Dzong Fire Safety Training	No	47	36	83	98	97
Dzong Pile Salety Hanning	Yes	1	1	2	2	3
Total		48	37	85	100	100
Others	No					
Ouleis	Yes					
Total						

Table xlviCount and percentage of community members who participated in awareness activities

	PUNAK	HA DZON	GKHAG					
			Respondents					
A A			Com	munity Mer	nbers			
Awareness Activities		Gender	(counts)	71 / 1	0	/0		
		Female	Male	Total	Female	Male		
Mock drill	No	20	9	29	35	32		
MOCK dHil	Yes	37	19	56	65	68		
Total		57	28	85	100	100		
Wankahana	No	54	26	80	95	93		
Workshops	Yes	3	2	5	5	7		
Total		57	28	85	100	100		
Mastings	No	20	12	32	35	43		
Meetings	Yes	37	16	53	65	57		
Total	·	57	28	85	100	100		
Others	No							
Others	Yes							
Total								

	WANGDUE I	HODRANG DZONGKHAG
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		R	lesponden	ts					
Awareness Activities			Community Members						
Awareness Activities		Gender	(counts)	Tatal	0	6			
		Female	Male	Total	Female	Male			
Mock drill	No	19	33	52	36	59			
MOCK drill	Yes	34	23	57	64	41			
Total		53	56	109	100	100			
	No	3	5	8	6	9			
Workshops	Yes	50	51	101	94	91			
Total	·	53	56	109	100	100			
	No	17	22	39	32	39			
Meetings	Yes	36	34	70	68	61			
Total		53	56	109	100	100			
Others	No	52	56	11	98	100			
Otners	Yes	1	0	1	2	0			
Total	•	53	56	109	100	100			

# **BUMTHANG DZONGKHAG**

		R	espondent	s	
Awareness Activities	Community Members				
Awareness Activities	Gender (counts)	(counts)	Total		%
	Female	Male	Total	Female	Male

Mock drill	No	36	27	63	75	73
MOCK UHII	Yes	12	10	22	25	27
Total		48	37	85	100	100
Workshops	No	48	37	85	100	100
workshops	Yes	0	0	0	0	0
Total		48	37	85	100	100
Meetings	No	34	24	58	71	65
meetings	Yes	14	13	27	29	35
Total		48	37	85	100	100
Others	No					
Others	Yes					
Total						

Table xlvii Count and percentage of the opinions of community members on the usefulness of awareness activities

	NAKHA DZON							
	Respondents							
Usefulness of Mock drill			nunity Members					
	Gender (counts)		Total		6			
	Female	Male	10141	Female	Male			
	Usefulness of Mock	x drill						
Not relevant	20	11	31	35	39			
Not useful	0	0	0	0	0			
Useful	3	2	5	5	7			
Very useful, relevant and applicable	34	15	49	60	54			
Total	57	28	85	100	100			
	Usefulness of Work	shops						
Not relevant	55	25	80	96	89			
Not useful	0	0	0	0	0			
Useful	0	2	2	0	7			
Very useful, relevant and applicable	2	1	3	4	4			
Total	57	28	85	100	100			
	Usefulness of Mee	0	1					
Not relevant	19	13	32	33	46			
Not useful	0	0	0	0	0			
Useful	3	2	5	5	7			
Very useful, relevant and applicable	35	13	48	61	46			
Total	57	28	85	100	100			
Useful	ness of Other Awarer	ness Activitie	5					
Not relevant	ness of Other Awarer	ness Activitie	5					
Not relevant Not useful	ness of Other Awarer	ness Activitie	5					
Not relevant Not useful Useful	ness of Other Awarer	ness Activitie	5					
Useful Not relevant Not useful Useful Very useful, relevant and applicable Total	ness of Other Awarer	ness Activitie	5					

Respondents           Community Members           Community Members           Gender (counts)         Total         Female         Male           Not useful         4         2         6         8         4           Not useful         2         1         3         4         2           Useful         3         7         10         6         13         4         2           Useful         53         56         109         100         100         100           Useful         2         1         3         4         2         1         3         4         2         1         3         4         2         1         3         8         11         6         14           Very useful, relevant         4         2         6         8         4         10         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100	WANGDUE P	HODRANG	DZONGK	HAG					
Community Members           Gender (courns)         Ver           Gender (courns)         Total         Fernale         Male           Not relevant         4         2         6         8         4           Juseful         2         1         3         4         2           Useful         3         7         10         6         13           Very useful, relevant and applicable         44         46         90         83         82           Total         53         56         109         100         100         100           Usefulness of Workshops         Very useful         2         1         3         4         2           Not useful         2         10         12         4         18         2         100         100         100           Very useful, relevant and applicable         2         10         12         4         18           Very useful, relevant and applicable         16         26         42         30         46           Very useful, relevant and applicable         16         26         42         30         46           Very useful, relevant and applicable			R	lesponden	ts				
Gender (counts)         Total         Female         Male           Not relevant         4         2         6         8         4           Not useful         2         1         3         4         2           Useful         3         7         10         6         13           Very useful, relevant and applicable         44         46         90         83         82           Total         53         56         109         100         100           Usefulness of Workshops           Not relevant         4         2         6         8         4           Not useful         2         10         12         4         18           Useful         53         56         109         100         100           Useful         53         56         109         100         100           Useful         3         8         11         6         14           Very useful, relevant and applicable         16         26         8         4           Not useful         1         1         2         2         2           Usefulness of Other Awarcners Activities         100									
Image         Image <th< th=""><th>Usefulness of Mock drill</th><th>Gender</th><th></th><th></th><th></th><th>0/0</th></th<>	Usefulness of Mock drill	Gender				0/0			
Not relevant         4         2         6         8         4           Not useful         2         1         3         4         2           Useful         3         7         10         6         13           Very useful, relevant and applicable         44         46         90         83         82           Total         53         56         109         100         100           Not useful         2         1         3         4         2           Not useful         2         1         3         4         2           Usefulness of Workshops         3         8         11         6         14           Very useful         2         10         12         4         18           Very useful         3         8         11         6         14           Very useful         1         1         2         2         2           Usefulness of Meetings         3         8         11         6         14           Very useful         1         1         2         2         2         2           Usefulness of Other Awarness Activititics         100         100 <th></th> <th></th> <th></th> <th>Total</th> <th>Female</th> <th></th>				Total	Female				
Not useful         2         1         3         4         2           Useful         3         7         10         6         13           Very useful, relevant and applicable         44         46         90         83         82           Total         53         56         109         100         100         100           Useful relevant         4         2         6         8         4           Not useful         2         1         3         4         2           Useful         3         8         11         6         14           Very useful, relevant and applicable         2         10         12         4         18           Total         53         56         109         100         100         100           Usefulness of Meetings         Usefulness of Meetings         11         1         2         2         2         2         14         Very useful, relevant and applicable         16         26         42         30         46         2         10         100         100         100         100         100         100         100         100         100         100         10 <th>Not relevant</th> <th></th> <th></th> <th>6</th> <th></th> <th></th>	Not relevant			6					
Useful         3         7         10         6         13           Very useful, relevant and applicable Total         44         46         90         83         82           Total         53         56         109         100         100         100           Usefulness of Workshops         1         3         4         2         1         3         4         2           Not useful         2         1         3         4         2         1         4         2           Useful         3         8         11         6         14         2         1         4         1         1         6         14         2         1         3         4         2         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100 <td< td=""><td></td><td></td><td>_</td><td></td><td>-</td><td>-</td></td<>			_		-	-			
Very useful, relevant and applicable Total         44         46         90         83         82           Total         53         56         109         100         100           Usefulness of Workshops           Not relevant         4         2         6         8         4           Not useful         3         8         11         6         14           Very useful, relevant and applicable         2         10         12         4         18           Total         53         56         109         100         100           Usefulness of Meetings           Not relevant         4         2         6         8         4           Not useful         3         8         11         6         14           Very useful, relevant         4         2         6         8         4           Not useful         1         1         2         2         2         2           Useful         3         8         11         6         14         6         2           Useful         0         1         1         0         2         0         100         100									
Total         53         56         109         100         100           Usefulness of Workshops           Not useful         2         1         3         4         2           Useful         3         8         11         6         14           Very useful, relevant and applicable         2         10         12         4         18           Total         53         56         109         100         100         100           Usefulness of Meetings           Not relevant         4         2         6         8         4           Not useful         1         1         2         2         2           Usefulness of Meetings         3         8         11         6         14           Very useful, relevant and applicable         16         26         42         30         46           Total         3         1         4         6         2         0           Not relevant         3         1         1         0         2         0           Very useful, relevant and applicable         53         56         109         100         100           Total<									
Usefulness of Workshops           Not relevant         4         2         6         8         4           Not useful         2         1         3         4         2           Useful         3         8         11         6         14           Very useful, relevant and applicable         2         10         12         4         18           Total         53         56         109         100         100           Usefulness of Meetings           Not relevant         4         2         6         8         4           Not useful         1         1         2         2         2           Useful         3         8         11         6         14           Very useful, relevant and applicable         16         26         42         30         46           Very useful         10         1         0         2         0           Useful         3         1         4         6         2           Not useful         0         1         1         0         2         0           Useful         0         1         0         2									
Not useful         2         1         3         4         2           Useful         3         8         11         6         14           Very useful, relevant and applicable Total         2         10         12         4         18           Very useful, relevant and applicable         53         56         109         100         100           Usefulness of Meetings         Very useful         1         1         2         2         2           Useful         3         8         11         6         14           Very useful, relevant and applicable         16         26         42         30         46           Total         53         56         109         100         100           Useful         3         8         11         6         14           Very useful, relevant and applicable         53         56         109         100         100           Useful         0         1         1         0         2         0         0           Very useful, relevant and applicable         53         56         109         100         100           Total         3         1         4 <t< td=""><td></td><td>1</td><td></td><td></td><td></td><td></td></t<>		1							
Not useful         2         1         3         4         2           Useful         3         8         11         6         14           Very useful, relevant and applicable Total         2         10         12         4         18           Very useful, relevant and applicable         53         56         109         100         100           Usefulness of Meetings         Very useful         1         1         2         2         2           Useful         3         8         11         6         14           Very useful, relevant and applicable         16         26         42         30         46           Total         53         56         109         100         100           Useful         3         8         11         6         14           Very useful, relevant and applicable         53         56         109         100         100           Useful         0         1         1         0         2         0         0           Very useful, relevant and applicable         53         56         109         100         100           Total         3         1         4 <t< td=""><td>Not soloment</td><td>4</td><td>2</td><td>6</td><td>0</td><td>4</td></t<>	Not soloment	4	2	6	0	4			
Useful         3         8         11         6         14           Very useful, relevant and applicable         2         10         12         4         18           Total         53         56         109         100         100           Usefulness of Meetings           Not relevant         4         2         6         8         4           Not useful         1         1         2         2         2           Useful         3         8         11         6         14           Very useful, relevant and applicable         16         26         42         30         46           Yery useful, relevant and applicable         16         26         42         30         46           Yery useful, relevant and applicable         0         1         1         0         2           Useful         1         0         1         2         0         0           Very useful, relevant and applicable         53         56         109         100         100           Total         3         1         4         6         2         0           Very useful, relevant and applicable         53				-	-				
Very useful, relevant and applicable Total         2         10         12         4         18           Total         53         56         109         100         100           Usefulness of Meetings           Not relevant         4         2         6         8         4           Not useful         1         1         2         2         2           Useful         3         8         11         6         14           Very useful, relevant and applicable         16         26         42         30         46           Total         53         56         109         100         100           Usefulness of Other Awareness Activities           Not relevant         3         1         4         6         2           Not useful         0         1         1         0         2         0           Very useful, relevant and applicable         53         56         109         100         100           Total         3         1         4         6         2         0           Usefulness of Mock drill         6         6         7         63         75         73									
Total         53         56         109         100         100           Usefulness of Meetings           Not useful         1         1         2         2         2           Useful         1         1         2         2         2           Useful         3         8         11         6         14           Very useful, relevant and applicable         16         26         42         30         46           Total         53         56         109         100         100           Useful, relevant and applicable         16         26         42         30         46           Total         53         56         109         100         100           Usefulness of Other Awareness Activities           Not useful         0         1         1         0         2           Useful relevant and applicable         53         56         109         100         100           Total         3         1         4         6         2           Community Members           Gender (counts) <t< td=""><td></td><td></td><td></td><td></td><td></td><td>-</td></t<>						-			
Usefulness of Meetings           Not relevant         4         2         6         8         4           Not useful         1         1         2         2         2           Useful         3         8         11         6         14           Very useful, relevant and applicable         16         26         42         30         46           Total         53         56         109         100         100           Useful, relevant and applicable         3         1         4         6         2           Not useful         0         1         1         0         2         0           Useful, relevant and applicable         53         56         109         100         100           Useful, relevant and applicable         53         56         109         100         100           Total         3         1         4         6         2           BUMTHANG DZONGKHAG           Total         7         73           Male         Male         Female         Male           Not relevant         36         27         63 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
Not useful         1         1         2         2         2           Useful         3         8         11         6         14           Very useful, relevant and applicable         16         26         42         30         46           Total         53         56         109         100         100           Usefulness of Other Awareness Activities           Not relevant         3         1         4         6         2           Not useful         0         1         1         0         2         0           Very useful, relevant and applicable         53         56         109         100         100         2           Useful         1         0         1         2         0         0         100         100         100           Total         1         0         1         2         0         0         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100		1	1	L	1				
Useful         3         8         11         6         14           Very useful, relevant and applicable Total         16         26         42         30         46           Total         53         56         109         100         100           Usefulness of Other Awareness Activities           Not relevant         3         1         4         6         2           Not useful         0         1         1         0         2         0           Very useful, relevant and applicable         53         56         109         100         100           Yery useful, relevant and applicable         53         56         109         100         100           Total         3         1         4         6         2           BUMTHANG DZONGKHAG           Community Members           Gender (counts)         Total $\overline{Female}$ Male           Not relevant         36         27         63         75         73           Not useful         0         0         0         0         0         0           Usefulness of Workshops         Usefulness of Workshops	Not relevant	4	2	6	8	4			
Very useful, relevant and applicable       16       26       42       30       46         Total       53       56       109       100       100         Usefulness of Other Awareness Activities         Not relevant       3       1       4       6       2         Not useful       0       1       1       0       2         Useful       1       0       1       2       0         Very useful, relevant and applicable       53       56       109       100       100         Total       3       1       4       6       2       0         BUMTHANG DZONGKHAG         Community Members         Gender (counts)       7       7         Not relevant       36       27       63       75       73         Not useful       0       0       0       0       0       0         Usefulness of Workshops       12       10       22       25       27         Not useful       0       0       0       0       0       0         Userfulness of Workshops       Userfulness of Workshops       0       0       0       0 <td>Not useful</td> <td>1</td> <td>1</td> <td>2</td> <td>2</td> <td>2</td>	Not useful	1	1	2	2	2			
Total         53         56         109         100         100           Usefulness of Other Awareness Activities           Not relevant         3         1         4         6         2           Not useful         0         1         1         0         2           Useful         1         0         1         2         0           Very useful, relevant and applicable         53         56         109         100         100           Total         3         1         4         6         2           BUMTHANG DZONGKHAG           Respondents           Community Members           Gender (counts)           Total         36         27         63         75         73           Not relevant         36         27         63         75         73           Not useful         0         0         0         0         0         0           Usefulness of Workshops         Usefulness of Workshops         Not relevant         0         0         0         0           Not relevant         0         0         0         0         0 <t< td=""><td></td><td>3</td><td>8</td><td>11</td><td>6</td><td>14</td></t<>		3	8	11	6	14			
Total         53         56         109         100         100           Usefulness of Other Awareness Activities           Not relevant         3         1         4         6         2           Not useful         0         1         1         0         2           Useful         1         0         1         2         0           Very useful, relevant and applicable         53         56         109         100         100           Total         3         1         4         6         2           BUMTHANG DZONGKHAG           Respondents           Community Members           Gender (counts)           Total         36         27         63         75         73           Not relevant         36         27         63         75         73           Not useful         0         0         0         0         0         0           Usefulness of Workshops         Usefulness of Workshops         Not relevant         0         0         0         0           Not relevant         0         0         0         0         0 <t< td=""><td></td><td></td><td>26</td><td>42</td><td>30</td><td></td></t<>			26	42	30				
Not relevant         3         1         4         6         2           Not useful         0         1         1         0         2           Useful         1         0         1         2         0           Very useful, relevant and applicable         53         56         109         100         100           Total         3         1         4         6         2           BUMTHANG DZONGKHAG           Community Members           Gender (counts)         Total         %           Mot relevant         36         27         63         7%           Not relevant         36         27         63         75         73           Not useful         0         0         0         0         0         0           Very useful, relevant and applicable         12         10         22         25         27           Total         48         37         85         100         100           Very useful         0         0         0         0         0           Not relevant         0         0         0						100			
				-	_				
Very useful, relevant and applicable Total         53         56         109         100         100           Total         3         1         4         6         2           BUMTHANG DZONGKHAG           BUMTHANG DZONGKHAG           Total         %           Community Members           Gender (counts)         %           Not relevant         36         27         63         75         73           Not useful         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0			1		-				
Total         3         1         4         6         2           BUMTHANG DZONGKHAG           BUMTHANG DZONGKHAG           Gender (counts)         Total         %           Gender (counts)         Total         %           Female         Male           Not relevant         36         27         63         75         73           Not useful         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0			-	-		-			
BUMTHANG DZONGKHAGBUMTHANG DZONGKHAGRespondentsCommunity MembersGender (counts)Total $\frac{\%}{Female}$ MaleNot relevant362763Not relevant362763Not relevant00Useful00Useful00Not relevant and applicable1210222527Total483785100Usefulness of WorkshopsNot relevant00000O0000000Not relevant00000000000O00Not relevant000Not relevant0 <th c<="" td=""><td></td><td></td><td></td><td></td><td></td><td></td></th>	<td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Respondents           Community Members           Gender (counts)         Total         %           Remale         Male         %           Not relevant         36         27         63         75         73           Not relevant         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0 <th< td=""><td>Total</td><td>3</td><td>1</td><td>4</td><td>6</td><td>2</td></th<>	Total	3	1	4	6	2			
Community Members           Gender (counts)         Total         %           Gender (counts)         Total         %           Not relevant         36         27         63         75         73           Not useful         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	BUMTH	HANG DZO		esponden	te				
Gender (counts)         Total $\frac{6}{\text{Female}}$ Male           Not relevant         36         27         63         75         73           Not useful         0         0         0         0         0         0           Useful         0         0         0         0         0         0         0           Useful         0         0         0         0         0         0         0           Very useful, relevant and applicable         12         10         22         25         27           Total         48         37         85         100         100           Usefulness of Workshops         Usefulness of Workshops         0         0         0         0           Not useful         0         0         0         0         0         0         0           Very useful, relevant         0         0         0         0         0         0         0         0           Very useful, relevant and applicable         0         0         0         0         0         0         0									
Female         Male         Total         Female         Male           Not relevant         36         27         63         75         73           Not useful         0         0         0         0         0         0           Useful         0         0         0         0         0         0         0           Very useful, relevant and applicable         12         10         22         25         27           Total         48         37         85         100         100           Usefulness of Workshops         Usefulness of Workshops         0         0         0         0           Not useful         0         0         0         0         0         0         0           Very useful, relevant         0         0         0         0         0         0         0           Very useful         0         0         0         0         0         0         0           Very useful, relevant and applicable         0         0         0         0         0         0	Usefulness of Mock drill	Condor		Ĩ Î		0/_			
Not relevant         36         27         63         75         73           Not useful         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0 </th <th></th> <th></th> <th>· · /</th> <th>Total</th> <th>Femala</th> <th></th>			· · /	Total	Femala				
Not useful         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	Not relevant			63					
Useful         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100									
Very useful, relevant and applicable         12         10         22         25         27           Total         48         37         85         100         100           Usefulness of Workshops           Not relevant         0         0         0         0         0           Not useful         0         0         0         0         0         0         0           Useful         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0		-				-			
Total         48         37         85         100         100           Usefulness of Workshops           Not relevant         0         0         0         0         0           Not useful         0         0         0         0         0         0           Useful         0         0         0         0         0         0         0           Useful         0         0         0         0         0         0         0           Very useful, relevant and applicable         0         0         0         0         0         0			>	0	-				
Usefulness of WorkshopsNot relevant0000Not useful0000Useful0000Useful0000Very useful, relevant and applicable000									
Not relevant         0         0         0         0         0         0           Not useful         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	rotat	40	57	05	100	100			
Not useful         0         0         0         0         0           Useful         0         0         0         0         0         0           Very useful, relevant and applicable         0         0         0         0         0         0	Use	fulness of Worl	kshops						
Useful         0         0         0         0         0           Very useful, relevant and applicable         0         0         0         0         0         0	Not relevant	0	0	0	0	0			
Very useful, relevant and applicable 0 0 0 0 0	Not useful	0	0	0	0	0			
	Useful	0	0	0	0	0			
	Very useful, relevant and applicable	0	0	0	0	0			
	Total	0	0	0	0	0			

	Usefulness of Mee	etings			
Not relevant	34	24	58	71	65
Not useful	0	0	0	0	0
Useful	0	0	0	0	0
Very useful, relevant and applicable	14	13	27	29	35
Total	48	37	85	100	100
Usefulne Not relevant	ess of Other Aware	ness Activities	5		
Not useful					
Useful					
Very useful, relevant and applicable					
Total					

Table xlviiiOpinions about the occurrence of GLOF

	PUNAK	HA DZON	GKHAG			
			R	espondent	S.	
			Comm	unity Mer	nbers	
		Gender (counts) Total				
		Female	Male	Total	Female	Male
Do you thigh you will not	No	15	6	21	26	21
Do you think you will not	Don't know	19	11	30	33	39
experience GLOF in winter?	Yes	23	11	34	40	39
Total		57	28	85	100	100
	WANGDUE PH	IODRANG	DZONGKI	IAG		
			R	espondent	S	
			Comm	unity Mer	nbers	
		Gender	(counts)	<b>77</b> . 1	0	0
		Female	Male	Total	Female	Male
	No	15	27	42	28	48
Do you think you will not	Don't know	26	19	45	49	34
experience GLOF in winter?	Yes	12	10	22	23	18
Total		53	56	109	100	100
	<b>BUMTH</b>	ANG DZOI	NGKHAG			
			R	espondent	S	
			Comm	unity Mer	nbers	
		Gender	(counts)	· · · · ·	0	/ ₀
		Female	Male	Total	Female	Male
	No	14	20	34	29	54
Do you think you will not	Don't know	30	16	46	63	43
experience GLOF in winter?	Yes	4	1	5	8	3
Total		48	37	85	100	100

Table xlixrelevance, effectiveness, efficiency, sustainability, and impact of the awareness and education programs carried out on the risk of a GLOF

PUNAKHA DZONGKHAG								
		Respondents						
			Community Members					
		Gender	(counts)	Total	%			
		Female	Male	Total	Female	Male		
Relevance	Missing	1	0	1	2	0		

	Not relevant	9	5	14	16	18
	Relevant	47	23	70	82	82
Total		57	28	85	100	100
	Missing	1	0	1	2	0
	Highly satisfactory	33	13	46	58	46
	Highly					
	unsatisfactory	7	4	11	12	14
	Moderately			_	_	
Effectiveness	satisfactory	3	4	7	5	14
	Moderately	2	1	3	4	4
	Unsatisfactory	2	1	3	4	4
	Satisfactory	9	5	14	16	18
	Unsatisfactory	2	1	3	4	4
Total		57	28	85	100	100
	Missing	1	0	1	2	0
	Highly satisfactory	31	13	44	54	46
	Highly	0	2	11	1.4	11
	unsatisfactory	8	3	11	14	11
Efficiency	Moderately	7	3	10	12	11
Efficiency	satisfactory	/	3	10	12	11
	Moderately	0	1	1	0	4
	unsatisfactory		1	1	0	
	Satisfactory	8	6	14	14	21
	Unsatisfactory	2	2	4	4	7
Total		57	28	85	100	100
	Missing	1	0	1	2	0
	Likely	36	17	53	63	61
Sustainability	Moderately likely	10	4	14	18	14
Sustamability	Moderately	4	3	7	7	11
	Unlikely	4	5	/		11
	Unlikely	6	4	10	11	14
Total		57	28	85	100	100
	Missing	1	0	1	2	0
Impact	Minimal	8	5	13	14	18
Impact	Negligible	7	6	13	12	21
	Significance	41	17	58	72	61
Total		57	28	85	100	100
	WANGDUE PHO	DDRANG 1	DZONGKH	AG		
			R	lesponden	ts	
			Comn	nunity Me	mbers	
		Gender	(counts)			%
		Female	Male	Total	Female	Male
	Missing	5	0	5	9	0
Relevance	Not relevant	20	15	35	38	27
	Relevant	28	41	69	53	73
Total	1	53	56	109	100	100
	Missing	5	1	6	9	2
	Highly satisfactory	17	20	37	32	36
	Highly					
	unsatisfactory	15	9	24	28	16
Effectiveness	Moderately		2	_	0	-
	satisfactory	4	3	7	8	5
		7	21	28	13	38
	Satisfactory	/				
	Satisfactory Unsatisfactory	5	2	7	9	4

	Missing	5	1	6	9	2
	Highly satisfactory	16	19	35	30	34
	Highly					
	unsatisfactory	16	8	24	30	14
	Moderately	-	-	_		0
Efficiency	satisfactory	2	5	7	4	9
	Moderately	1	0	1	2	0
	unsatisfactory					č
	Satisfactory	9	20	29	17	36
	Unsatisfactory	4	3	7	8	5
Total		53	56	109	100	100
	Missing	6	1	7	11	2
Sustainability	Likely	22	32	54	42	57
,	Moderately likely	6	12	18	11	21
	Unlikely	19	11	30	36	20
Total	2011	53	56	109	100	100
	Missing	5	1	6	9	2
Impact	Minimal	6	9	15	11	16
*	Negligible	20 22	12	32	38 42	<u>21</u> 61
Total	Significance	53	<u>34</u> 56	56 109	42	100
lotal	BUMTAH			109	100	100
	DUMIAN	NG DZUN		espondent	ta	
				nunity Mer		
						%
				Total		-/0
		Gender	· /	Total		
	Missing	Female	Male		Female	Male
Relevance	Missing Not relevant	<b>Female</b> 0	<b>Male</b> 0	0	<b>Female</b> 0	<b>Male</b> 0
Relevance	Not relevant	Female           0           34	Male           0           23	0 57	Female           0           71	Male           0           62
		Female           0           34           14	Male           0           23           14	0 57 28	Female           0           71           29	Male           0           62           38
Relevance Total	Not relevant Relevant	Female           0           34           14           48	Male           0           23           14           37	0 57 28 85	Female           0           71           29           100	Male           0           62           38           100
	Not relevant Relevant Missing	Female           0           34           14           48           0	Male           0           23           14           37           0	0 57 28 85 0	Female           0           71           29           100           0	Male           0           62           38           100           0
	Not relevant Relevant Missing Highly satisfactory	Female           0           34           14           48           0           6	Male           0           23           14           37           0           2	0 57 28 85 0 8	Female           0           71           29           100           0           13	Male           0           62           38           100           0           5
Total	Not relevant Relevant Missing Highly satisfactory Highly	Female           0           34           14           48           0	Male           0           23           14           37           0	0 57 28 85 0	Female           0           71           29           100           0	Male           0           62           38           100           0
	Not relevant Relevant Missing Highly satisfactory	Female           0           34           14           48           0           6           34	Male         0           0         23           14         37           0         2           23         23	0 57 28 85 0 8 57	Female           0           71           29           100           0           13           71	Male           0           62           38           100           0           5           62
Total	Not relevant Relevant Missing Highly satisfactory Highly unsatisfactory	Female           0           34           14           48           0           6	Male         0           0         23           14         37           0         2	0 57 28 85 0 8	Female           0           71           29           100           0           13	Male           0           62           38           100           0           5
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory	Female           0           34           14           48           0           6           34	Male         0           0         23           14         37           0         2           23         23	0 57 28 85 0 8 57	Female           0           71           29           100           0           13           71	Male           0           62           38           100           0           5           62
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory	Female           0           34           14           48           0           6           34           0           8           0	Male         0         23         14         37         0         2         2         23         2         23         2         10         0         0         0         10         0         0         10         0         10         0         10         0         10         0         10         0         10         0         10         10         0         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10 <th< td=""><td>$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ \end{array}$</td><td>Female           0           71           29           100           0           13           71           0           17           0</td><td>Male           0           62           38           100           0           5           62           5           27           0</td></th<>	$ \begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ \end{array} $	Female           0           71           29           100           0           13           71           0           17           0	Male           0           62           38           100           0           5           62           5           27           0
Total	Not relevantRelevantMissingHighly satisfactoryHighlyunsatisfactoryModeratelysatisfactorySatisfactoryUnsatisfactory	Female           0           34           14           48           0           6           34           0           8           0           48	Male         0           0         23           14         37           0         2           23         2           10         0           37         37	$ \begin{array}{r} 0\\ 57\\ 28\\ 85\\ 0\\ 8\\ 57\\ 2\\ 18\\ 0\\ 85\\ \end{array} $	Female           0           71           29           100           0           13           71           0           17           0           100           100	Male           0           62           38           100           0           5           62           5           27           0           100
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Moderately         satisfactory         Missing	Female           0           34           14           48           0           6           34           0           8           0           48           0	Male         0           0         23           14         37           0         2           23         2           23         2           10         0           37         0           0         37           0         0	$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ \end{array}$	Female           0           71           29           100           0           13           71           0           17           0           1700           0           100           0	Male           0           62           38           100           0           5           62           5           27           0           100           0
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory	Female           0           34           14           48           0           6           34           0           8           0           48	Male         0           0         23           14         37           0         2           23         2           10         0           37         37	$ \begin{array}{r} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ \end{array} $	Female           0           71           29           100           0           13           71           0           17           0           100           100	Male           0           62           38           100           0           5           62           5           27           0           100
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Highly satisfactory	Female           0           34           14           48           0           6           34           0           8           0           48           0           6	Male         0         23           14         37         0         2           23         2         23         2           10         0         37         0           2         2         37         0         2           10         0         37         0         2           2         2         37         0         2	$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 8 \\ \end{array}$	Female           0           71           29           100           0           13           71           0           17           0           100           0           17           0           133	Male           0           62           38           100           0           5           62           5           27           0           100           0           5
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Highly satisfactory         Unsatisfactory         Highly satisfactory         Highly satisfactory         Highly satisfactory         Highly unsatisfactory	Female           0           34           14           48           0           6           34           0           8           0           48           0	Male         0           0         23           14         37           0         2           23         2           23         2           10         0           37         0           0         37           0         0	$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ \end{array}$	Female           0           71           29           100           0           13           71           0           17           0           1700           0           100           0	Male           0           62           38           100           0           5           62           5           27           0           100           0
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Highly satisfactory         Unsatisfactory         Missing         Highly satisfactory         Highly output         Highly         Unsatisfactory         Miderately	Female           0           34           14           48           0           6           34           0           8           0           48           0           6	Male         0         23           14         37         0         2           23         2         23         2           10         0         37         0           2         2         37         0         2           10         0         37         0         2           2         2         37         0         2	$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 8 \\ \end{array}$	Female           0           71           29           100           0           13           71           0           17           0           100           0           17           0           133	Male           0           62           38           100           0           5           62           5           27           0           100           0           5
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Highly satisfactory         Missing         Highly satisfactory         Highly satisfactory         Moderately         satisfactory         Moderately         satisfactory	Female           0           34           14           48           0           6           34           0           8           0           48           0           6           34	Male         0         23           14         37         0         2           23         2         23         2           10         0         37         0           2         23         2         2           10         0         37         0           2         23         3         3	$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 8 \\ 57 \\ \end{array}$	Female           0           71           29           100           0           13           71           0           17           0           100           0           17           0           13           71	Male           0           62           38           100           0           5           62           5           27           0           100           0           5           62           5           62           5           62           62
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Unsatisfactory         Unsatisfactory         Missing         Highly satisfactory         Highly satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory	Female           0           34           14           48           0           6           34           0           8           0           48           0           6           34	Male         0         23           14         37         0         2           23         2         23         2           10         0         37         0           2         23         2         2           10         0         37         0           2         23         3         3	$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 8 \\ 57 \\ \end{array}$	Female           0           71           29           100           0           13           71           0           17           0           100           0           17           0           13           71	Male           0           62           38           100           0           5           62           5           27           0           100           0           5           62           5           62           5           62           62
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Missing         Highly satisfactory         Missing         Highly satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory	Female           0           34           14           48           0           6           34           0           8           0           48           0           6           34           0           0           0           0           0           0           0           0           0           0	Male         0         23           0         23         14           37         0         2           23         2         23           2         10         0           37         0         2           23         2         3           0         2         23           3         0         0	$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 8 \\ 57 \\ 3 \\ 0 \\ \end{array}$	Female         0           71         29           100         0           13         71           0         13           71         0           100         0           17         0           100         0           13         71           0         13           71         0           0         0           0         0           0         0           0         0	Male           0           62           38           100           0           5           62           5           27           0           100           0           5           62           5           62           8           0
Total	Not relevantRelevantMissingHighly satisfactoryHighlyunsatisfactoryModeratelysatisfactorySatisfactoryUnsatisfactoryMissingHighly satisfactoryHighly satisfactoryMissingHighly satisfactoryModeratelysatisfactoryModeratelysatisfactoryModeratelysatisfactoryModeratelysatisfactorySatisfactorySatisfactorySatisfactory	Female           0           34           14           48           0           6           34           0           8           0           48           0           6           34           0           8           0           6           34           0           6           34           0           6           34           0           8	Male         0         23           0         23         14           37         0         2           23         2         10           0         37         0           2         23         3           0         37         0           23         3         0           9         9         9	$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 8 \\ 57 \\ 3 \\ 0 \\ 17 \\ \end{array}$	Female           0           71           29           100           0           13           71           0           17           0           100           0           17           0           100           0           13           71           0           0           13           71           0           0           13           71           0           13           71	Male           0           62           38           100           0           5           62           5           27           0           100           0           5           62           5           62           8           0           24
Total Effectiveness Total Efficiency	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Missing         Highly satisfactory         Missing         Highly satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory	Female           0           34           14           48           0           6           34           0           8           0           48           0           6           34           0           8           0           8           0           8           0	$\begin{tabular}{ c c c c c } \hline Male & 0 & & \\ \hline 0 & 23 & & \\ \hline 14 & & & \\ 37 & 0 & & \\ 2 & & & \\ 23 & & & \\ \hline 2 & & & \\ 23 & & & \\ \hline 0 & & & & \\ 22 & & & \\ 23 & & & \\ \hline 3 & & & & \\ 0 & & & \\ 9 & & & \\ 0 & & & \\ \hline \end{array}$	$\begin{array}{c c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 8 \\ 57 \\ 3 \\ 0 \\ 17 \\ 0 \\ \end{array}$	Female           0           71           29           100           0           13           71           0           17           0           100           0           17           0           100           0           13           71           0           13           71           0           0           13           71           0           13           71           0           13           71           0           13           71	Male           0           62           38           100           0           5           62           5           27           0           100           0           5           62           5           62           8           0           24
Total	Not relevantRelevantMissingHighly satisfactoryHighlyunsatisfactoryModeratelysatisfactorySatisfactoryUnsatisfactoryMissingHighly satisfactoryHighly satisfactoryHighly satisfactoryHighly satisfactoryModeratelysatisfactoryModeratelysatisfactoryModeratelysatisfactorySatisfactoryUnsatisfactoryUnsatisfactoryUnsatisfactoryUnsatisfactoryUnsatisfactoryUnsatisfactory	Female           0           34           14           48           0           6           34           0           8           0           48           0           6           34           0           8           0           6           34           0           6           34           0           6           34           0           8           0           8           0           48	Male         0           0         23           14         37           0         2           23         2           10         0           37         0           2         23           3         0           9         0           37         0	$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 17 \\ 0 \\ 85 \\ 0 \\ 17 \\ 0 \\ 85 \\ \end{array}$	Female           0           71           29           100           0           13           71           0           17           0           100           0           17           0           133           71           0           0           0           0           0           0           17           0           0           100	Male           0           62           38           100           0           5           62           5           27           0           100           0           5           62           5           62           8           0           24           0           100
Total Effectiveness Total Efficiency	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Missing         Highly satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         unsatisfactory         Moderately         unsatisfactory         Unsatisfactory         Moderately         unsatisfactory         Moderately         unsatisfactory         Missing	Female           0           34           14           48           0           6           34           0           8           0           48           0           6           34           0           8           0           6           34           0           8           0           8           0           8           0           8           0           48           0           48           0	Male         0           0         23           14         37           0         2           23         2           10         0           37         0           2         23           10         0           37         0           2         23           3         0           9         0           37         0           0         37           0         37           0         37           0         37           0         37           0         37	$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 17 \\ 0 \\ 85 \\ 0 \\ 17 \\ 0 \\ 85 \\ 0 \\ 0 \\ 17 \\ 0 \\ 85 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 17 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ $	Female         0           0         71           29         100           0         13           71         0           17         0           100         0           13         71           0         13           71         0           0         0           13         71           0         0           13         71           0         0           17         0           0         0           170         0           0         0           0         0           0         0           0         0	Male           0           62           38           100           0           5           62           5           27           0           100           0           5           62           8           0           24           0           100           0
Total Effectiveness Total Efficiency Total Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Missing         Highly satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         unsatisfactory         Moderately         unsatisfactory         Moderately         unsatisfactory         Missing         Likely	Female           0           34           14           48           0           6           34           0           8           0           48           0           6           34           0           8           0           6           34           0           8           0           8           0           8           0           48           0           11	Male         0         23           0         23         14           37         0         2           23         2         23           2         23         2           10         0         37           0         2         23           37         0         2           23         3         0           9         0         37           0         5         5	$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 88 \\ 57 \\ 3 \\ 0 \\ 17 \\ 0 \\ 85 \\ 0 \\ 17 \\ 0 \\ 17 \\ 0 \\ 16 \\ \end{array}$	Female         0           0         71           29         100           0         13           71         0           17         0           100         0           13         71           0         13           71         0           100         0           13         71           0         0           13         71           0         0           100         0           100         0           23         23	Male           0           62           38           100           0           5           62           5           27           0           100           0           5           62           8           0           24           0           100           0           14
Total Effectiveness Total Efficiency	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Missing         Highly satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         unsatisfactory         Moderately         unsatisfactory         Unsatisfactory         Moderately         unsatisfactory         Moderately         unsatisfactory         Missing	Female           0           34           14           48           0           6           34           0           8           0           48           0           6           34           0           8           0           6           34           0           8           0           8           0           8           0           8           0           48           0           48           0	Male         0           0         23           14         37           0         2           23         2           10         0           37         0           2         23           10         0           37         0           2         23           3         0           9         0           37         0           0         37           0         37           0         37           0         37           0         37           0         37	$\begin{array}{c} 0 \\ 57 \\ 28 \\ 85 \\ 0 \\ 8 \\ 57 \\ 2 \\ 18 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 85 \\ 0 \\ 17 \\ 0 \\ 85 \\ 0 \\ 17 \\ 0 \\ 85 \\ 0 \\ 0 \\ 17 \\ 0 \\ 85 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 17 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ $	Female         0           0         71           29         100           0         13           71         0           17         0           100         0           13         71           0         13           71         0           0         0           13         71           0         0           13         71           0         0           17         0           0         0           170         0           0         0           0         0           0         0           0         0	Male           0           62           38           100           0           5           62           5           27           0           100           0           5           62           8           0           24           0           100           0

	Unlikely	34	22	56	71	59
Tota	Total		37	85	100	100
	Missing	0	0	0	0	0
Impost	Minimal	3	9	12	6	24
Impact	Negligible	34	23	57	71	62
	Significance	11	5	16	23	14
Tota	ıl	48	37	85	100	100

Table lrelevance, effectiveness, efficiency, sustainability, and impact of the prevention and mitigation activities carried out on the risk of GLOF

	PUNAKH	A DZONG						
			R	lesponden	ts			
		Community Members						
		Gender (counts)			0/0			
		Female	Male	Total	Female	Male		
	Missing	1	0	1	2	0		
Relevance	Not relevant	7	4	11	12	14		
	Relevant	49	24	73	86	86		
Tota	1	57	28	85	100	100		
	Missing	1	0	1	2	0		
	Highly satisfactory	33	14	47	58	50		
	Highly unsatisfactory	4	3	7	7	11		
Effectiveness	Moderately satisfactory	3	2	5	5	7		
	Moderately unsatisfactory	5	1	6	9	4		
	Satisfactory	11	7	18	19	25		
	Unsatisfactory	0	1	1	0	4		
Tota	1	57	28	85	100	100		
	Missing	2	0	2	4	0		
	Highly satisfactory	31	14	45	54	50		
	Highly unsatisfactory	4	3	7	7	11		
Efficiency	Moderately satisfactory	3	2	5	5	7		
	Moderately unsatisfactory	4	0	4	7	0		
	Satisfactory	13	7	20	23	25		
	Unsatisfactory	0	2	2	0	7		
Tota	l	57	28	85	100	100		
	Missing	1	0	1	2	0		
	Likely	39	18	57	68	64		
Sector in a Lilit	Moderately likely	11	5	16	19	18		
Sustainability	Moderately Unlikely	2	4	6	4	14		
	Unlikely	4	1	5	7	4		
Tota	ı	57	28	85	100	100		
	Missing	1	0	1	2	0		
T	Minimal	8	6	14	14	21		
Impact	Negligible	5	4	9	9	14		
	Significance	43	18	61	75	64		

Total		57	28	85	100	100
	WANGDUE PHO	DRANGT	ZONGKH	AG		
				lespondent	S	
				nunity Mer		
		Gender	(counts)			%
		Female	Male	Total	Female	Male
	Missing	5	0	5	9	0
Relevance	Not relevant	20	15	35	38	27
Refevance	Relevant	28	41	69	53	73
Total	Recvant	53	56	109	100	100
10111	Missing	6	1	7	11	2
	Highly satisfactory	15	16	31	28	29
	Highly	16	10	26	20	
	unsatisfactory	10	10		30	18
	Moderately	3	5	8		-
Effectiveness	satisfactory				6	9
	Moderately	1	1	2		
	unsatisfactory				2	2
	Satisfactory	8	22	30	15	39
	Unsatisfactory	4	1	5	8	2
Total		53	56	109	100	100
	Missing	5	1	6	9	2
	Highly satisfactory	16	17	33	30	30
	Highly	17	11	28		
	unsatisfactory				32	20
	Moderately	3	6	9		
Efficiency	satisfactory				6	11
	Moderately	0	1	1		
	unsatisfactory				0	2
	Satisfactory	8	19	27	15	34
	Unsatisfactory	4	1	5	8	2
Total		53	56	109	100	100
	Missing	5	1	6	9	2
Sugara in a bility	Likely	22	36	58	42	64
Sustainability	Moderately likely	5	8	13	9	14
	Unlikely	21	11	32	40	20
Total		53	56	109	100	100
	Missing	5	1	6	9	2
Impost	Minimal	7	10	17	13	18
Impact	Negligible	19	12	31	36	21
	Significance	22	33	55	42	59
Total		53	56	109	100	100
	BUMTHAN	NG DZON	GKHAG			
				espondent	S	
				nunity Mer		
			COLLIN			
		Gender				%
			(counts)	- Total		% Male
	Missing	Female	(counts) Male	- Total	Female	Male
Relevance	Missing Not relevant	<b>Female</b> 0	(counts) Male	- <b>Total</b>	<b>Female</b> 0	<b>Male</b> 0
Relevance	Not relevant	Female           0           34	(counts) Male 0 22	- Total 0 56	Female           0           71	<b>Male</b> 0 59
		Female           0           34           14	(counts) Male 0 22 15	- Total 0 56 29	Female           0           71           29	Male           0           59           41
Relevance Total Effectiveness	Not relevant	Female           0           34	(counts) Male 0 22	- Total 0 56	Female           0           71	<b>Male</b> 0 59

	TT' 11					
	Highly	33	23	56	69	62
	unsatisfactory					
	Moderately	1	3	4	2	8
	satisfactory					
	Moderately	0	0	0	0	0
	unsatisfactory		-	-		
	Satisfactory	7	9	16	15	24
	Unsatisfactory	1	0	1	2	0
Total		48	37	85	100	100
	Missing	0	0	0	0	0
	Highly satisfactory	6	2	8	13	5
	Highly	34	23	57	71	62
	unsatisfactory	54	25	57	/ 1	62
	Moderately	1	3	4	2	8
Efficiency	satisfactory	1	3	4	2	8
	Moderately	0	0	0	0	0
	unsatisfactory	0	0	0	0	0
	Satisfactory	7	9	16	15	24
	Unsatisfactory	0	0	0	0	0
Total		48	37	85	100	100
	Missing	0	0	0	0	0
	Likely	10	6	16	21	16
	Moderately likely	3	8	11	6	22
Sustainability	Moderately		0			0
	Unlikely	1	0	1	2	0
	Unlikely	34	23	57	71	62
Total			37	85	100	100
	Missing	<u>48</u> 0	0	0	0	0
-	Minimal	5	8	13	10	22
Impact	Negligible	33	23	56	69	62
	Significance	10	6	16	21	16
Total		48	37	85	100	100
1014		10	51	00	100	100

Table lirelevance, effectiveness, efficiency, sustainability, and impact of the response capacities

	PUNAKH	A DZONG	KHAG					
		Respondents						
			Comm	nunity Me	mbers			
		Gender	(counts)	Total		%		
		Female	Male	Total	Female	Male		
	Missing	1	1	2	2	4		
Relevance	Not relevant	9	4	13	16	14		
	Relevant	47	23	70	82	82		
Total		57	28	85	100	100		
	Missing	1	0	1	2	0		
	Highly satisfactory	28	13	41	49	46		
	Highly unsatisfactory	6	3	9	11	11		
Effectiveness	Moderately satisfactory	8	2	10	14	7		
	Moderately unsatisfactory	4	0	4	7	0		
	Satisfactory	10	9	19	18	32		
	Unsatisfactory	0	1	1	0	4		

Total		57	28	85	100	100
	Missing	1	0	1	2	0
	Highly satisfactory	28	13	41	49	46
	Highly unsatisfactory	6	3	9	11	11
Efficiency	Moderately	5	3	8	9	11
,	satisfactory Moderately	4	1	5	7	4
	unsatisfactory					
	Satisfactory	13	7	20	23	25
	Unsatisfactory	0	1	1	0	4
Total		57	28	85	100	100
	Missing	1	0	1	2	0
	Likely	36	17	53	63	61
Sustainability	Moderately likely	11	6	17	19	21
Subulinusinty	Moderately Unlikely	3	2	5	5	7
	Unlikely	6	3	9	11	11
Total		57	28	85	100	100
	Missing	2	0	2	4	0
Impact	Minimal	10	7	17	18	25
impact	Negligible	8	5	13	14	18
	Significance	37	16	53	65	57
Total		57	28	85	100	100
	WANGDUE PHO	DRANG I	DZONGKH	AG		
			R	espondent	ts	
		Gender	Comn	nunity Mer	mbers	0/0
			Comn (counts)		mbers	% Male
	Missing	Female	Comn (counts) Male	nunity Mer Total	mbers Female	Male
Relevance	Missing Not relevant	Female 5	Comn (counts) Male	Total	mbers Female	<b>Male</b> 0
Relevance	Not relevant	Female           5           20	Comm (counts) Male 0 17	Total	mbers Female 9 38	Male           0           30
		Female           5           20           28	Comm (counts) Male 0 17 39	Second stress         Second stress           5         37           67         67	Female         9           38         53	Male           0           30           70
Relevance Total	Not relevant Relevant	Female           5           20           28           53	Comm (counts) Male 0 17 39 56	<b>Total</b> 5 37 67 109	Pemale           9           38           53           100	Male           0           30           70           100
	Not relevant Relevant Missing	Female           5           20           28           53           5	Comm (counts) Male 0 17 39 56 1	Total           5           37           67           109           6	Female           9           38           53           100           9	Male           0           30           70           100           2
	Not relevant         Relevant         Missing         Highly satisfactory	Female           5           20           28           53	Comm (counts) Male 0 17 39 56	<b>Total</b> 5 37 67 109	Pemale           9           38           53           100           9           28	Male           0           30           70           100
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory	Female           5           20           28           53           5	Comm (counts) Male 0 17 39 56 1	<b>Total</b> 5 37 67 109 6	Female           9           38           53           100           9	Male           0           30           70           100           2
	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory	Female           5           20           28           53           5           15           17           4	Comm           (counts)           Male           0           17           39           56           1           19           11           3	Total           5           37           67           109           6           34           28           7	Female           9           38           53           100           9           28           32           8	Male           0           30           70           100           2           34           20           5
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory	Female           5           20           28           53           5           15           17           4           8	Comm (counts) Male 0 17 39 56 1 1 19 11 3 21	Total           5           37           67           109           6           34           28           7           29	Female           9           38           53           100           9           28           32           8           15	Male           0           30           70           100           2           34           20           5           38
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory	Female           5           20           28           53           5           15           17           4           8           4	Comm (counts) Male 0 17 39 56 1 1 19 11 3 21 1	Total           5           37           67           109           6           34           28           7           29           5	Female           9           38           53           100           9           28           32           8           15           8	Male           0           30           70           100           2           34           20           5           38           2
Total	Not relevantRelevantMissingHighly satisfactoryHighlyunsatisfactoryModeratelysatisfactorySatisfactoryUnsatisfactory	Female           5           20           28           53           5           15           17           4           8           4           53	Comm (counts) Male 0 17 39 56 1 1 19 11 3 21 1 3 21 1 56	Total           5           37           67           109           6           34           28           7           29           5           109	Female           9           38           53           100           9           28           32           8           15           8           100	Male           0           30           70           100           2           34           20           5           38           2           100
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Moderately         satisfactory         Missing	Female           5           20           28           53           5           15           17           4           8           4           53           5	Comm (counts) Male 0 17 39 56 1 1 19 11 3 21 1 3 21 1 56 1	Total           5           37           67           109           6           34           28           7           29           5           109           6	Female       9       38       53       100       9       28       32       8       15       8       100       9	Male           0           30           70           100           2           34           20           5           38           2           100           2
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory	Female           5           20           28           53           5           15           17           4           8           4           53	Comm (counts) Male 0 17 39 56 1 1 19 11 3 21 1 3 21 1 56	Total           5           37           67           109           6           34           28           7           29           5           109	Female           9           38           53           100           9           28           32           8           15           8           100	Male           0           30           70           100           2           34           20           5           38           2           100
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Highly satisfactory         Unsatisfactory         Unsatisfactory         Unsatisfactory         Highly satisfactory         Highly         unsatisfactory	Female           5           20           28           53           5           15           17           4           8           4           53           5	Comm (counts) Male 0 17 39 56 1 1 19 11 3 21 1 3 21 1 56 1	Total           5           37           67           109           6           34           28           7           29           5           109           6	Female       9       38       53       100       9       28       32       8       15       8       100       9	Male           0           30           70           100           2           34           20           5           38           2           100           2
Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Satisfactory         Unsatisfactory         Missing         Highly satisfactory         Highly satisfactory	Female           5           20           28           53           5           15           17           4           8           4           53           5           15	Comm (counts) Male 0 17 39 56 1 1 19 11 3 21 1 3 21 1 56 1 1 56 1 1 56	Total           5           37           67           109           6           34           28           7           29           5           109           6           34           28           7           29           5           109           6           30	Female         9         38         53         100         9         28         32         8         15         8         100         9         28	Male           0           30           70           100           2           34           20           5           38           2           100           2           34
Total Effectiveness Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Unsatisfactory         Missing         Highly satisfactory         Unsatisfactory         Missing         Highly satisfactory         Highly satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately	Female           5           20           28           53           5           15           17           4           8           4           53           5           15           17           4           8           4           53           5           15           16	Comm (counts) Male 0 17 39 56 1 1 19 11 3 21 1 3 21 1 56 1 1 56 1 1 56 1 1 56	Total           5           37           67           109           6           34           28           7           29           5           109           6           34           28           7           29           5           109           6           30           26	Second State           Female           9           38           53           100           9           28           32           8           15           8           100           9           28           32           8           15           8           100           9           28           30	Male           0           30           70           100           2           34           20           5           38           2           100           2           34           20           5           38           2           100           2           27           18
Total Effectiveness Total	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Unsatisfactory         Missing         Highly satisfactory         Unsatisfactory         Missing         Highly satisfactory         Missing         Highly satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         unsatisfactory	Female           5           20           28           53           5           15           17           4           8           4           53           5           15           16           4           2	Comm           (counts)           Male           0           17           39           56           1           19           11           3           21           1           56           1           56           1           56           1           56           1           56           1           56           1           56           1           56           1           56           1           56           1           56           1           56           1           5           10           4           1	Total           5           37           67           109           6           34           28           7           29           5           109           6           34           28           7           29           5           109           6           30           26           8           3	Female         9         38         53         100         9         28         32         8         15         8         100         9         28         32         8         100         9         28         30         8         4	Male           0           30           70           100           2           34           20           5           38           2           100           2           34           20           5           38           2           100           2           27           18           7           2
Total Effectiveness Total	Not relevantRelevantMissingHighly satisfactoryHighly unsatisfactoryModeratelysatisfactorySatisfactoryUnsatisfactoryMissingHighly satisfactoryHighly satisfactoryMissingHighly unsatisfactoryModeratelysatisfactoryModeratelysatisfactoryModeratelysatisfactoryModeratelysatisfactorySatisfactorySatisfactorySatisfactory	Female           5           20           28           53           5           15           17           4           8           4           53           5           15           16           4           2           8	Comm (counts) Male 0 17 39 56 1 19 11 3 21 1 3 21 1 56 1 1 56 1 1 56 1 1 56 1 1 56 1 1 56 1 1 56 1 1 22	Total           5           37           67           109           6           34           28           7           29           5           109           6           30           26           8           3           30	Female         9         38         53         100         9         28         32         8         15         8         100         9         28         32         8         100         9         28         30         8         4         15	Male           0           30           70           100           2           34           20           5           38           2           100           2           34           20           5           38           2           100           2           27           18           7           2           39
Total Effectiveness Total Efficiency	Not relevant         Relevant         Missing         Highly satisfactory         Highly         unsatisfactory         Moderately         satisfactory         Unsatisfactory         Missing         Highly satisfactory         Unsatisfactory         Missing         Highly satisfactory         Missing         Highly satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         satisfactory         Moderately         unsatisfactory	Female           5           20           28           53           5           15           17           4           8           4           53           5           15           16           4           2           8           3	Comm (counts) Male 0 17 39 56 1 19 11 3 21 1 3 21 1 56 1 1 56 1 1 56 1 1 56 1 1 56 1 1 56 1 1 56 1 1 22 3	Total           5           37           67           109           6           34           28           7           29           5           109           6           30           26           8           30           6           30           6	Female         9         38         53         100         9         28         32         8         15         8         100         9         28         32         8         100         9         28         30         8         4         15         6	Male           0           30           70           100           2           34           20           5           38           2           100           2           34           20           5           38           2           100           2           27           18           7           2           39           5
Total Effectiveness Total	Not relevantRelevantMissingHighly satisfactoryHighly unsatisfactoryModeratelysatisfactorySatisfactoryUnsatisfactoryMissingHighly satisfactoryHighly satisfactoryMissingHighly unsatisfactoryModeratelysatisfactoryModeratelysatisfactoryModeratelysatisfactoryModeratelysatisfactorySatisfactorySatisfactorySatisfactory	Female           5           20           28           53           5           15           17           4           8           4           53           5           15           16           4           2           8	Comm (counts) Male 0 17 39 56 1 19 11 3 21 1 3 21 1 56 1 1 56 1 1 56 1 1 56 1 1 56 1 1 56 1 1 56 1 1 22	Total           5           37           67           109           6           34           28           7           29           5           109           6           30           26           8           3           30	Female         9         38         53         100         9         28         32         8         15         8         100         9         28         32         8         100         9         28         30         8         4         15	Male           0           30           70           100           2           34           20           5           38           2           100           2           34           20           5           38           2           100           2           27           18           7           2           39

	Moderately likely	8	8	16	15	14
	Moderately	1	0	1	2	0
	unlikely	1	0	1	2	0
	Unlikely	19	11	30	36	20
Total		53	56	109	100	100
	Missing	5	1	6	9	2
Impact	Minimal	7	6	13	13	11
Impact	Negligible	20	12	32	38	21
	Significance	21	37	58	40	66
Total		53	56	109	100	100
	BUMTHAN	NG DZON				
				espondent		
			Comn	nunity Me	mbers	
		Gender	(counts)	T1		%
		Female	Male	Total	Female	Male
	Missing	0	0	0	0	0
Relevance	Not relevant	34	23	57	71	62
	Relevant	14	14	28	29	38
Total		48	37	85	100	100
	Missing	0	0	0	0	0
	Highly satisfactory	6	2	8	13	5
	Highly unsatisfactory	34	23	57	71	62
Effectiveness	Moderately satisfactory	1	3	4	2	8
	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	7	9	16	15	24
	Unsatisfactory	0	0	0	0	0
Total		48	37	85	100	100
	Missing	0	0	0	0	0
	Highly satisfactory	6	2	8	13	5
	Highly unsatisfactory	34	23	57	71	62
Efficiency	Moderately satisfactory	1	3	4	2	8
	Moderately unsatisfactory	0	0	0	0	0
	Satisfactory	7	9	16	15	24
	Unsatisfactory	0	0	0	0	0
Total	1 ·	48	37	85	100	100
	Missing	0	0	0	0	0
	Likely	11	7	18	23	19
Sustainability	Moderately likely	2	7	9	4	19
5	Moderately Unlikely	3	0	3	6	0
	Unlikely	32	23	55	67	62
Total		48	37	85	100	100
	Missing	0	0	0	0	0
Impact	Minimal	3	7	10	6	19
mpact	Negligible	34	23	57	71	62
	Significance	11	7	18	23	19

Total	48	37	85	100	100		

Table liiRespondent and household information of community me	nbers
---------------------------------------------------------------	-------

	GASA DZO	NGKHAG	
		Frequency	Percent
Gender	Female	7	70.0
	Male	3	30.0
7	Total	10	100.0
	Farmer	7	70.0
	Business	0	0
	Civil servant	0	0
Profession	House wife	2	20.0
	Student	1	10.0
	Teacher	0	0
	Others	0	0
7	l'otal	10	100.0
	Married	6	60.0
Marital status	Single	3	30.0
Marital status	Divorcee	1	10.0
	Others	0	0
7	l'otal	10	100.0
	Concrete	0	0
T (1	Typical Bhutanese	10	100.0
Type of house	Bago(hut)	0	0
	Others	0	0
7	Total	10	100
	1 storied	7	70.0
N	2 storied	3	30.0
No. of story	3 storied	0	0
	Others	0	0
7	Total	10	100.0
T :	Illiterate	8	80.0
Literacy	Literate	2	20.0
7	Total	10	100.0

Table liiiKnowledge of hazards and vulnerabilities

G	GASA DZONG	KHAG					
		Respondents					
			Comm	unity Me	embers		
		Gender (	counts)		0	/ ₀	
		Female	Male	Total	Femal e	Male	
Do you think that you and your family members	No	1	0	1	14	0	
are vulnerable to hazard?	Yes	6	3	9	86	100	
Total		7	3	10	100	100	
Have you or any members of your household	No	3	1	4	43	33	
experienced any disaster in the past?	Yes	4	2	6	57	67	
Total		7	3	10	100	100	
In your opinion, are you better prepared to deal	No	3	1	4	43	33	
with such disaster than the last event?	Yes	4	2	6	57	67	
Total		7	3	10	100	100	
	Men	1	0	1	14	0	
Who do you think will be the most at risk (vulnerable) during natural disaster?	Women	5	3	8	71	100	
(vumerable) during natural disaster?	Women and	1	0	1	14	0	

	Children					
Total		7	3	10	100	100
Do you think there are different requirements	No	5	2	7	71	67
for response and preparedness to GLOF for men and women?	Yes	2	1	3	29	33
Total		7	3	10	100	100

Lable littl heacter	management training
	management trainings
	management trainings

GA	SA DZON	GKHAG						
		Respondents						
			Comm	unity M	embers			
		Gender (	counts)		0	<b>0</b>		
		Female	Male	Total	Femal e	Male		
Have you participated in mock drill?	No	7	2	9	100	67		
Have you participated in mock drift	Yes	0	1	1	0	33		
Total		7	3	10	100	100		
Have you participated in any disaster related	No	5	2	7	71	67		
awareness workshops or meeting?	Yes	2	1	3	29	33		
Total		7	3	10	100	100		
Did you attend any community based training	No	7	3	10	100	100		
on disaster management?	Yes	0	0	0	0	0		
Total		7	3	10	100	100		
Is there problem for women attending these	No	6	3	9	86	100		
disaster related workshops or trainings?	Yes	1	0	1	14	0		
Total		7	3	10	100	100		
	Male	0	0	0	0	0		
Who should be trained in disaster risk	Female	0	0	0	0	0		
management?	Both equally	7	3	10	100	100		
Total		7	3	10	100	100		

## Table lvAwareness

GASA DZONGKHAG							
		Respondents					
			Commu	nity Me	mbers		
		Gender (o	counts)		%		
		Female	Male	Total	Femal	Mal	
		Female	Male		e	e	
If there is GLOF, is your	No	2	1	3	29	33	
house and household at risk?	Yes	5	2	7	71	67	
	Total	7	3	10	100 100		
Who are the most vulnerable	Male member of the family	1	1	2	14	33	
from your household	Female member of the family	5	1	6	71	33	
members if there is a GLOF	Children	0	0	0	0	0	
outburst?	Elderly member of the family	1	1	2	14	33	
	Total	7	3	10	100	100	
In your opinion, is your	No	4	2	6	57	67	
house strong enough to withstand an earthquake?	Yes	3	1	4	43	33	
	Total 7 3 10 100		100	100			
Are you aware that there are	No	5	3	8	71	100	

. 1 . 1 1 . 1			1			r –
government building and seismic codes for						
constructing new house to	Yes	2	0	2	29	0
	1 es	2	0	2	29	0
prevent injuries related to						
earthquake?	/T ¹ - 1	7	2	10	100	100
	Total	7	3	10	100	100
During an earthquake, what	Run outside	4	2	6	57	67
do you have to do?	Duck under a table or a desk	3	1	4	43	33
5	Sit on a floor against a wall	0	0	0	0	0
	Total	7	3	10	100	100
	Media – radio	4	1	5	57	33
From where did you	Media – newspaper	0	0	0	0	0
hear/learn about the risk	Awareness campaigns	3	2	5	43	67
and mitigations related to	Trainings/workshops	0	0	0	0	0
natural disaster?	Posters/pamphlets	0	0	0	0	0
	Others	0	0	0	0	0
	Total	7	3	10	100	100
Did you see the brochure on	Yes	0	0	0	0	0
earthquake?	No	7	3	10	100	100
	Total	7	3	10	100	100
Did you see the brochure on	Yes	0	0	0	0	0
GLOF?	No	7	3	10	100	100
	Total	7	3	10	100	100
Did you see these posters	Yes	0	0	0	0	0
any where?	No	7	3	10	100	100
	Total	7	3	10	100	100
Do you know when an	Yes	0	0	0	0	0
earthquake will strike?	No	7	3	10	100	100
caren cance win series	Total	7	3	10	100	100
	Raining heavily for days	4	2	6	57	67
When is the most likely for	Immediately after an earthquake	0	0	0	0	0
GLOF to occur?	Don't know	3	1	4	43	33
	Total	7	3	10	100	100
Will you know if there is a	Yes	6	1	7	86	33
glacial lake outburst?	No	1	2	3	14	67
glacial lake outbuist:	Total	7	3	10	100	100
	Yes		2		57	67
If there is a GLOF warning		4 3		6		
system, did you ever hear it?	No		1	•	43	33
<del></del>	Total	7	3	10	100	100
In your opinion, can your	Yes	5	3	8	71	100
household members be	<b>N</b> T	_	0		00	_
saved by the early warning	No	2	0	2	29	0
system from GLOF?				10	100	100
	Total	7	3	10	100	100
Immediately after a flood or	Yes	0	0	0	0	0
an earthquake, is it safe to	No	7	3	10	100	100
enter the house?						
	Total	7	3	10	100	100
After the floods, is it safe to	Yes	0	0	0	0	0
go and collect the fishes?	No	7	3	10	100	100
	Total	7	3	10	100	100

Table lviResponse and preparedness

GASA DZONGKH	IAG
	Respondents

		Community Members				
		Gender (o			%	
		Female	Male	Total	Femal e	Mal e
Did you discuss with your	No	6	3	9	86	100
family members on how to deal in case there is a natural disaster?	Yes	1	0	1	14	0
	Total	7	3	10	100	100
Do you have an emergency	No	6	2	8	86	67
evacuation plan?	Yes	1	1	2	14	33
1	Total	7	3	10	100	100
Are your grains stored safely	No	7	3	10	100	100
from GLOF?	Yes	0	0	0	0	0
	Total	7	3	10	100	100
Are you grains protected	No	7	3	10	100	100
from house fire?	Yes	0	0	0	0	0
	Total	7	3	10	100	100
Are your livestock safe from	No	3	1	4	43	33
GLOF?	Yes	4	2	6	57	67
	Total	7	3	10	100	100
Is there an emergency exit in	No	7	3	10	100	100
your house?	Yes	0	0	0	0	0
·	Total	7	3	10	100	100
Do you have a family	No	7	3	10	100	100
emergency kit?	Yes	0	0	0	0	0
	Total	7	3	10	100	100
Do you have a mobile	No	1	0	1	14	0
phone?	Yes	6	3	9	86	100
•	Total	7	3	10	100	100
	No	1	0	1	14	0
Do you have a radio?	Yes	6	3	9	86	100
	Total	7	3	10	100	100
During natural disaster, how	Don't know	2	0	2	29	0
will you update the	From Bhutan news	5	3	8	71	100
information on the situation?	Others	0	0	0	0	0
	Total	7	3	10	100	100
During natural disaster, what	Save life of household members?	7	3	10	100	100
is your first priority?	Save valuable items	0	0	0	0	0
. <b></b> .	Total	7	3	10	100	100

Table lvii Count and percentage of community members able to prioritize, plan and implement measures to reduce human and material losses from potential GLOFs

PUNAKHA DZONGKHAG								
	Respondents							
Ability to:			Comm	nunity Mei	mbers			
Ability to:		Gender	(counts)	Total	%			
		Female	Male	Total	Female	Male		
	No	16	4	20	28	14		
Prioritize	Don't know	7	2	9	12	7		
	Yes	34	22	56	60	79		
Total	57	28	85	100	100			
Plan	No	2	3	5	4	11		

	Don't know	3	1	4	5	4
	Yes	52	24	76	91	86
Total		57	28	85	100	100
	No	3	1	4	5	4
Implement	Don't know	4	1	5	7	4
1	Yes	50	26	76	88	93
Total		57	28	85	100	100
	WANGDUE PH	IODRANG	DZONGK	HAG		
			R	lesponden	ts	
				nunity Me		
Ability to:		Gender	(counts)	T T		%
		Female	Male	Total	Female	Male
	No	12	9	21	23	16
Prioritize	Don't know	22	20	42	42	36
	Yes	19	27	46	36	48
Total		53	56	109	100	100
	No	12	4	16	23	7
Plan	Don't know	8	11	19	15	20
	Yes	33	41	74	62	73
Total		53	56	109	100	100
	No	10	4	14	19	7
Implement	Don't know	15	17	32	28	30
-	Yes	28	35	63	53	63
Total	·	53	56	109	100	100
	BUMTH	ANG DZOI	NGKHAG			
			R	lesponden	ts	
A 1 111.			Comn	nunity Me	mbers	
Ability to:		Gender	(counts)		(	/0
		Female	Male	Total	Female	Male
	No	4	3	7	8	8
Prioritize	Don't know	32	23	55	67	62
	Yes	12	11	23	25	30
Total		48	37	85	100	100
	No	1	0	1	2	0
Plan	Don't know	14	11	25	29	30
	Yes	33	26	59	69	70
Total		48	37	85	100	100
	No	1	1	2	2	3
Implement	Don't know	22	14	36	46	38
	Yes	25	22	47	52	59
Total		48	37	85	100	100

Table lviii Count and percentage of community members who are able to take precautionary measures in the event of

GLOF

PUNAKHA DZONGKHAG							
		Respondents					
		Comm	unity Mer	nbers			
		Gender (counts)		Total	0⁄0		
		Female	Male	Total	Female	Male	
Able to take propositioners	No	4	2	6	7	7	
Able to take precautionary measure	Don't know	19	6	25	33	21	
	Yes	34	20	54	60	71	
Total		57	28	85	100	100	

	WANGDUE PH	IODRANG	DZONGK	HAG		
			R	espondent	ts	
			Comn	nunity Me	mbers	
		Gender (counts) Total			1	%
		Female	Male	Total	Female	Male
Able to take precautionary measure	No	12	5	17	23	9
	Don't know	15	13	28	28	23
	Yes	26	38	64	49	68
Total	Total			109	100	100
	BUMTH	ANG DZOI	NGKHAG			
			R	espondent	ts	
			Comn	nunity Me	mbers	
		Gender	(counts)	Terel		%
		Female	Male	Total	Female	Male
Able to take propositionary	No	3	2	5	6	5
Able to take precautionary	Don't know	22	16	38	46	43
measure	Yes	23	19	42	48	51
Total		48	37	85	100	100

Table lix Count and percentage of disaster management plans in place at the community level

	PUNAK	HA DZON	GKHAG			
			R	Responden	ts	
			Comr	nunity Me	mbers	
		Gender (counts) Total %			/ ₀	
		Female	Male	Total	Female	Male
Does your community have	No	6	7	13	11	25
disaster management plans in	Don't know	6	2	8	11	7
place?	Yes	45	19	64	79	68
Total		57	28	85	100	100
N N	<b>WANGDUE PH</b>	IODRANG	DZONGK	HAG		
			R	lesponden	ts	
			Comr	nunity Me	mbers	
		Gender	(counts)		0	/ ₀
		Female	Male	Total	Female	Male
Does your community have	No	12	4	16	23	7
disaster management plans in	Don't know	8	11	19	15	20
place?	Yes	33	41	74	62	73
Total		53	56	109	100	100
	BUMTH	ANG DZOI	NGKHAG			
			R	lesponden	ts	
			Comr	nunity Me	mbers	
		Gender	(counts)		0	/o
		Female	Male	Total	Female	Male
Does your community have	No	22	16	38	46	43
disaster management plans in	Don't know	14	11	25	29	30
place?	Yes	12	10	22	25	27
Total	•	48	37	85	100	100

Table lx Count and percentage of Gewog/Chiwog/community which reviewed their CBDRM plan

# PUNAKHA DZONGKHAG

			R	esponden	ts		
			Comn	nunity Me	mbers		
		Gender (counts)		77 . 1	%		
		Female	Male	Total	Female	Male	
Have you reviewed your CDPM plan)	No	43	17	60	75	61	
Have you reviewed your CDRM plan?	Yes	14	11	25	25	39	
Total		57	28	85	100	100	
WANGI	DUE PH	IODRANG	DZONGK	HAG			
			R	esponden	ts		
			Comn	nunity Me	mbers		
		Gender	(counts)	Terel	(	%	
		Female	Male	- Total	Female	Male	
Have you reviewed your CDRM plan?	No	43	45	88	81	80	
Trave you reviewed your CDRM plan	Yes	10	11	21	19	20	
Total		53	56	109	100	100	
В	UMTH	ANG DZOI	NGKHAG				
			R	esponden	ts		
			Comn	nunity Me	mbers		
		Gender	(counts)	Total	(	%	
		Female	Male	Total	Female	Male	
Have you reviewed your CDRM plan?	No	48	37	85	100	100	
	Yes	0	0	0	0	0	
Total		48	37	85	100	100	

Table lxiAssessment of to what extent the needs of different groups are addressed

	PUNA	KHA DZON	GKHAG							
			Respondents							
Needs of:			Comr	nunity Me	mbers					
Inclus of:		Gender	Gender (counts)		0	/0				
		Female	Male	Total	Female	Male				
	Don't know	0	0	0	0	0				
Men	Fully addressed	45	20	65	79	71				
Men	Not at all addressed	10	3	13	18	11				
	Partially addressed	2	5	7	4	18				
	Total	57	28	85	100	100				
Women	Don't know	0	0	0	0	0				
	Fully addressed	3	3	6	5	11				
	Not at all addressed	12	9	21	21	32				
	Partially addressed	42	16	58	74	57				
	Total	57	28	85	100	100				
	Don't know	0	0	0	0	0				
Down	Fully addressed	32	14	46	56	50				
Boys	Not at all addressed	10	6	16	18	21				
	Partially addressed	15	8	23	26	29				
	Total	57	28	85	100	100				
	Don't know	0	0	0	0	0				
Girls	Fully addressed	4	4	8	7	14				
Gifls	Not at all addressed	14	6	20	25	21				
	Partially addressed	39	18	57	68	64				
	Total	57	28	85	100	100				
	WANGDUE I	PHODRANG	DZONGK	HAG						

		Respondents						
Needs of:			Comn	nunity Me	mbers			
Neeus of:		Gender	(counts)	77 . 1	0	6		
		Female	Male	Total	Female	Male		
	Don't know	2	0	2	4	0		
24	Fully addressed	29	43	72	55	77		
Men	Not at all addressed	14	10	24	26	18		
	Partially addressed	8	3	11	15	5		
	Total		53	56	109	100		
	Don't know	2	0	2	4	0		
\$377	Fully addressed	4	7	11	8	13		
Women	Not at all addressed	26	28	54	49	50		
	Partially addressed	21	21	42	40	38		
	Total		53	56	109	100		
	Don't know	2	0	2	4	0		
D	Fully addressed	13	18	31	25	32		
Boys	Not at all addressed	19	13	32	36	23		
	Partially addressed	19	25	44	36	45		
	Total		53	56	109	100		
	Don't know	2	0	2	4	0		
0.1	Fully addressed	5	6	11	9	11		
Girls	Not at all addressed	29	28	57	55	50		
	Partially addressed	17	22	39	32	39		
	Total		53	56	109	100		
	BUMT	HANG DZON	NGKHAG	•				
			R	lesponden	ts			
				nunity Me				
Needs of:		Gender			%			
		Female	Male	Total	Female	Male		
	Don't know	0	0	0	0	0		
	Fully addressed	16	10	26	33	27		
Men	Not at all addressed	26	21	47	54	57		
	Partially addressed	6	6	12	13	16		
	Total	48	37	85	100	100		
	Don't know	0	0	0	0	0		
1177	Fully addressed	0	0	0	0	0		
Women	Not at all addressed	29	25	54	60	68		
	Partially addressed	19	12	31	40	32		
	Total	48	37	85	100	100		
	Don't know	0	0	0	0	0		
D	Fully addressed	8	6	14	17	16		
Boys	Not at all addressed	28	21	49	58	57		
	Partially addressed	12	10	22	25	27		
	Total	48	37	85	100	100		
	Don't know	0	0	0	0	0		
	Fully addressed	0	0	0	0	0		
Girls	Not at all addressed	30	25	55	63	68		
	Partially addressed	18	12	30	38	32		

PUNAKHA DZONGKHAG					
	Respondents				

			Comm	unity Mer	nbers	
		Gender	(counts)	Total	0	/0
		Female	Male	Total	Female	Male
A C ::: ::	No	2	2	4	4	7
Are you aware of mitigation work at Thorthormi lake?	Don't know	3	0	3	5	0
	Yes	52	26	78	91	93
Total	57	28	85	100	100	
	WANGDUE PH	IODRANG	DZONGKI	HAG		
			R	espondent	S	
			Comm	unity Mer	nbers	
		Gender	(counts)	Total	0	/0
		Female	Male	Total	Female	Male
	No	6	3	9	11	5
Are you aware of mitigation work at Thorthormi lake?	Don't know	3	2	5	6	4
work at 1 northormi lake?	Yes	44	51	95	83	91
Total	•	53	56	109	100	100

Table lxiiiRating of Thorthormi lake mitigation work

	PUNAK	HA DZON	GKHAG			
			R	esponden	ts	
				nunity Me		
		Gender	(counts)			%
		Female	Male	Total	Female	Male
	A success	51	24	75	89	86
	Neither a					
	success nor	6	4	10	11	14
	failure					
If yes, how would you rate	A failure	0	0	0	0	0
Thorthormi lake mitigation work?	Unanswered					
WORK?	(not aware of	0	0	0	0	0
	mitigation		0	0	0	0
	work)					
	No idea	0	0	0	0	0
Total	•	57	28	85	100	100
	WANGDUE PH	IODRANG	DZONGK	HAG		
			R	esponden	ts	
			Comn	nunity Me	mbers	
		Gender	(counts)			%
		Female	Male	Total	Female	Male
	A success	36	45	81	68	83
	Neither a					
	success nor	10	8	18	19	10
	failure					
If yes, how would you rate Thorthormi lake mitigation	A failure	0	0	0	0	0
work?	Unanswered					
work?	(not aware of	6	3	9	11	6
	mitigation	U	5	2	11	0
	work)					
	No idea	1	0	1	2	1
Total		53	56	109	100	100

Table lxivMitigation work and the risk of GLOF

# PUNAKHA DZONGKHAG

			R	esponden	ts	
		Community Members				
		Gender	(counts)	Total	%	
		Female	Male	Total	Female	Male
	Yes	40	19	59	70	68
With GLOF mitigation work done, do you now think the risk of GLOF has been reduced to a safe level?	To some extent	12	6	18	21	21
	Don't know	5	2	7	9	7
	No	0	1	1	0	4
Total		57	28	85	100	100
W	ANGDUE PH	IODRANG	DZONGKI	HAG		
			R	esponden	ts	
			Comn	nunity Me	mbers	
		Gender	(counts)	71		%
		Female	Male	Total	Female	Male
	Yes	32	34	66	60	61
With GLOF mitigation work done, do you now think the risk	To some extent	9	17	26	17	30
of GLOF has been reduced to a	Don't know	10	2	12	19	4
safe level?	No	1	2	3	2	4
	Missing	1	1	2	2	2
Total		53	56	109	100	100

Table lxvAwareness of Community Early Warning System

	PUNAK	HA DZON	GKHAG			
			R	espondent	ts	
			Comn	nunity Mer	mbers	
		Gender	(counts)	Tatal		%
		Female	Male	- Total	Female	Male
	Missing	0	0	0	0	0
Are you aware of Community Early Warning System?	No	2	0	2	4	0
	Yes	55	28	83	96	100
Total	57	28	85	100	100	
W	ANGDUE PH	HODRANG	DZONGK	HAG		
			R	espondent	ts	
			Comn	nunity Mer	mbers	
		Gender	(counts)	Total		%
		Female	Male	Total	Female	Male
Are you aware of Community	Missing	1	0	1	2	0
Early Warning System?	No	4	0	4	8	0
Early warning System:	Yes	48	56	104	91	100
Total	53	56	109	100	100	

Table lxviThe reach of Early Warning System

	PUNAK	HA DZON	GKHAG			
			R	espondent	s	
			Comm	unity Mer	nbers	
		Gender	(counts)	Total		%
		Female	Male	Total	Female	Male
Is there Early Warning System	Missing	0	0	0	0	0
Is there Early Warning System installed in your community?	Don't know	3	0	3	5	0
instaned in your community:	No	3	1	4	5	4

	Yes	51	27	78	89	96
Total	•	57	28	85	100	100
v	ANGDUE PH	IODRANG	DZONGKI	HAG		
			R	espondent	ts	
			Comm	nunity Mei	mbers	
		Gender	(counts)	Tatal	0	%
		Female	Male	Total	Female	Male
	Missing	1	0	1	2	0
Is there Early Warning System	Don't know	2	1	3	4	2
installed in your community?	No	3	1	4	6	2
	Yes	47	54	101	89	96
Total		53	56	109	100	100

 Table lxviiThe roles of community focal persons with respect to community Early Warning System

	PUNAK	HA DZON	GKHAG			
			R	lesponden	ts	
			Comn	nunity Me	mbers	
		Gender	(counts)	Tatal		%
		Female	Male	Total	Female	Male
	Missing	0	0	0	0	0
How important is the role of	Not important	1	0	1	2	0
community focal persons with respect to community early	Somewhat important	1	0	1	2	0
warning system?	Very important	55	28	83	96	100
Total		57	28	85	100	100
N	WANGDUE PH	ODRANG	DZONGK	HAG		
			R	lesponden	ts	
			Comn	nunity Me	mbers	
		Gender	(counts)			%
		Female	Male	Total	Female	Male
	Missing	5	1	6	9	2
How important is the role of	Not important	1	0	1	2	0
community focal persons with respect to community early	Somewhat important	7	1	8	13	2
warning system?	Very important	40	54	94	75	96
Total	• •	53	56	109	100	100

Table lxviiiUsefulness of the Early Warning System

	PUNAK	HA DZON	GKHAG			
			R	esponden	ts	
			Comn	nunity Me	mbers	
		Gender	(counts)	Total	0	/0
		Female	Male	Total	Female	Male
Do you think EWS would help	Missing	0	0	0	0	0
reduce human and material	Don't know	1	0	1	2	0
losses in your valley in the event	No	0	0	0	0	0
of GLOF?	Yes	56	28	84	98	100
Total		57	28	85	100	100
W	ANGDUE PH	IODRANG	DZONGK	HAG		
			R	esponden	ts	
			Comn	nunity Me	mbers	

		Gender	(counts)	Total		%
		Female	Male	Total	Female	Male
Do you think EWS would help	Missing	1	0	1	2	0
reduce human and material	Don't know	1	1	2	2	2
losses in your valley in the event	No	0	0	0	0	0
of GLOF?	Yes	51	55	106	96	98
Total		53	56	109	100	100

## 7.2 TERMS OF REFERENCE

Terms of Reference for the National Consultant

Title:

Qualitative-Based Survey (QBS) of awareness, preparedness and response capacities related to climate change induced risks and vulnerabilities and the documentation of lessons and experiences.

#### A. Background:

The Royal Government of Bhutan has initiated the first National Adaptation Program of Action on climate change project on - Reducing Climate Change-Induced Risks and Vulnerabilities from Glacial Lake Outburst Floods in the Punakha-Wangdi and Chamkhar Valleys – funded by an LDCF /GEF through UNDP and co-funded by the Austrian Government, the WWF and RGoB. The project duration is for five years (2008 – 2013) and was conceived and implemented to support the RGoB in reducing climate-change induced Glacial Lake Outburst Flood (GLOF) risks and vulnerabilities. Under the project, three main Components/activities are implemented to reduce the risk of GLOF, viz;

- Reducing the level of Thorthorm' lake implemented by the Department of Geology and Mines (DGM),
- Installation of the automatic Early Warning System (EWS) implemented by the Department of Hydro-met Services (DHMS)and
- Raising awareness on GLOF risks and building capacities in the vulnerable areas implemented by the Department of Disaster Management.

The important activities of DDM are to build capacities at National, Dzongkhag (District), Gewog(Block)and Community-levels to enhance awareness, preparedness and response levels to deal with climate changeinduced risks and vulnerabilities DDM activities in the pilot Dzongkhags included.

- The drafting and consultation process for the enactment of the Disaster Management Act 2013;
- Training of Dzongkhag and Gewog Officials, Local Functionaries and Vulnerable Communities in the Community Based Disaster Risk Management approach to formulate preparedness plans and prioritize and implement mitigation and preparedness measures through community based interventions;
- Sensitization workshop and training on mainstreaming DRR for Dzongkhag/Gewog officials and local functionaries to initiate integration of climate risk reduction into plan, policy and development activities;
- Capacity building program for school teachers and students on disaster preparedness and response.
- End to end awareness campaigns in communities on risk of GLOF and hazard zonation maps through posters, pamphiets and documentary clip, animation and through various media;
- Development and testing of Community Based Early Warning System through appointment of community focal points in each vulnetable community and designing of systematic information flow mechanisms for GLOF event;
- Demarcation of GLOF hazard zonation by installation of iron pillars and wooden pegs based on GLOF hazard maps in Punakha-Wangdue and Chamkhar Valley,

- Identification of safe GLOF evacuation sites/toutes in vulnerable communities and conducting evacuation drills following test activation of the Automatic Early warning System;
- Capacity development program for DOM, MoHCA, Dzongkhag and Gewog officials and local functionaries through ex-country training, workshop and institutional visit.

#### B. Objectives of the Assignment

The objectives of this contract are -

- To carry out a comprehensive gender-sensitive QBSin pilot areas to assess the level of disaster awareness, preparedness and response capacities in vulnerable communities, in particular, to climate change-induced risks and vulnerabilities, such as GLOF.
- To document lessons learned and experiences, particularly for activities undertaken to raise awareness and strengthen community preparedness.

#### C. Comprehensive gender-sensitive Qualitative Based Survey (QBS):

The project results especially those related to capacity development and strengthening of disaster management are require to be assessed through Qualitative Based Survey (QBS). Although there was no baseline established at the beginning of the project in 2008, a baseline QBS was carried out in 2011 to establish the base line data on the level of awareness, preparedness and response capacities related to climate change risks and vulnerabilities at various levels in the project areas.

The study was conducted at three levels – at the National level through consultations with the DDM and administering in-depth interviews to national sector focal persons, at Dzongkhag and Gewog level through in-depth interviews with disaster management committee and team members and focus group discussions and, at the community level through a community based qualitative survey. At all times, and all levels, efforts were made to gather gender-disaggregated data.

Similarly, the final comprehensive gender-sensitive QBS will be conducted to assess the level of awareness and capacity at various levels in the three pilot Dzongkhags of Punakha, Wangdue Phodrang and Bumthang and to find out how and whether vulnerable communities have benefited from this project.

#### D. Results/Expected outcomes:

- Review and update the survey questionnaires based on the attached data requirements and additional information from the project manager, as required. Survey methodology (including sample size) and questionnaires must be approved by DDM before launching the survey.
- Conduct the survey according to acceptable research and statistical protocols and analyze results accordingly
- 3. Conduct data cleaning, data entry and analysis of all items listed in Annex 1. Data requirements
- Submit draft report and present survey findings and recommendations to DDM and key stakeholders.

Incorporate comments and feedback into final report for submission in soft copy together with the filled-in questionnaires and dataset

#### E. Methodology:

Data collection should be based on the questionnaires prepared by the consultant according to the data requirements specified in Annex 1. Both, Quantitative and Qualitative methods will be used. Interviews will be carried out with individuals at the national level and at various levels under Punakha, Wangdue and BumthangDzongkhags.

- 1. Interview with National Disaster Management Focal points (at least 70% of national focal points)
- Interview with Dzongkhag Disaster Management Focal points, Dzongkhag Disaster Management Committee and Dzongkhag Disaster Management Awareness and Planning Teams/ CBDRM ToTs (at least 70% of members)
- Interview with Gewog Disaster Management Committee and CBDRM ToTs (at least 70% of members)
- 4 Interview with community members, from households, school teachers, students, other agencies/institutions existing in identified communities (statistically representative sample size from each identified target area)

#### F. Scope of work for QBS

#### 1. Sample area and size

At the district level, the targets Dzongkhags to be surveyed arePunakha, Wangdue and Burnthang districts. Interviews and survey sample size shall be as per requirements in E. Methodology above.

Under Punakha and WangduePhodrangDzongkhags, the following 14 communities shall be targeted.

- t. Wolathang
- 2 Samdingkha
- 3 Jara
- 4. Tsekha
- 5 Changjukha
- 6 Shedra area near Punakhadzong
- 7. Old Punakha town
- 8 Khuruthang
- 9 Samthang
- to BajoThangu
- 11. Bajothang
- 12. Tsokona
- 13. Chichilum area near Rinchengang village
- 14. Hesofhangkha
- 15 Basachhu
- 16. Kamichhu

Under BumthangDzongkhag, the following communities shall be targeted:

- Wangd/Chooling
- Dekiling
- Jilikhar
- Gongidhar
- Chamkhar
- Tamzhing
- Dorjibee
- Gooling

The Department has conducted the survey using same questionnaires in Lunana Gewog under Gasa Dzongkha, which is one of the vulnerable communities from the GLOF. The Department will be sharing completed survey questionnaires with consultant for Data Analysis, Validation and inclusion in the final Report.

#### 2 Review and Update of survey questionnaires

The Department will be providing a set of questionnaires used at various levels during the initial QBS conducted in 2011 Consultant would be responsible for reviewing and updating the questionnaires and sharing it with the Department of Disaster Management for finalization before launching the survey.

#### 3. Selecting, training, fielding and supervising the enumerators

The Consultant will be responsible for providing experienced and competent enumerators. Training of the enumerators is needed to ensure competent and uniform administration of the survey questionnaire. Any cost related to the enumerators shall be borne by the Consultant firm.

### 4. Data collection

After the training and final selection of the enumerators, the Consultant will be responsible for conducting the survey as per the agreed methodology and sample size. Any problems encountered during the fieldwork shall be managed by the Consultant's firm.

#### 5. Quality control of data collected

DDM will coordinate with the Consultant on a regular basis to monitor the progress of the enumeration and completion of the survey. To ensure quality control, a random selection of communities will be contacted by the DDM to confirm that the enumerator did conduct the interview and a small number of answers will be validated.

#### 6 Data Analysis, Validation and Report Writing

The Consultant will be responsible for data cleaning, data entry, data analysis, validation and report writing.

The data analysis should include all aspects listed in the data requirements (Annex 1) and suggest recommendations to improve the level of awareness and preparedness/response capacities of the respondents. The data should be gender disaggregated and include an analysis of gender-related aspects, i.e. special needs of men/women in relation to climate change induced risks and vulnerabilities, early warning systems, etc.

The draft report and final report should be prepared by the Consultant and presented and submitted to the Director General, Department of Disaster Management, Ministry of Home & Cultural Affairs. The survey firm is not allowed to share data with any third party, and no identifying information should be released, used for other projects/purposes or sold to any third party.

#### 7. Documentation of all the lessons and experiences derived from the project-

The Department under this project has carried out various Disaster Risk Management program in the form of Trainings, Workshops, door to door Awareness campaign, public consultation meetings, mock dnlls, evacuation drills, etc. Under this task, the Consultant is expected to synthesize the lessons learned and identify and document best practices from the activities implemented. The Consultant is expected to

7.1. Review the various workshop/training/meeting reports

7.2. Prepare comprehensive report on achievements made under the project including lessons learned and experiences gained from this project.

#### G. Qualifications of National Consultant

- Academic and professional background (minimum of Bachelor's Degree) in Sociology, Social Work/Social Sciences, Rural Development, Business or Public Administration, Environment or fields related to Climate Change/Disaster Management;
- A minimum of 5 years of working experience in the development sector in Bhutan is required. Experience in conducting research related to disaster management and climate change would be an advantage.
- 3. Understanding of disaster management and climate change adaptation in Bhutan;
- 4 Proficiency in field research and statistical protocols, preferably in the area of disaster management/ climate change;
- 5 Excellent communication and interviewing skills and ability to interact with grass root level respondents.
- 6. Proficiency in writing and communicating both in English and in Dzongkha,
- 7. Proficiency with statistical packages/software used in analyzing survey results;
- 8. Should hold a valid Bhutanese consultancy license; and
- 9 Excellent in human relations, coordination, planning and team work.

(Please enclose any supporting documents)

#### H. Timeframe and work plan:

Please submit your proposed work plan/ timeframe, including statistically representative sample size under the target areas, for implementing the above activities within 30 days from the date of signing of the contract. As a guideline, the tentative timeframe includes.

- 10 days for consultations with DDM, desk review of training/meeting/workshop reports and review and finalization of questionnaires, and training of e-numerators.
- 2 21 days for data collection and field work in Thimphu, Punakha, Wangdue and Burnthang;
- 3 7 days for data entry and analysis;
- 4 15 days for report writing, presentation and finalization incorporating comments/feedback from DDM and relevant stakeholders

#### 1. Earnest Money Deposit:

Sealed quotation must be submitted with an earnest money of 2 % of the quoted amount (quotation without EMD will not be entertained).

#### J. Payment Terms:

The complete cost of the above study will be paid in the following manner:

10% of the total cost will be paid on the award of the work contract against the submission of bank guarantee of the same.

25% of the total cost will be paid upon submission of the finalized survey questionnaires and completion of desk review of training/meeting/workshop reports.

25% of total cost will be paid upon submission and presentation of the draft final report.

40% of the cost will be made on submission of the final report (both QBS and documentation of lesson learned) in soft copy along with entire raw data and the soft copy of the report.

#### Annex 1: Data requirements

The survey should respond to; but is not limited to, the following data requirements.

 All aspects marked with "should be analyzed from a gender-perspective (additional information to be given by DDM)

#### Background

- "All data should be gender disaggregated (i.e. number of men/women interviewed/represented in DM focal points/ committees/team, number of women headed households interviewed)
- Identification of statistically representative sample survey size for households in the identified target areas
- *Total population of each Dzongkhag/Gewog/Chiwog surveyed
- No. of households (Hh) in each Dzongkhag/Gewog/Chiwog surveyed

National level (Interviews with at least 70% of National Disaster Management focal points, Thimphul

- *Percentage of national DRM focal points able to prioritize, plan, and implement measures to reduce human and material losses from potential GLOFs
- Number of government departments actively accessing and utilizing dimate risk information
- *Percentage of respondents trained or participated in sensitization workshops organized by DDM
- Measures to improve awareness/capacity of national DRM focal points

District and Gewog level (Interviews with at least 70% of Dzonokhag Disaster Management Focal points, Dzonokhag Disaster Management Committee and Dzongkhag Disaster Management Teams and with Gewog Disaster Management Committee and Teams in each of the three districts)

- Percentage/number of respondents interviewed trained in CBDRMMainstreaming DRR/School Disaster Preparedness and Response/ Dzong Fire Safety Training etc. by DDM
- *Percentage/number of respondents interviewed participated in awareness activities (i.e. meetings, workshop, mockdnill)
- *Percentage of district DRM focal points and DRM committees members able to prioritize, plan, and implement measures to reduce human and material losses from potential GLOFs
- "Percentage of DRM focal points at Dzongkhag, Gewog and community level reporting that Disaster Management frameworks and guidelines support climate change adaptation efforts"
- *Number of Dzongkhag and Gewog Disaster Management Committees in project areas incorporating long-term climate risk planning into their ongoing DRM responsibilities
- Number/percentage of Disaster Management Plans in place at the Dzong/Gewog level
- *Awareness of roles and responsibilities in a disaster situation
- * Assessment of whether different needs of men/women/boys/girls in a disaster situation are addressed
- Number and awareness level of Vulnerability and Risk assessments conducted at the Dzong/Gewog level
- Level of awareness and enforcement of Circular on land use based on GLOF hazard zonation mapping issued by MoHCA
- Measures to improve awareness/capacity of Dzongkhag and Gewog DRM focal points, committees and teams

Community level (Interviews with household member, school feachers, students and persons in identified communities (statistically representative sample size from identified target areas in the three districts))

- *Percentage /number of respondents interviewed trained in CBDRM/School Disaster Preparedness and Response/ Dzong Fire Safety Training etc. by DDM
- Percentage/number of respondents interviewed participated in awareness activities (i.e. meetings, workshop, mockdnil)
- **Percentage of communities able to prioritize, plan, and implement measures to reduce human and material losses from potential GLOFs*
- **Percentage of households in target communities who are able to take precautionary measures and react to potential GLOFs in a way to minimize human and material losses*
- + Number/percentage of Disaster Management Plans in place at the community-level
- Number/percentage of Gewog/Chiwog/Community reviewed their CBDRM plan
- *Awareness level on role/what to do in a disaster situation
- *Assessment of the different needs of men/women/boys/girls in a disaster situation and how these are addressed
- "Measures to improve awareness/capacity of communities

- * Number of vulnerable target communities in Punakha-Wangdi Valley reached by early warning system (specify whether manual or automatic system) For Punakha-Wangdue Dzongkhag only
- **Percentage of households in vulnerable communities in Punakha-Wangdueable to receive and respond to warnings in time to avoid human losses. For Punakha-Wangdue Dzongkhag only
- **Percentage of households invulnerable communities in Punakha-Wangdue aware of the new automatic GLOF early warning system- For Punakha-Wangdue Dzongkhag only
- "Number of communities in vulnerable communities in Punakha-Wangdue aware of location and access routes to safe GLOF evacuation areas (even for Burnthang Dzongkhag). For Punakha-Wangdue Dzongkhag only
- "Number of communities in vulnerable communities in Punakha-Wangdue and Chamkhar valley aware of GLOF hazard zonation (level of risk from GLOF)- For Punakha-Wangdue Dzongkhag only

# 7.3 QUESTIONNAIRES

# 7.3.1 Interview Questionnaire for National Level Focal Persons

D:	Name:					
23	Gender			-		
1	a. Male	E.				
	b. Female					
51	Household head:					
0	a.Yes 🖾					
	b. No					
6	Designation:			-		
5)	Department:					
	a. Ministr	Contract the second states				
		Ministry of Age				
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Are these any long-term prevention/mitigation strategies/activities for GLOF or other hazards 9) in your district or sector's annual or five year plan?

- a Yes
- e. Don't know

10) Are you aware of the following disaster management plans?

	Yet	No	Don't know
a) Disaster Management Act of Bhutan - 2013			
b) Community-Based Disaster Risk Management (CEDRM)			
e) Gewog Disaster Management Policy and Strategy			
d) Drongkhag Disaster Management Policy and Strategy			
a) School Disaster Management Policy and Strategy			
f) Sector Disaster Management Policy and Strategy			
g) National Disaster Management Framework 2006			

#### 11) Do your sector plans, policies and activities have DRR and CCA incorporated into them?

	Sector plans/policies/activities	
TIPE	Yes 🛄	
DRR	No 🗖	
CCA	Yes 🔲	
CUA	No 🗖	

12) Do you think that the disaster management plans are successfully implemented?

-	165	
	3.7	
D.	NO	

13) Do you think that your sector is prepared to respond in the event of a disaster?

- a. Fully prepased
- b. Partially prepared
- Beginning to prepare
   Not prepared at all

14) In your opinion, are the distncts now better prepared to deal with the GLOF after the implementation of the project?

- * Yes
- c. Don't know 🔲

How do awarene	ss and edu		ARENE	1	nsk of a GLC	OF relate
the main objectiv GLOF project?						
		R			NR	
Relevance	1. 281		120 000	1		constant.
To what extent h	ave the ou	toomes and	objectives o	f the progra	ms been achi	ieved?
Effectiveness	HS	Š.	MS	MU	U	HU
Was it implement	ted efficien	tly and in-li	ne with inte	enational, ni	ational norms	and
standarda?	TTC	6	1.00	1 807		
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Is it sustainable?						-
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	subsequently train change-induced a	nings cond	octed selate	to the main	objective o		
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1	Relevance	he and a second					
	To what extent h	ave the out	toomes and	objectives b	een achieves	42	
-	Effectiveness	HS	S	MS	MU	U	HU
	Was it implement standards?	ed efficien	tly and in-li	ne with inte	mational, n	tional norms	and
-	Efficiency	HS	s II	MS	MU	U	HU
ł	Is it sustainable?			-	1	-	
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t				E	1	E	1
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## 7.3.2 Interview Questionnaire for *Dzongkhag* and *Gewog* Focal Persons

Interviewer's Name: Date: District: Gewog: Village/Community:

) Ge ) Ho ) De ) Lin ) Na	me:	Yes	No
) Ho ) De ) Lin ) Na	a. Male b. Female vusehold head a. Yes b. No asignation:  eracy: a. Literate b. Illiterate b. Illiterate c. b. c.	1200	_
) De Lin ) Na	b. Female susehold head a. Yes b. No signation: eracy: a. Literate b. Illiterate b. Illiterate b. Illiterate c	1200	_
) De Lin ) Na	a. Yes b. No signation: eracy: a. Literate b. Illiterate b. Illiterate c. e you trained in the following: a) Community-Based Disaster Risk Management (CBDRM)	1200	_
) De Lin ) Na	a. Yes b. No signation eracy a. Literate b. Illiterate b. Illiterate c. b. c.	1200	_
) Lin ) Na ) An	b. No signation: eracy: a. Literate b. Illiterate me of committee(s) you are member of: a. b. c. e you trained in the following: a) Community-Based Disaster Risk Management (CBDRM)	1200	_
) Lin ) Na ) An	signation: eracy: a. Literate b. Illiterate me of committee(s) you are member of: a. b. c. e you trained in the following: a) Community-Based Disaster Risk Management (CBDRM)	1200	_
Are	a. Literate	1200	_
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Ta la la	c. e you trained in the following: a) Community-Based Disaster Risk Management (CBDRM)	1212	_
Ta la la	e you trained in the following: a) Community-Based Disaster Rink Management (CBDRM)	1212	_
Ta la la	a) Community-Based Disaster Risk Management (CBDRM)	1212	_
	Management (CBDRM)	1212	_
	Management (CBDRM)	1212	_
	Management (CBDRM)		
a	b) Mainstreaming Disaster Risk Reduction		
	DRR)		
	c) School Disaster Preparedness and Response		
12	d Dzong Fire Safety Training		
	e) Others ()		
Ha	ve you participated in the following awareness activ	ities carried ou	t by DDM:
E		Yes	No
	s) Mockdrill		
	b) Workshops	8	
	c) Meetings		
1	e) Others ()	12	
	<ol> <li>Are they useful²</li> </ol>		
	Useful Very useful	relevant and a	pplicable Not usefu
a) Mo			

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	Planning Implementing				
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adaptation a. 1 b. N	i efforts? les [] lo [] Jon't know []		nosons and tran	sewodts support clima	te change
	22				
your projection a. 1 b. 5	fes 🔲		s planning into 70	ue ongoing DRM seep	onsibiliti
				14/157	
				1	
2) Does your	community h		gement plans in s		í.
		Yes	gement plans in s	Doe't know	Í
a) (	Community-D	Yes	Committee of the second s		
a) ( b) c)] 3) Are you an a 3	Community-D Gewog-DMP Distnet-DMP vare of your m		Committee of the second s	Dos't know	
a) ( b) c) ] b) Areyou av a 14 b. 2 c. C 4) In your op addressed?	Community-D Gevrog-DMP District-DMP vare of your ro lo an't say i. If yes, innion, how fa	Yes MP	No	Doe't know	
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4) In your op addressed? Needs of a) Men How?	Community-D Gewog-DMP Distnet-DMP vare of your m as an't say i. If yes, union, how fa	Yes MP	No	Doe't know	
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<ul> <li>a) (b)</li> <li>b) (c) 1</li> <li>c) 1</li> <li>b) N</li> <li>c) C</li> <li>4) In your op addinessed?</li> <li>Needs of a) Men</li> <li>How?</li> <li>b) Wome</li> <li>How?</li> <li>c) Boys</li> </ul>	Community-D Gewog-DMP Distnet-DMP vare of your m as an't say i. If yes, union, how fa	Yes MP	No	Doe't know	

-	Number of ti	mes conducted
a) Gewog	1	
b) Drongkha	2	
<ul> <li>after the implementar</li> <li>a. High</li> <li>b. Medium</li> <li>c. Low</li> </ul>	tion of the project?	nd eisk assessment in your community
<ul> <li>Your level of awaren hazard zonation map         <ul> <li>High</li> <li>High</li> <li>Medium</li> <li>Low</li> </ul> </li> </ul>	ping issued by MoHCA ²	r about the land use based on GLOF
8) From your experience		avare to improve awareness/capacity
	ag incorporate Disarter Risk Redu ctivities into your annual and 5-ye	oction (DRR) and Climate Change
raspondence (C-Cra) a	Annual Plan	Five-Year Plan
-	Yet 🗖	Yes
DRR	No 🗖	No 🗐
CCA	Yes 🗖	Yes 🗖
	No 🗖	No
If no, why?		
) Does rour Gewog in	comorate Disaster Risk Reductio	n /DRR) and Climate Change Adaptat
	corporate Disaster Risk Reductio	n (DRR) and Climate Change Adaptat
		n (DRR) and Climate Change Adapta Five-Year Plan
(CCA) activities into	Your annual and 5-year plans? Annual Plan Yes 🔲	Five-Year Plan Yes 🔲
	Annual Plan Yes No	Five-Year Plan Yes No
(CCA) activities into	Annual Plan Yes No Yes	Five-Year Plan Yes No Yes
(CCA) activities into DRR CCA	Annual Plan Yes No	Yes No
(CCA) activities acto	Annual Plan Yes No Yes	Five-Year Plan Yes No Yes
(CCA) activities into DRR CCA	Annual Plan Yes No Yes	Five-Year Plan Yes No Yes
(CCA) activities anto DRR CCA	Annual Plan Yes No Yes	Five-Year Plan Yes No Yes
(CCA) activities anto DRR CCA	Annual Plan Yes No Yes	Five-Year Plan Yes No Yes
(CCA) activities anto DRR CCA	Annual Plan Yes No Yes	Five-Year Plan Yes No Yes
(CCA) activities anto DRR CCA	Annual Plan Yes No Yes	Five-Year Plan Yes No Yes

How do awarenes		cation prog		out on the			
the main objective GLOF project?	e OI 1216-18	oreauting entity	are-change-s	nunced tist	sania vumera	contrasts fits	
Interest testers	R			1	NR		
Relevance				-		0	
To what extent ha	we the out	tcomes and	objectives o	f the progra	ms been ach	(bevei	
Effectiveness	HS	5	MS	MU	U	HU	
Was it implement standards?	ed efficien	tly and in-b	ine with inte	mational, na	stional norms	and	
Efficiency	HS	5	MS	MU	U	HU	
27.3							
Is it sustainable?	973	A		10 d	in the second	5	
Sustainability		L	M	L	MU	U	
			E	1	1	2	
Are there indicati avrareness on disa	ons that th ster tisk, i	n particular	on GLOF a	iave enhano isk?	ed the comm	"carities"	
the survey of the lot	and the second descent of the second	of the same party in the same	M				
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	CA	PACITY	DEVED	OPMEN	A		
How does capacit subsequently train change-induced in	tings couds	ucted relate	to the main	objective o			
	R			NR			
Relevance					11		
To what extent h			objectives been achieved?				
Effectiveness	HS	S	MS	MU	U	HU	
					8		
Was it implement standards?	ed efficiently and in-line with international, national norms and						
Efficiency	HS	S	MS	MU	U	HU	
Is it sostainable?			1			0.000	
Sustainability		L	M	E3.	MU	U	
	-			-		1	
Are there any visit	ble and me	eavaceable is	mepact create	do:			
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## 7.3.3 Interview Questionnaire for Community Members

63	Name:		
Ô.	Gendec .		
	a. Male		
	b. Female		
6	Age: (in years)		
Ð.,	Household head:		
	a. Yes		
	b. No		
0	Profession:		
	a Farmer		
	b. Butinett		
	c. Civil servant		
	d. House wife 🔲		
	e. Student		
	f. Teacher g. Others (		s
23	Mantal status:		2
9	a. Married		
	b. Single		
	c. Divorcee		
	d. Others (		5
ġ.	Literacy:		
1	a. Literate		
	b. Illiterate		
9	Are you trained in any of the following:		
		Yes	No
	a) Community-Based Disaster Risk		
	Management (CBDRM)	hut	hat
	b) Mainstreaming Disaster Risk Reduction		
	(DRR)	10000	
	c) School Disaster Preparedness and Response		
	d) Doong Fire Safety Training		

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A Mockdaill     B Workshops     C Meetings     C Meetings     C Others     C Meetings     C Others     C Meetings     C M			) Very useful, o	house and	Vorkshops leetings thers (	b) Wo c) Mee
b) Woekshops       Implementing         c) Meetings       Implementing         e) Others ()       Implementing         a. How useful is it?         a. How useful is it?         (a) Mockdaili         (b) Woekshops         (c) Meetings         (c) Others ()         (c) Implementing         (d) Prionizing         (e) Implementing         (f) In the event of potential GLOF, can you take precautionary measures against in the second of potential GLOF, can you take precautionary measures against in the second of potential GLOF, can you take precautionary measures against in the second of potential GLOF, can you take precautionary measures against in the second of potential GLOF, can you take precautionary measures against in the second of potential GLOF, can you take precautionary measures against in the second of potential GLOF, can you take precautionary measures against in the second of potential GLOF, can you take precautionary measures against in the second of potential GLOF, can you take precautionary measures against in the second of potential GLOF, can you take precautionary measures against in the second of potential GLOF, can you take precautionary measures against in the	Not use		) Very useful, o	house and	Vorkshops leetings thers (	b) Wo c) Mee
c) Meetings       Image: Content of potential GLOF, can you take precautionary measures against i	Not use		) Very useful, o	house and	leetings there (	c) Mee
			Very useful, p	house and	thers (	and provide the second second second
<ul> <li>a. How useful is it? </li> <li>Useful Very useful, relevant and applicable <ul> <li>a) Mochdeill</li> <li>b) Workshops</li> <li>c) Meetings</li> <li>d) Others</li> <li>d) Others</li> </ul> </li> <li>0) Can you prioritize, plan and implement measures to reduce losman and materic potential GLOFs? <ul> <li>Yes</li> <li>No</li> <li>Don't know</li> <li>a) Prioritizing</li> <li>b) Planning</li> <li>c) Implementing</li> </ul> </li> <li>1) In the event of potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential GLOF, can you take precautionary measures against in the second potential generation po</li></ul>		it and applicable N	Very useful, o	house and	10 C	e Oth
Useful     Very useful, relevant and applicable       a) Mockdaili     Image: Constraint of the second sec		it and applicable	Very useful, p	house and		
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e) Meetings     e) Others     e) Others     e) Others     f) Can you prioritize, plan and implement measures to reduce human and materic     potential GLOFs?     Ves No Don't know     a) Prioritizing     b) Planning     c) Implementing     l     l     In the event of potential GLOF, can you take precautionary measures against i	- Della			+		
e) Others () 0) Can you prioritize, plan and implement measures to reduce human and materi- potential GLOFs?   Ves No   a) Prioritizing Implementing   b) Planning Implementing   c) Implementing Implementing   1) In the event of potential GLOF, can you take precautionary measures against in				H		
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potential GLOFs?           Ves         No         Don't know           a) Prioritzing         I         I           b) Planning         I         I           c) Implementing         I         I           1) In the event of potential GLOF, can you take precautionary measures against i	1 0			<u> </u>	×) ].	+) Others (
a) Prioriting	allosses fo	2010/05/00/07/07/20/20/20	A MARKEN THE PARTY OF	Personal Contraction		
b) Planning  c) Implementing 1) In the event of potential GLOF, can you take precautionary measures against i	_	the second se	the second se		A December 1	100
c) Implementing     in the event of potential GLOF, can you take pre-cautionary measures against i	-				the second se	
1) In the event of potential GLOF, can you take precautionary measures against i	-			<u> </u>	and the second	and the second se
	_			6	c, Implementing	C
<ul> <li>b. No .</li> <li>4) How aware are you of your roles and responsibilities?</li> <li>a. High .</li> <li>b. Medium .</li> <li>c. Low .</li> <li>5) What woold you do in a disaster situation?</li> </ul>	ter situatio	oys/girls in a disaster	ion?	saster situati	wase are you of your High Medium Low roold you do in a dis	<ul> <li>4) How awa</li> <li>a.</li> <li>b.</li> <li>c.</li> <li>5) What we</li> <li>6) In your of</li> </ul>
6) In your opinion, how far have the needs of men/women/boys/girls in a disast	ddmessed	ad Nor at all add	Partially ad	addressed		
addressed?	CONTRACTOR DESCRIPTION OF				a duy	
addressed?           Needs of:         Fully addressed         Partially addressed         Not at all a	1			-	50	
addcessed?           Needs of:         Fully addressed         Partially addressed         Nor at all a           a) Men         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	1			171	ant l	b) Womer
addressed?           Needs of:         Fully addressed         Partially addressed         Not at all a           a) Men         Image: Constraint of the second of t	1		1 0	- 11	1000	How?
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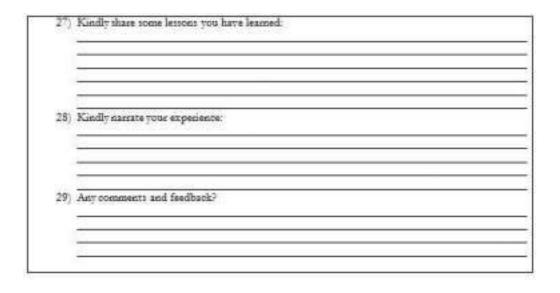
b. To some extent	
<ol> <li>No</li> <li>Do you think you will not experience G</li> </ol>	OF in minted
1 Yes	avor in vincer
b. No	
<ul> <li>I don't know II</li> <li>From your expensence, what was the mo</li> </ul>	ost effective measure to improve awareness/capacity
community member?	
Punakha and Wangdue only	
20) Are you aware of mitigation wor	k at Thorthomu lake?
a. Yes	
b. No Don't know	
i. If yes, how we	old you rate Thorthormi lake mitigation work?
a. A success b. Neither a ro	Coest nor failure
c. A failure	
21) How do you rate the coles being	played by Community Focal People with respect
to Community Early Warning Sy a. Very important	vtem (EWS)?
b. Somewhat important	1
e. Not important 🔲	
i. What roles do	they play?
22) Is these EWS installed in your or	unana.m2
2. Yes	#IIIIIIdaty*
b. No	
	aanual 🔲 or an automatic system 🛄? educe human and material losses in your valley in
the event of GLOF?	esoce noman and material torses in your valles in
2. Yes	
b. No	
24) Do you and your family live in vi	ulnerable community?
x. Yes	
b. No	ou seceive and setpond to warnings in time to
avoid homa	n losses?
1. Yet	
2. No	a. If no, why?
	<del>8</del>

Are you aware of a. Yes b. No	GLOF ha	zard zonati	on ²			
1	Hno, v	apas				
	_					
Rate the level of a	warenew,			1	es against the	following
How do awarenee	is and edu		ARENES		risk of a GL	OF relate to
the main objectiv GLOF project?	e of the re	ducing clim	uate change-ù	ndoced risks	and vulners	bilities from
Relevance		R		-	NR	
To what extent h	we the ou	tcomes and	objectives o	f the propra	ms been ach	ieved?
Effectiveness	HS	S	MS	MU	U	HU
and a children and a		Ď			Ď	
Wat it implement standards?	ed efficies	tily and in-l	ine with inte	mational, na	itional norm	and
Efficiency	HS	S	MS	MU	U	HU
Is it sustainable?	-		in and		7.00.00	
Sustainability		L	M	L	MU	U
			E	1	1	2
Are there indicati awareness on disa					ed the comm	vacaties"
Impact		S	M			N
Second Second	_	Č.		1		1
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the reducing clim	are change	-induced ma	es and vuln	ecabouties fr	OM GLOF p	royect/	
Relevance				1			
To what extent ha	ave the out	fore remote	objectives b	een achieve	d?		
Effectiveness	HS	S	MS	MU	U	HU	
Was it implement standards?	ed efficien	aly and in-li	ne with inte	mational, m	ational norms	and	
Efficiency	HS	s	MS	MU	U	HU	
Is it sustainable?	-	-		-			
A CONTRACTOR OF							
Sustainability		L	M	-	MU	U	
					1		
Ace there any visi	ble and ma	easoreable n	mpact create	sd/*	22	100	
Impact		s	N		]	N	
			E 1				
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phi sanàharang (2011) Sa (2012) of GJ: Masimumj Shaj fasar (2): Manimul (20)	elifeng (5); (AL): Mole Ngijilê (5) CA ties and ne tings cond	eds assessm ucted salats	DEVEL of undertained	OPMEN objective o	T us levels, and		
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## 7.4 ITENERARY

Date	Day	Place/Activity
11 March 2014	Tuesday	Travel from T/phu to W/Phodrang
12 March 2014	Wednesday	Meet focal persons and District Disaster Management Committee Members
13 March 2014	Thursday	Meet <i>Geog</i> Disaster Management Committee Members Survey Ritsi Rinchengang and Tshokhana community
14 March 2014	Friday	Survey the community of Kamichu
15 – 16 March 2014	Saturday & Sunday	Survey the community of Wolathang, Samdingkha, Jara, Khawa Jara and Tsekha
17 March 2014	Monday	Meet focal persons of Punakha and the DDMCM Survey the community in and around VTI Khuruthang
18 March 2014	Tuesday	Survey at Changyul, Old Punakha town, and Khuru town
19 March 2014	Wednesday	Meet the Bap Gup and continue survey in Khuru town
20 March 2014	Thursday	Travel to T/phu
21 March 2014	Friday	Travel to B/thang
22 March 2014	Saturday	Survey at Jalikhar and Gongkhar
23 March 2014	Sunday	Survey at Garithang and Chamkhar town
24 March 2014	Monday	Meet the focal persons and DDMCM
25 March 2014	Tuesday	Survey Upper Chokhor Communities