



Chapter 13

Monitoring Evaluation and Learning at NSET

Realizing the importance of systematic monitoring, evaluation and learning procedures and standards in all programs and activities, NSET has established a Monitoring and Evaluation Unit in the year 2014. The main aim of the NSET M&E Unit is to establish a common structure and standards that govern the application of effective and timely monitoring, evaluation and learning.

The unit is working towards offering integrated monitoring and evaluation solutions from project design through to implementation and closedown. M&E systems established will analyze performance and whether targets have been achieved, ensuring the five core standards of 'relevance', 'effectiveness', 'efficiency', 'impact' and 'sustainability'.

Purpose of M&E

M&E at NSET has emerged with the objectives of

Monitoring the progress

To know whether the intended results are being achieved as planned, what corrective action may be needed to ensure delivery of the intended results, and whether initiatives are making positive contributions or not.

Learning and Improvement

M&E will help to understand why, and the extent to which, intended results are achieved or not achieved, and to understand their impacts. It is an important process for change through the provision of useful feedback and a commitment to act on that feedback, thereby driving organizational learning.

Accountability

M&E plays a crucial role in accountability. M&E process will enhance the credibility of NSET in the eyes of clients, donors, partners and people. NSET is answerable to its partners, donors and people on whether its policies, programs and projects are having the intended results. NSET also needs to demonstrate that resources are used efficiently and effectively. The M&E process, together with the required documentation that accompanies it, holds NSET staff and its other partners responsible for their performance.

Evidence-Based Management

The results of M&E will be an important input to the decision-making process within NSET and will affect a range of management processes, including risk and performance management and decisions to change, expand or contract programs.



Photo 1 Photo Caption

The main areas of work for the Monitoring and Evaluation Unit are as follows

- Standard setting and implementation
- Preparation of program specific M&E plan , developing a framework of results and impacts indicators at the program level for monitoring results and impacts
- Baseline Surveys, Data Collection and Analysis
- Ensure quality of data collected/ generated by following the NSET Data Quality Assurance Guidelines of NSET
- Periodic Assessment for Evaluation
- Reporting on the status, quality and synthesis of evaluations and their findings
- Supporting the development of capacity for M&E through training, coaching and mentoring
- Establish a feedback loop by providing and receiving feedback to and from all stakeholders, concerned and follow-up
- Incorporation of Gender Equality and Social Inclusion (GESI) indicators throughout the development and implementation of M&E plan

Building Code Compliance Survey in the municipalities

In order to measure the change in the design and in the building construction practices and to measure the current level of building code compliance in the municipalities, Building Code Compliance Survey has been conducted in the municipalities where building code implementation is underway with support from NSET's BCIPN program.

This survey is intended to help policy-makers and practitioners in developing an effective plan to increase the rate of building code compliance. The survey was done following the checklist for Building code Compliance with a scoring system based on the three main constituents of earthquake resistant buildings i.e. configuration, ductility and strength of buildings.

Box: 01

Accomplishments So far

Preparation of Comprehensive M&E Plan of BCIPN Program, Baliyo Ghar Program and PEER Program

i) M&E Activities under BCIPN

- Baseline Survey on Earthquake Risk Perception
- Baseline Survey on the Status of the municipalities
- Baseline Survey on Building code compliance
- Midterm/Endline Survey on Status of the municipalities
- Midterm / Endline Survey on Building Code Compliance
- Retention survey with the trained Masons and Engineers
- Focus Group Discussions
- Regular Monitoring of Activities
- Development/Use of Web based Database system
- Development of Kobo Collect app for Building Compliance Survey
- Collection of Success Stories

ii) M&E Activities under Baliyo Ghar

- Baseline Survey on Earthquake Risk Perception
- Baseline Survey on the Status of VDCs
- GESI Situational Analysis (Baseline)
- Preparation of GESI Action Plan for monitoring
- Retention survey with the trained Masons and Engineers

The Process

An android application with the survey questionnaire has been developed in an open source platform called Kobo Tool Box. The data collected on the mobile device is then uploaded to the central server for further analysis. The survey is done at two levels- Study of Drawings submitted in the municipality for building permit process and the survey of same building constructed in the field.

A comparative study of buildings constructed in three fiscal years i.e. 2012, 2014 and 2016 for both drawings and field was carried out through this survey. The survey is carried out by trained engineers and sub-engineers so that the survey on even a relatively small sample is expected to be a good representation of the total population. The survey of 29 municipalities was conducted during 2016-2017.

The sample size is calculated with 10-15% margin of error and 95% confidence interval. The total population is the total no. of buildings that has been permitted by the municipality in the particular year. The no. of buildings to be surveyed in each ward is then calculated according to their construction rate per year in that particular ward. For the quality assurance of the data, a very strong monitoring system and post editing system was developed. Poor file management system in the municipalities was a constraint to the study resulting in a smaller sample size being accessible to the surveyor.

Key Findings

Assessment of the Drawings submitted

A total of 4097 building drawings submitted have been assessed in the three years period. 1333 drawings submitted in the year 2012, 1401 drawings submitted in 2014 and 1363 drawings submitted in the year 2016 were assessed.

Out of 4097 building drawings, 42% of the buildings were one storey, 36% two storey, 19% three storey and 4 % were more than 3 storey.

It was observed that in 2012, only 1% of the drawings submitted was found to have met the building code compliance while 17 percent of drawings were close to meeting the compliance and 81% of the drawings were found non-compliant to building code as shown in figure below.

- Focus Group Discussions
- Regular Monitoring of Activities
- Collection of Success Stories
- Development/Use of Web based Database system
- Development of NSET collect android app for RPS data collection
- Development of Kobo Collect app for Building Compliance Survey

iii) M&E Activities under PEER

Baseline Survey on the Status of the PEER Graduates

Baseline Survey on the Status of the PEER Partner Institutions

Development of various Guidelines and Reports

- Guideline to conduct the Risk Perception Survey
- Guideline to conduct Focus Group Discussion
- Data Quality Assurance Guideline
- Guideline/Template for Collecting Success Stories
- Report on Risk Perception Survey (Baseline- BCIPN)
- Report on Risk Perception Survey (Baseline- Baliyo GHar)
- Report on Retention Survey (BCIPN)
- Development of GESI Action Plan Framework (Baliyo Ghar)
- Quarterly Reports/Annual Reports

Surveyed Drawings/Buildings Information



In 2014, 56 % of drawings were found to have met the building code compliance while 32 % were close to compliance and only 12 percent of drawings were found to be non-compliant to the building code.

A significant change has been observed in 2016 as 82% of the drawings were found to have meet the building code compliance while 11% were close to compliance and only 7% of the drawings submitted were found to be non-compliant.

Assessment of Buildings in the Field

From among the 4097 building drawings assessed, a total of 2813 buildings were assessed in the field. 823 buildings built in the year 2012, 957 built in 2014 and 1033 buildings being built in 2016 were assessed.

It was observed that, of the buildings constructed in the year 2012, 21% of the building were built with full compliance to the national building code, 15 % of building were close to compliance while 64% were non-compliant.

Gradually, the trend has increased in 2014, where 49 % of the buildings were found to have met compliance, 40 % building were close to compliance and 11 % were non-compliant to the national building code. A remarkable achievement was observed in the year 2016 as 76 % of the buildings met building code compliance, 14 percent building were close compliance and only 11 percent were found non-compliant to building code.

Hence the survey showed that there has been significant improvement in the construction practices over the years since the implementation of BCIPN program in the program municipalities. The change (Building Code Compliance) on both the design and in the building construction practices is very visible in the municipalities.

Understanding Risk Perception of People

A Baseline Study Conducted by NSET in the BCIPN program Municipalities of Nepal

Risk Perception Survey was conducted in 23 municipalities from 2013- 2015. A total of 39,874 Samples were administered in 23 municipalities. A total of 415 enumerators (local social mobilizers, community volunteers) were mobilized to do the survey.

What is Risk Perception?

Risk perception is the subjective judgment that people make about the characteristics and severity of a risk

Attributes of Risk Perception

K: What the respondents know about it (Knowledge)

A: How the respondents feel about it (Attitude)

P: What the respondents do about it (Practice)

Hypothesis of the program

Enhancing the risk perception of the people will create demand for earthquake safety and influence the building code compliance.

Objectives

- I) To measure the residents' -
 - current perception of risk to earthquakes,
 - their level of preparedness and
 - the earthquake risk reduction activities they are implementing
- II) To use as a baseline for evaluation of changes in perception
- III) To derive recommendations for improving the effectiveness of the program.

Population Characteristics

Among the survey respondents, female respondents (55%) were higher in number than male participants (45%). About 23% have completed Secondary education and 17% had studied up to Higher Secondary level. 33.5% were housewives and 20% of the respondents were involved in business. Furthermore, 79% of the respondents mentioned that they have experienced earthquake at least once, while only 10% have participated in earthquake awareness programs.

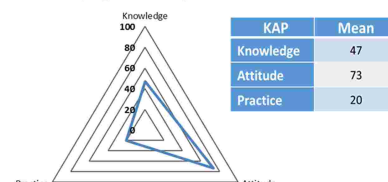
KAP Assessment

A structured questionnaire with 38 questions was developed; 12 questions assessed the demographic characteristics of the participants; 6 questions assessed the existing Knowledge, 5 questions Attitude and 5 questions assessed if they have taken any precautionary measures as Practice. Each question was given certain weightage depending upon their importance. The sum of scores was used as the KAP score.

KAP Score Assessment of 23 municipalities showed that the knowledge level of the respondents was fairly good (47) in addition their attitude towards earthquake risk reduction is also very positive (73) but still there seems

Knowledge, Attitude and Practice Score (Mean Score)

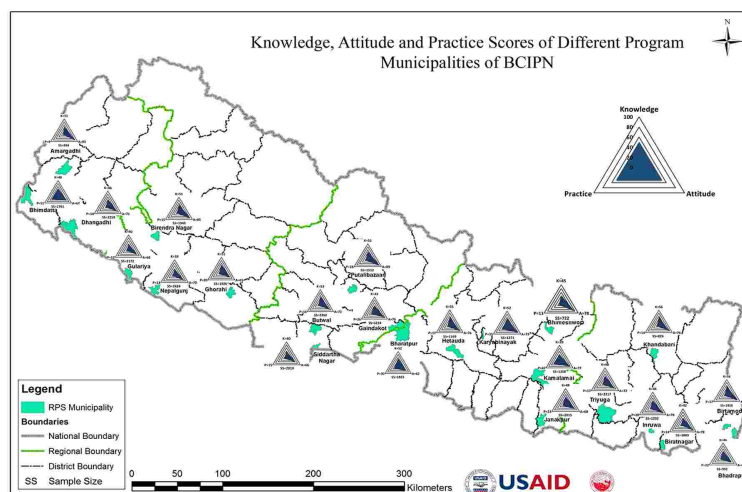
Knowledge Attitude and Practice Score of the 23 BCIPN program municipalities



KAP score assessment showed that the knowledge level of the residents is fairly good (47) and their attitude towards earthquake risk reduction is also very positive (73) but still there seems to be a gap between transforming these knowledge and attitude and practice (20).



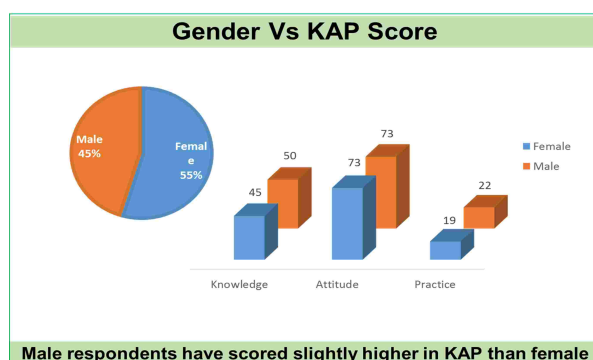
A local community volunteer conducting the survey, Putalibazar



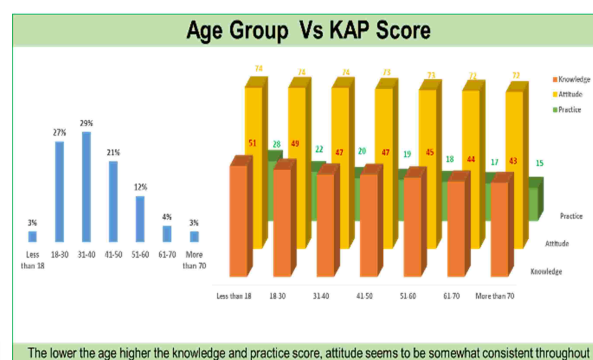
KAP scores of different municipalities

Factors Affecting Knowledge Attitude and Practice

Various factors such as gender, age, occupation, participation in awareness programs and trainings, prior experience of earthquake, presence of disaster response groups in the community were found to influence the behavior of the residents of the municipalities.

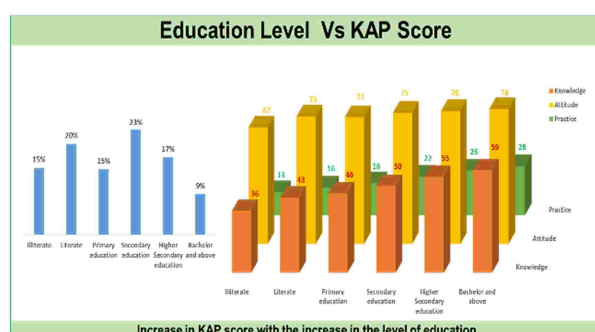


Gender Vs. KAP Score

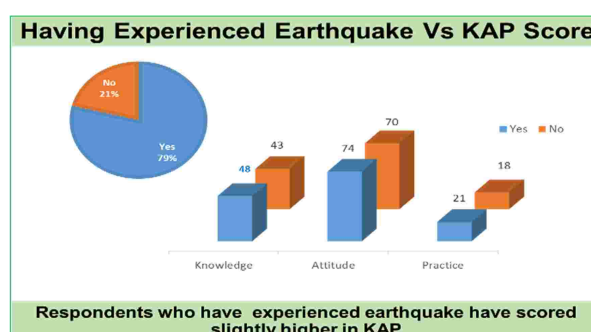


Age Group Vs. KAP Score

In 23 municipalities Knowledge Attitude and Practice scores of male respondents were found to be higher than those of female respondents. Significant relation between age group and Knowledge and Practice scores was observed. The lower the age the higher the Knowledge and Practice score, and the higher the age the lower the Knowledge and Practice score.

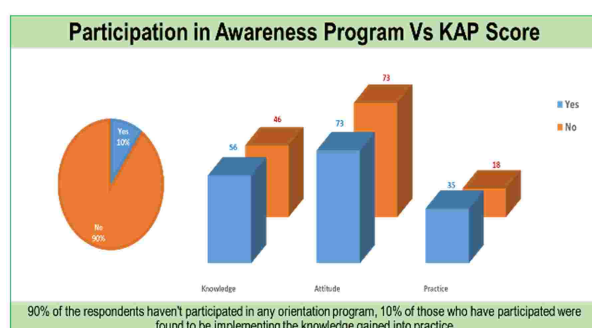


Level of education Vs. KAP Score

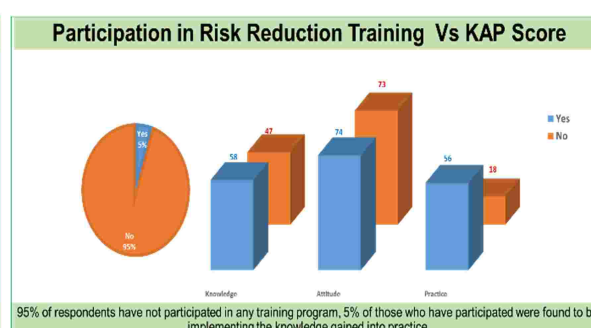


Having Experienced earthquake Vs. KAP Score

It was observed that higher the level of education higher is the Practice score. Most of the respondents have experienced earthquake and when compared, those who have experienced earthquake have higher score on Knowledge, Attitude and Practice than those who haven't experienced earthquake.



Participation in awareness programs Vs. KAP Score



Participation in Training Vs. KAP Score

The mean Knowledge and Practice scores of the respondents who have participated in awareness and training programs were higher than the scores respondents who hadn't participated in any programs.

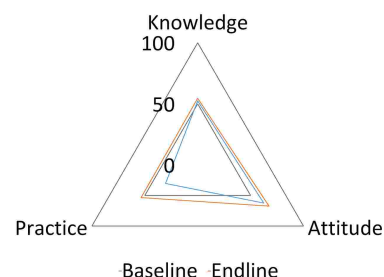
Overall Findings

- Gender, age, occupation, participation in awareness programs and trainings, prior experience of earthquake influence the behavior of the residents of the municipalities.
- Increasing age, lower education level, previous experience of earthquake, non-participation in awareness/training program were identified as the risk factors for low knowledge of earthquake risk.
- Those who participated in awareness and training programs were found to be implementing the knowledge gained into practice.
- Knowledge and Practice scores of male respondents was found to be higher than the scores of female respondents.
- The respondents who work in private organizations, government offices, and students have the highest KAP scores whereas laborers and housewives have the lowest.

Change in Risk Perception after BCIPN intervention

With an objective to measure the change in the perception of the people and professionals on earthquake risk and earthquake-resistant construction technology after the implementation of BCIPN program, endline surveys on risk perception was carried out in the BCIPN program municipalities. The level of risk perception together with the level of building code compliance was measured in the year 2017. Preliminary results show that the level of building code compliance increased significantly as the level of risk perception enhanced.

KAP Score of Bharatpur Municipality
Baseline 2013 and Endline 2016



Change in the KAP Score of Bharatpur municipality in 2013 and 2016



Presentation by Nirajan Budhathoki in Amargadhi Municipality, NSET



Questionnaire reviewing in Ghorahi Municipality

Retention Survey of Masons: Retention of Work and Knowledge

As a part capacity enhancement of the construction stakeholders a number of training programs were conducted under BCIPN program. In this regard a number of Mason Training program were conducted by the program in the program municipalities.

A total of 4600 masons and contractors were trained on earthquake resistant building construction. In order to assess whether the masons trained by BCIPN have continued their profession as mason and the level of knowledge retained by them after some years of the training, Retention Survey was conducted.

The survey was conducted among 150 masons trained by the program. Also the survey was expected to provide an insight to the challenges and achievements of the masons after the training.

Methodology

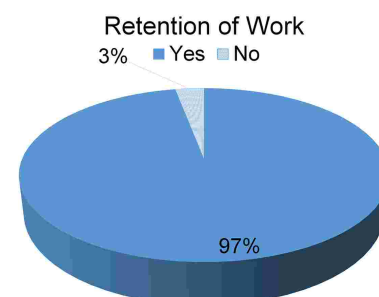
The survey was conducted among 150 masons that included 130 males and 20 females trained by the program in different time period. The sample size was calculated so that the findings of the survey could be generalized with a confidence level of 95% and a margin of error of 8%. A set of questionnaire was developed and all the respondents were approached via telephone. Scores were assigned to correct answers from the respondents.

Key Findings

Retention of Work

A major focus of the retention survey was to measure what percentage of the masons were still continuing their profession as mason.

It was observed that a majority of the masons were found continuing their profession as mason. Only 3% masons had changed their profession.

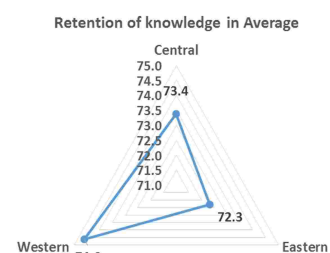


Retention of Knowledge

Retention of knowledge gained by masons during the training is a vital component for continuation of safer construction practices in the program areas. The survey measured what percentage of knowledge do the masons still retain/have and the result is presented below.

The current scores of all the respondents showed that the average knowledge retention was 72%. And nearly equal level of knowledge was found to be retained by the masons across the program regions. The average retention of knowledge was calculated as 73.4% for Central Region, 74.6% for Western Region and 72.3% for Eastern Region.

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Challenges and Achievements as perceived by Masons

As the masons say: house owners are still reluctant to pay the extra cost of constructing an earthquake resistant building and getting design approval from the municipalities. This issue has created barriers to the implementation of National Building Code. Although the masons are aware of the earthquake resistant construction practices, they are facing difficulties in convincing the house owners.

The absence of the provision of Standard of Wages for masons have also discouraged the trained masons. The masons want the municipality to allow only the trained ones to practice construction and to have monitoring over their work.

The telephonic conversations found positive attitude of the masons towards the training they received. Masons are confident about implementing their knowledge in practice and have earned higher respect in their community along with the increase in wages to some extent, in some cases. They are looking for further training that can help them build their capacity even more in the future.



Status of Building Code Implementation in Municipalities:

A Study to Understand the Level of Efforts for Enforcing Building Code

This is a study conducted in the municipalities to identify the status of level of efforts in the municipality towards effective building permit systems and enforcement of building code.

The main objectives of the study are:

- To know the level of capacity of the municipalities for building code implementation
- To measure the level of potential sustainability of sound building permit process and building code implementation

Based on the previous experiences and interactions with the municipalities, three major components are identified for the assessment of the municipalities in terms of Building Code Implementation. Three major components are:

1. Institutional Mechanism of Building Permit Process and Building Code Enforcement
2. Technical Capacities in municipality area and within Municipal Office
3. Budget allocation for BCI by the municipal office

Methodology

The following are the main factors and criteria used for the assessment of BCI Status.

The municipalities were assessed in two phases: at the initial phase of the implementation of BCIPN program (2013) and then towards the end of the BCIPN program (2016) to measure the change in the municipalities over the years.

i) Institutional System on Building Permit Process

This component measures the institutional mechanism, system and capacity of the municipality towards implementing building code, and the system for overall disaster risk management. There are 9 indicators in this category (Presence of Earthquake damage scenario, Advisory committee, separate EQ unit/staff, need structural drawing, field inspection system, BP application content, certification system, provision for retrofitting, understanding of other municipal staff) . And each question is given score based on their yes/no answers.

ii) Technical Capacities Human Resources

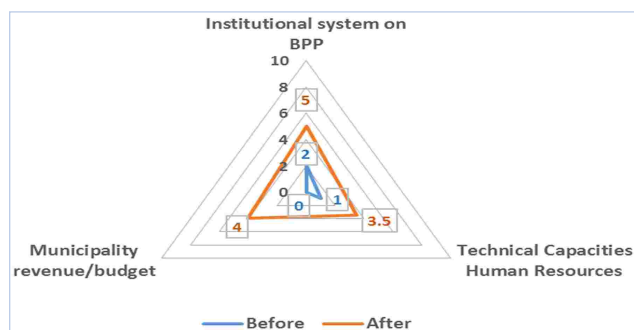
This component measures the availability of technical capacities within the municipality. Here the people who are directly involved the construction of house (engineers, masons and the house owners) are assessed. The proportion of human resources trained/oriented with respect to numbers of new building constructed per year is measured and the scores are assigned accordingly.

iii) Municipality Revenue/ Budget

This component measures the proportion of budget allocated by the municipality for building code implementation. The proportion for the amount of revenue generated from building permits in the municipality and budget allocated for BCI was measured.

The total score obtained under each component is then represented in the radar graph.

Key findings



The BCIPN program municipalities were assessed in two phases: at the initial phase of the implementation of BCIPN program (2013) and then towards the end of the BCIPN program (2016) to measure the change in the municipalities over the years. The preliminary findings in some of the municipalities shows that there has been significant improvement in the institutional system and process of the municipalities towards building code implementation. All the three major components for the assessment of the municipalities such as: Institutional system on building permit process, Technical capacities/Human resources and Municipality Revenue/Budget has been improved over the years as represented in the figure (Figure of one of the municipality surveyed).

Earthquake risk perception survey conducted in 33VDCs and 3 municipalities under the Baliyo Ghar Program

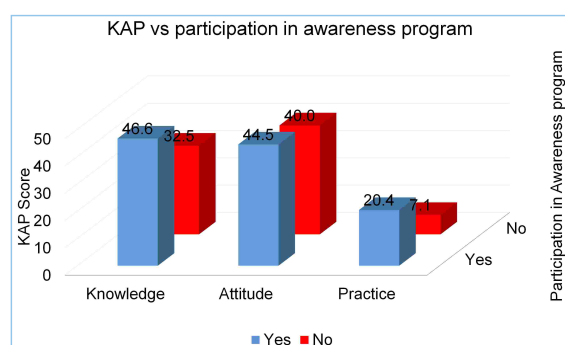
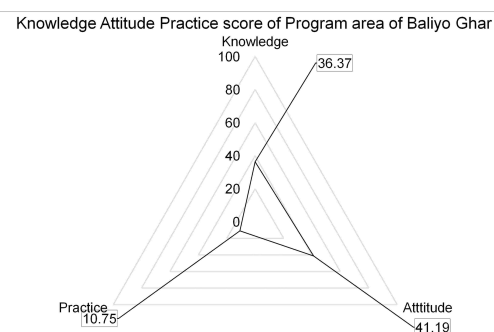
Earthquake risk perception of the population is defined in terms of Knowledge, Attitude and Practice (KAP) on earthquake risk and reduction measures. To measure the understanding/ perception of the earthquake risk and safer construction practices, a baseline study was conducted in 33 different VDC and 3 municipalities of Nepal, under the Baliyo Ghar program. The survey was conducted among 9856 respondents in the different wards of the program VDC and municipalities. The study used simple random sampling based on the Stratified Systematic Area Sampling procedure. The results can be extrapolated to the whole population with a confidence level of 95% and an accuracy of 5%. KAP analysis was conducted and questions were grouped accordingly and assigned certain weighting and scores. A sample of 3.6-7% of total household of each of the municipalities and 15-48% of total household of each VDC was selected for conducting the Baseline Risk Perception Survey.



Key Findings of Survey

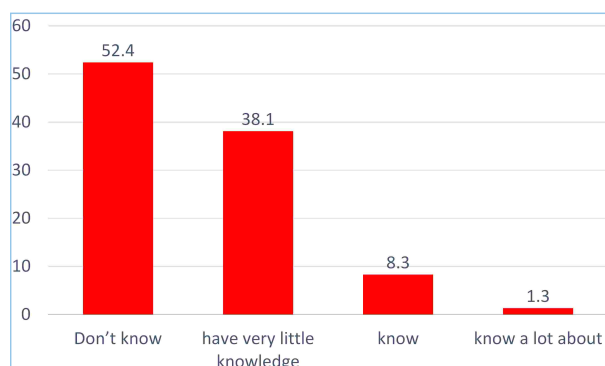
The KAP score assessment of all the respondents clearly shows that the attitude level of the respondents was fairly good (scored 41 of 100). In addition, their knowledge was moderate (scored 36 out of 100). Their practice score was poor (11 of 100) compared to the attitude and knowledge scores. However, this showed that there seems to be a large gap between transferring the knowledge and attitude into real practice.

Respondents who had participated in the awareness program (2692 respondents) had higher KAP scores than those who had not (7146 respondents). Notably, the practice score is more than three times as high amongst respondents who had participated in the awareness program.

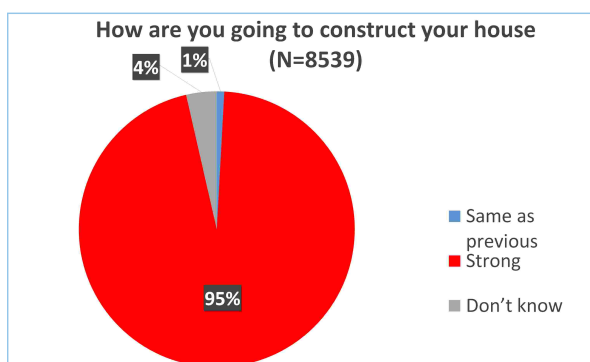


Regarding the safer reconstruction, the survey results indicate that the majority of participants in the program have very little knowledge on earthquake-safe construction. When asked, “Do you have any idea on safe construction technique?” half of the total respondents said that they did not know about safe construction techniques.

The respondents when asked, “If you are building a house, how are you going to make it?” Majority, 95% of the respondents replied that they wanted to make a strong house. Only 4% of respondents did not think about it, and 1% of respondents would make same as their previous house.



Knowledge of earthquake safe construction amongst respondents



How are you going to construct your house

Overall Findings

- Male respondents were found to have higher KAP scores than female respondents
- The mean knowledge score of respondents who had experienced earthquakes was found to be higher than for those who had not experienced earthquakes
- It was found that there was a significant association between income of respondents and their KAP scores. Comparatively, economically sound respondents had higher KAP scores compared to respondents with lower monthly incomes
- Increasing Age, low monthly income, minority ethnicity (such as Dalit and others), lower education level, no participation in the awareness program not listening or watching awareness program and geographically remote VDC were identified as the risk factors for scoring low KAP scores.



Full page photo & caption