Analysis on Effectiveness of Communication Mechanism and Activities: A Study on Post-Earthquake Reconstruction in Nepal

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Abstract

In the wake of any disaster, the communication strategies adopted have a significant role in attaining the objective of Build Back Better, especially to inform the affected communities, raise the level of awareness and propagate right information at the right time. Communication strategies direct the usage of various tools for effective communication. They pave the way to eliminate the information gaps from top to bottom and vice versa. But all communication strategies may not work effectively. This study evaluates the effectiveness of communication mechanism developed and activities implemented during reconstruction campaign and peels the effectiveness of communication strategy grounded by NRA. The study roams around what media tools were used, and how they have served the quake affected people to achieve build back better objectives.

The study used both qualitative and quantitative methodological approaches. Three target groups; beneficiary, implementation and policy levels were identified and were asked different set of questions. Primary data was collected either through telephone interview or internet survey. The convenience random sampling method was used to collect the data. Structured telephone interview was done among 274 house-owners of 4 quake-hard-hit districts namely; Kathmandu, Dhading, Nuwakot and Dolakha. The respondents were randomly selected from the database of reconstruction beneficiaries. Purposive sampling method was used to collect data from implementation and policy level respondents. Since the second and third target group had access to internet, web based survey was done.

Results revealed that effective communication strategy to disseminate clear information to beneficiaries in timely manner has a direct impact on reconstruction, particularly in the time taken by beneficiaries to complete construction. Merely strategy and paper documents do not support the attainment of the vision articulated in the reconstruction policy. Rather, understanding the ground demands and needs of diverse groups, at implementation as well as beneficiary level must be taken into consideration to propagate right information at right time. Usage of multiple media tools for heterogeneous communities is must for effective communication to increase understanding and outreach. In the country like Nepal with geographical difficulties and heterogeneous communities there should be concrete plan in regard to the usage of communication tools and mechanisms to be developed. Ample resources, especially for person-person information sharing through awareness activities, trainings and door to door campaigns followed by comprehensive quality assurance, monitoring and feedback is vital for the attainment of the objectives set forth by the communication strategy.

Keywords: Communication, Post-disaster recovery, 2015 Gorkha earthquake

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1. Background

The 21st century is widely referred to as age of communication. With the advent of new technologies and digital communication channels and advancement and transformation of traditional media, the dependency of people on mass media for information has been significantly increased *(Iqbal, Ali, Khurseed, & Saleem, 2014)*. Although there are divergent views among the communication experts regarding the influence of media in the society and complexity to measure it, nonetheless role of mass media in disseminating information, educating general people triggering behavioral change cannot be ruled out. Communication technology has been recognized as integral to disaster management for a long time *(Iqbal, Ali, Khurseed, & Saleem, 2014)*.

In Disaster Risk Management (DRM) too, role of mass media has been widely appreciated. Especially during and immediately after a disaster, various communication medium such as radio, television, phone communication, print and even social media are primary sources of information and messages for victims and general people. The well-established fact is that mass media has tremendously contributed during various past disaster events especially in the disaster response related activities *(Iqbal, Ali, Khurseed, & Saleem, 2014)*. However, its role is not limited to this only.

The role of effective communication is paramount in all cycles of disaster management, preparedness, response, relief and recovery *(Yandra, Kholil, & Zulkarnain, 2017)*). It helps communicate about important messages or information about preparedness, impact of disaster, rescue and relief efforts, vital reconstruction messages and more among others. Reconstruction of destroyed and damaged infrastructures is one of the key phases of disaster management cycle *(Vasterman, Yzermans, & Dirkzwager, 2005)* Post-disaster reconstruction does not merely consist of rebuilding flattened houses, it also strives towards increasing local capacity and knowledge on disaster risk reduction measures *(Vasterman, Yzermans, & Dirkzwager, 2005)*. Therefore, the reconstruction campaign after the disaster turns effective if the communication strategies and activities are appropriately promulgated and implemented effectively. Reliable and accessible communication and information systems also are key to a community's resilience *(National Disaster Mangement Authority, February 2012)*. In order to make it sustainable, information regarding various aspects of post-disaster reconstruction need to be communicated to the various reconstruction stakeholders. The task of rebuilding homes and communities is complex, challenging and apprehensive with potential pitfalls. In post-disaster situations the status quo shifts constantly, a challenge that makes strategic communication a crucial element in the response and reconstruction environment. Effective communication in a reconstruction is not about what governments and projects "say," but what beneficiaries "hear." *(World Bank, 2010)*

2. Introduction

The 2015 Gorkha earthquake was the largest disaster recorded in the nation in terms of losses; over 9000 lives and USD 7bn in economic losses was incurred *(National Planning Commission, 2015)*. Nepal had not faced a natural shock of comparable magnitude for over 80 years. To repair and reconstruct more than 825,000 houses damaged by the Gorkha Earthquake, the Government of Nepal led a process of reconstruction providing a newly created National

Reconstruction Authority (NRA) with the mandate to plan and implement reconstruction activities *(National Reconstruction Authority, 2016)*. And to achieve the objectives of NRA through communication means, NRA came up with the communication strategy as well.

Strategy is commonly defined as a comprehensive plan to meet particular set of target *(Yandra, Kholil, & Zulkarnain, 2017)*. A communication strategy refers to a detail plan of action to achieve the goal of communication activities. It is the activities of planning, organizing, actuating, accounting and controlling as well as the elements in a management *(Yandra, Kholil, & Zulkarnain, 2017)*. In other words, a communication strategy is deemed to be successful only when it becomes effective. The effective communication means target group gets the information and messages as per expectation which was conveyed to them and it could able to change their mindset, attitudes, behavior and views on particular issue *(Yandra, Kholil, & Zulkarnain, 2017)*. For effective or strategic communication, it is needed to identify the FOUR WH's, namely; **who** is the audience, **what** is the message, **how** to disseminate, and **what** is the medium *(Yandra, Kholil, & Zulkarnain, 2017)*.

This study evaluates the effectiveness of communication strategy grounded by NRA and sub strategies developed by reconstruction projects. The study roams around what communication mechanism was adopted to reach to the beneficiary level with reconstruction information, what media tools were used and how they have served the quake affected people to achieve build back better objectives. The study examines the effectiveness of communication strategies adopted and communication activities carried out in the reconstruction of Nepal.

3. Methodology and Procedure

In order to attain the objectives of the study, both quantitative and qualitative research was held. The survey was administered at three target groups; (1) Beneficiary Perception Survey targeted towards earthquake reconstruction beneficiaries who had or had not completed construction, (2) Implementation level survey, targeted towards major actors at national, district and local levels provided with authority and responsibility to disseminate information to beneficiaries and (3) Policy Level, targeted to national level decision makers who supported NRA in designing and formulating different communication policies and tools. Primary data were collected either through telephone interview or internet survey. The convenience random sampling method was used to collect the data. For the first target group, structured telephone interview was done among 274 house-owners of four most affected districts namely; Kathmandu, Dhading, Nuwakot and Dolakha. The respondents were randomly selected from the database of reconstruction beneficiaries. For the second group, purposive sampling method was used to collect data from respondents. Respondents were identified from three categories, a) Government Officials (NRA DLPIU officials and field engineers), b) Partner Organizations (I/NGO officials and field staff) working in reconstruction and c) Local government representatives (elected and government officials at local levels). These respondents had direct involvement in implementation level of reconstruction i.e. providing information to earthquake beneficiaries. For the purpose of uniformity, 30 respondents form each category were identified and randomly selected. Since the

target group had access to internet, web based survey was done. Among the 90 selected respondents who had been contacted for the survey, 70 of them filled up the survey forms.

Similarly, for policy level survey, reconstruction actors (NRA officials, Partner Organizations, National level media) were purposively selected based on their direct involvement in reconstruction process, especially in the promulgation and dissemination of communication and information policies and materials. 20 professionals in this target group were selected for the survey where six of them responded. Different set of questions for three levels of respondents with multiple choice questionnaire were developed for the structured interview and internet survey.

Some of the questions asked to beneficiaries are as follows:

- Have you completed construction of your earthquake damaged house? If yes, how much time did it take? If not, why haven't you constructed yet?
- To what extent do you agree that you received information regarding reconstruction on time?
- What mass media platforms did you use for getting information on reconstruction? Apart from mass media, what other source of information did you have?
- From where/whom did you generally receive information regarding tranche approval and disbursement? From where did you generally receive information regarding earthquake resistant construction?
- If you had a technical challenge during construction, whom did you generally ask and receive required information? From where did you generally receive information regarding (change in) reconstruction policies and programs?
- Where did you place your queries, questions and issues of reconstruction? Do you know / did you use Toll Free Number provided by the NRA to report issues or get information?
- To what extent do you agree that you have received and understood all information regarding reconstruction? If disagree, what information was mostly not very clearly received?

Additionally, some typical questions asked to the implementation level and policy level were as follows:

- What do you know about the "Communication and Outreach Strategy 2017-2020" prepared by the NRA? If read/heard, to what extent do you agree that the Communication Strategy was promulgated and disseminated in appropriate time? To what extent do you agree that the "Communication and Outreach Strategy 2017-2020" has been effectively followed during reconstruction?
- To what extent do you agree that information regarding reconstruction policies and decisions has reached the affected beneficiaries in time? To what extent do you agree that the information disseminated and received by the beneficiaries were qualitative and credible?

- In your opinion, what were the 3 (three) major challenges in disseminating quality and credible information to beneficiaries in time? In your opinion, what were the 3 major challenges/issues in adequate information sharing among stakeholders?
- To what extent do you agree that communication and outreach was well maintained among the different stakeholders (Government/POs/Local Authority/Media/Beneficiaries) in reconstruction?
- In your opinion, what strategy should be changed in future disaster reconstruction programs to make communication more effective?

4. Communication strategies in post-earthquake reconstruction of Nepal

At the post-disaster reconstruction, the communication strategies adopted have a significant role in attaining the objective of Build Back Better, especially to inform the affected communities, raise the level of awareness and propagate right information at the right time. As social, economic and political contexts affect communications, improper and inadequate understanding of these leads to failure in communication. Communication strategies direct the usage of various tools for effective communication. They pave the way to eliminate the information gaps from top to bottom and vice versa. But all communication strategies may not work effectively.

4.1. Synopsis of "Communication and Outreach Strategy-2017"

Focusing on the massive need of reconstruction and rehabilitation, the Legislature-Parliament enacted Act No. 11 of 2015 (2072), "An Act Made to Provide for Reconstruction of the Earthquake Affected Structures". The Reconstruction Act provisioned for the creation of the National Reconstruction Authority (NRA) with defined functions, duties and powers. As directed by Act, the National Reconstruction Authority (NRA) was established on 25th December 2015 with a mandate to plan and coordinate implementation of the GoN led reconstruction and rehabilitation program. The vision for reconstruction of the NRA is the 'establishment of well-planned, resilient settlements and a prosperous society.'

To achieve the objectives, the NRA viewed the need of appropriate, timely and effective communication interventions as a key component of the entire reconstruction phase. A Reconstruction Communication Working Group was formed in light of communication needs. The group included government agencies, as well as development partners and implementing partners. A Communication Strategy Sub-group, made up of reconstruction as well as communication experts, was formed to develop the Communication Strategy directly corresponding to the vision and objectives of the NRA and the 'Build Back Better and Safer' spirit as stipulated in Post Disaster Need Assessment (PDNA).

The Communication and Outreach Strategy (2017-2020) of NRA was developed and made active to support the attainment of the vision of the NRA that is articulated in the Reconstruction Policy. The document has set the strategic directions for the National Reconstruction Authority's internal and external communications in order to accurately reflect the main priorities of NRA

work and support NRA's key function as a reliable and timely information provider. It also guides the NRA's collaborative partners' communication planning process. The main purpose of this Communication Strategy is to be a foundational building block that provides a necessary and organized framework to guide and inform the development of a more detailed communication plan.

Table 1. Strategic goals, objectives and target groups of the Communication and Outreach Strategy, 2017-2020

Goals	Specific Objectives and Target Groups
1. Inform earthquake-affected communities with appropriate, timely, relevant information about the reconstruction process and how households and their communities can gain access to government/development partners.	**Objective 1:** Provide information so that affected households understand the financial process of reconstruction • Homeowners, affected households and families • Government agencies supporting/directly in charge of the recovery efforts • Development partners, INGOs and donor community supporting recovery efforts • Stakeholders including private sector, NGOs, Guthis and local community groups
2. Households have appropriate, timely, and relevant information to make decisions about rebuilding approaches	**Objective 2:** Provide information so that affected households understand the technical process of safer reconstruction • Homeowners, affected households and families • Masons and engineers • Development partners, INGOs and donor community supporting recovery efforts • Stakeholders including private sector, NGOs, Guthis and local community groups
3. Households and their communities receive appropriate, timely and relevant information to rebuild better/safer.	**Objective 3:** Create an understanding that reconstruction is a citizen and community driven process. • Homeowners, affected households and families • NGOs, guthis and local community and youth groups • Political Parties and locally elected representatives
4. Intra-government communications on reconstruction run smoothly between agencies, and from central to district to Gaunpalikas /Municipality level and vice versa.	**Objective 4:** Develop resilient society and sustainable livelihood • Homeowners, affected households and families • Domestic and International Media • Development partners, INGOs and donor community and foreign governments • Political parties and locally elected representatives • NGOs and Community Organizations
5. Ensure NRA maintains solid public relations and positive networks in media and among other public stakeholders throughout the reconstruction process.	**Objective 5:** Build trust in the National Reconstruction Authority • All actors/stakeholder directly or indirectly involved in reconstruction and resilient recovery.

5. Results

5.1.Distribution of respondents

In the beneficiary level respondents, altogether 274 house-owners responded the telephone survey. Among them 255 were the house-owners who have completed rebuilding their homes. 16 house owners said, their house is still under construction and 3 of them have not started reconstructing their flattened house yet. Among the 274 respondents, the number of illiterate was 48 and 226 of them were literate either with informal education, primary education or with secondary or university level of education.

Likewise, a total of 70 participants responded the implementation level survey. Among them, 27 (39%) were local government representatives, 25 (36%) were from partner organization and 18 (26%) were government officials from NRA-DLPIUs. 6 policy level professional respondents filled up the internet survey designed for them.

Table 2. Distribution of beneficiary level survey respondents

District	Construction Status			Level of Education					Total
	Complete	Under Const.	Not Started	Illiterate	Literate	Primary	Secondary	University	
Dhading	71	3	1	19	11	21	22	2	75
Dolakha	114	2	2	15	51	19	28	5	118
Kathmandu	21	9		3	7	5	13	2	30
Nuwakot	49	2		11	12	17	11		51
Total	255	16	3	48	81	62	74	9	274

5.2. Sources of information

The bar chart in Fig. 1 shows the distribution of the mass medium that beneficiaries are using to get the information regarding overall reconstruction. Beneficiaries chose multiple sources as evident in the bar chart in figure. Among mass media sources (shown in blue), majority of the participants (70%) mentioned that they are using local radios as the source of information. Similarly, TV programs (38%) have more coverage than national radio programs (22%). In the due course of reconstruction, basically to propagate the reconstruction message and raise awareness among the earthquake affected population, IEC materials and social media has have the significant role as well. Among the 274 respondents, 16% stated to have used IEC materials and social media as means of communication to get informed. Though this is the age of widespread use of social media, the participants are relying on the information of IEC materials more than the social media (12%). Very few respondents, however, relied on newspapers (5%) and phone inquiries (9%) for receiving information. Overall, 6% of beneficiaries did not use any forms of mass media to receive information on reconstruction.

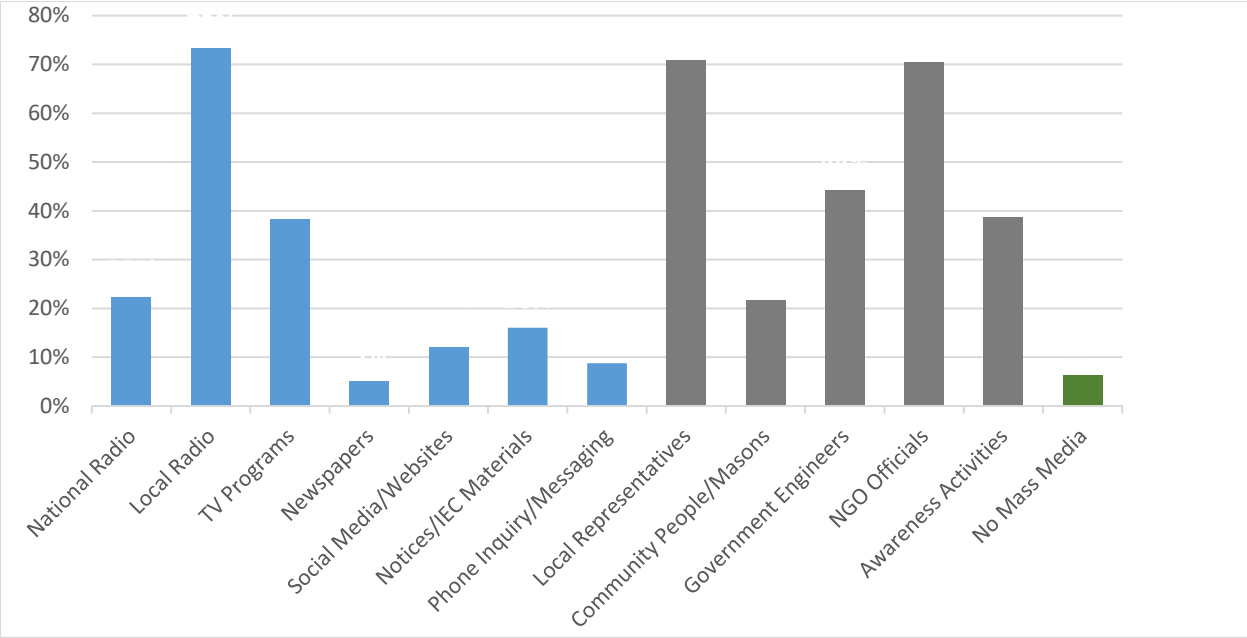

Fig 1. Distribution of frequencies of different sources of information for beneficiaries.

Apart from mass media, respondents had other sources of information as well, such as local representatives, NGO officials, government engineers, awareness and training activities and social leaders and mobilizers. 71% of the respondents said that they have received the information regarding reconstruction through local representatives. Almost same proportion of respondents have received information from the NGO officials or representatives whereas 44% of them indicated that they have received information from government engineers, those who were deployed to provide assistance to quake affected communities. Trainings and orientations were also the medium to propagate message of reconstruction. 39% of participants said that they have received information through training programs and orientations organized in their community. 22% of the respondents also received information through community people, including masons.

For the implementation level too, respondents were asked to list out their major sources of information. Fig. 2 shows that highest number of government officials (89%) and partner organizations (88%) received information from social media and official websites, while local government representatives relied more on training/orientation events (89%) and local radio (72%) for information. Similarly, government officials used other sources sparingly while partner organizations used other sources as well, primarily training/orientations, television programs and newspapers/portals.

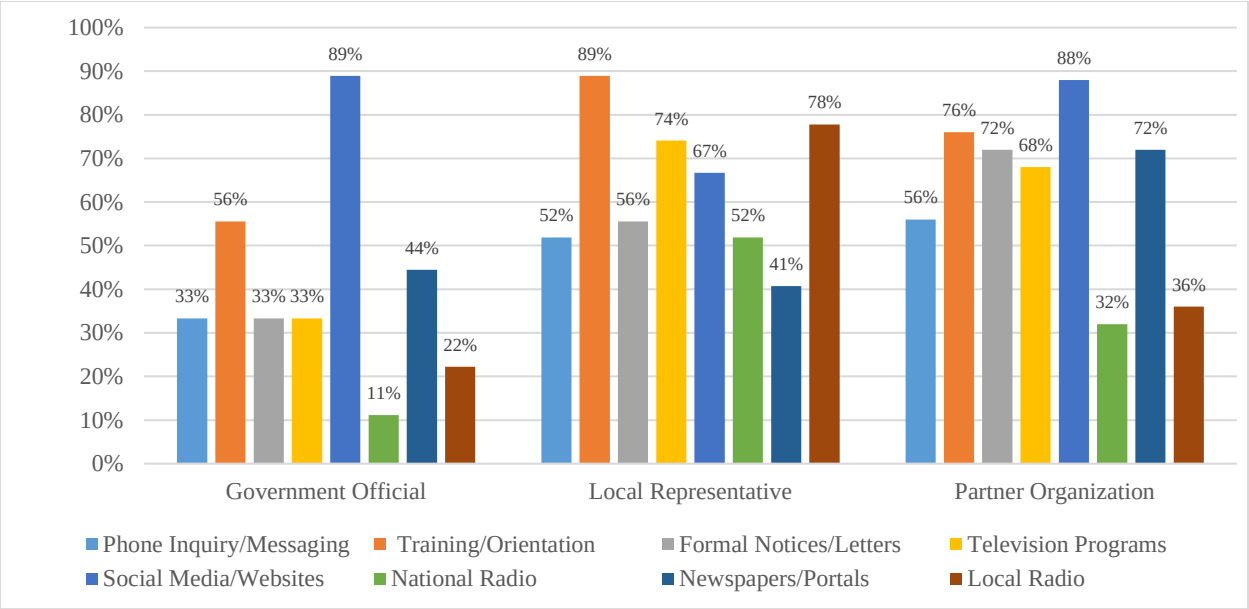

Fig 2. Distribution of use of sources of information by implementation level respondents

The bar chart in **Fig. 3** illustrates the distribution of means of communication as per the level of education of beneficiary level participants. It can be seen that medium of communication is vastly different among different beneficiary groups, especially based on education. While 73%% illiterate and 86% semi-literate respondents used local radios, the proportion decreased significantly among secondary (69%) and university level (22%) respondents.

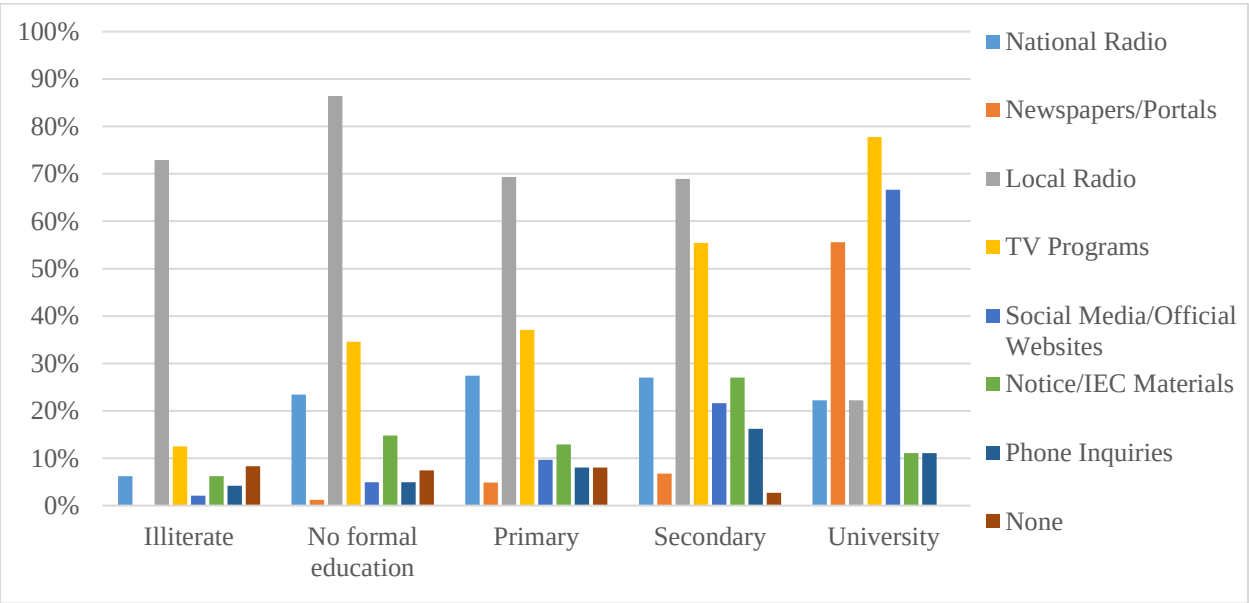

Fig 3. Distribution of means of communication among different level of education of beneficiaries

Respondents with higher level of education chose to follow TV programs and social media/websites much more than lower education level respondents. 78% of the participants with university level of education use newspapers as source of information, very high compared to

lower education levels. In all cases, very few of the participants use the phone inquiries or messaging to be informed on the issues of reconstruction. It can also be seen that respondents with higher level of education received information from multiple sources, as opposed to lower education level respondents.

5.3.Type of information vs sources generally used by beneficiaries

The chart in Fig. 4 shows from where beneficiaries received different types of information on reconstruction. As evident in actual field scenario, respondents relied more on NGO officials (75%) and government officials (60%) for earthquake resistant construction techniques, while for information on reconstruction policies and tranche disbursement, local representatives (~68%) were widely sought after. Interestingly, government officials were more or less equally sought for all sorts of information. It can also be seen that among various types of communication sources, respondents used person to person (either government officials, NGO officials, local representatives or awareness activities) more than other mass media and online sources. This points to the need to expand the coverage of mass media.

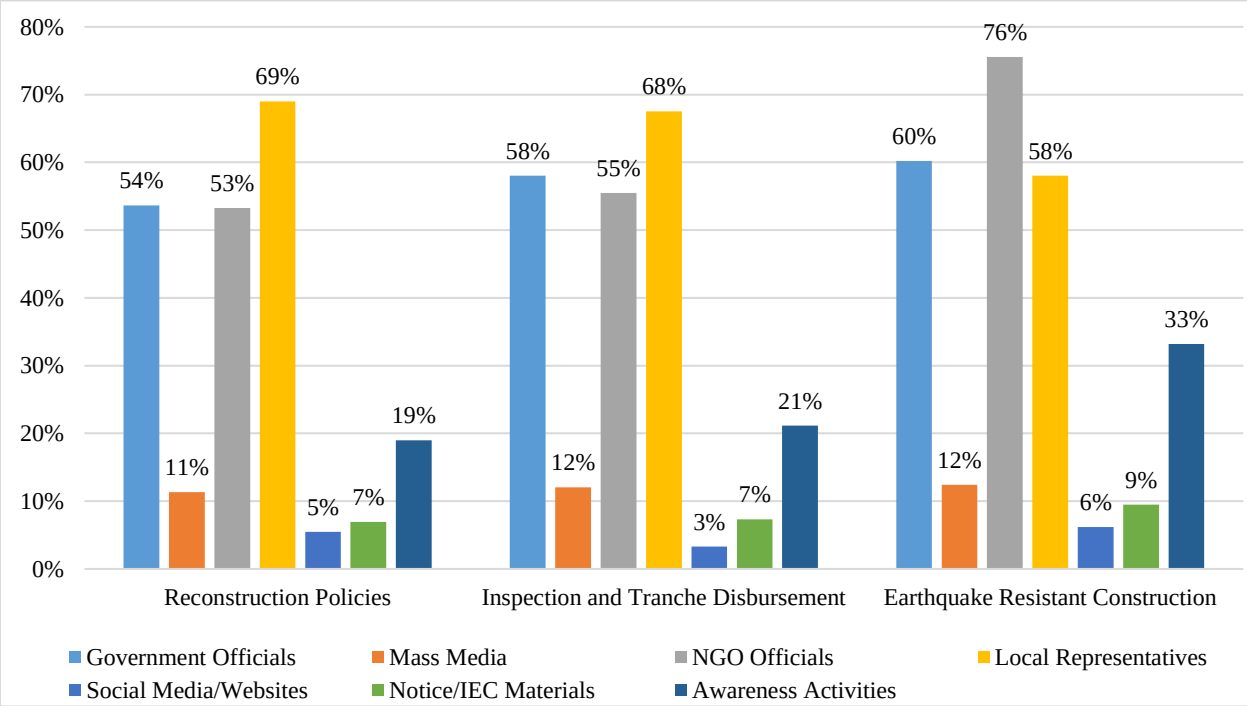

Fig 4. Type of information received vs source of information (Beneficiary respondents)

On the other hand, the fact that government officials, NGO officials and local representatives all had equal weightage on information sharing to beneficiaries, any misunderstanding of information in any of these sources could create conflicts and confusion among beneficiaries. Analysis of respondent perception regarding clarity of information is done in sections below.

5.4.Putting forward the queries regarding problems or issues of reconstruction

During the process of reconstruction of their housing, it seems beneficiaries had a lot of confusions regarding process of construction, conditions for receiving government grant/ reconstruction tranches, building code compliance, technical details of earthquake resistant construction among others. In order to remove the confusions, they put queries up local government representatives, social leaders, NGO officials and community people among others. Fig. 5 describes the different mediums where respondents placed their queries and issues regarding reconstruction for solutions.

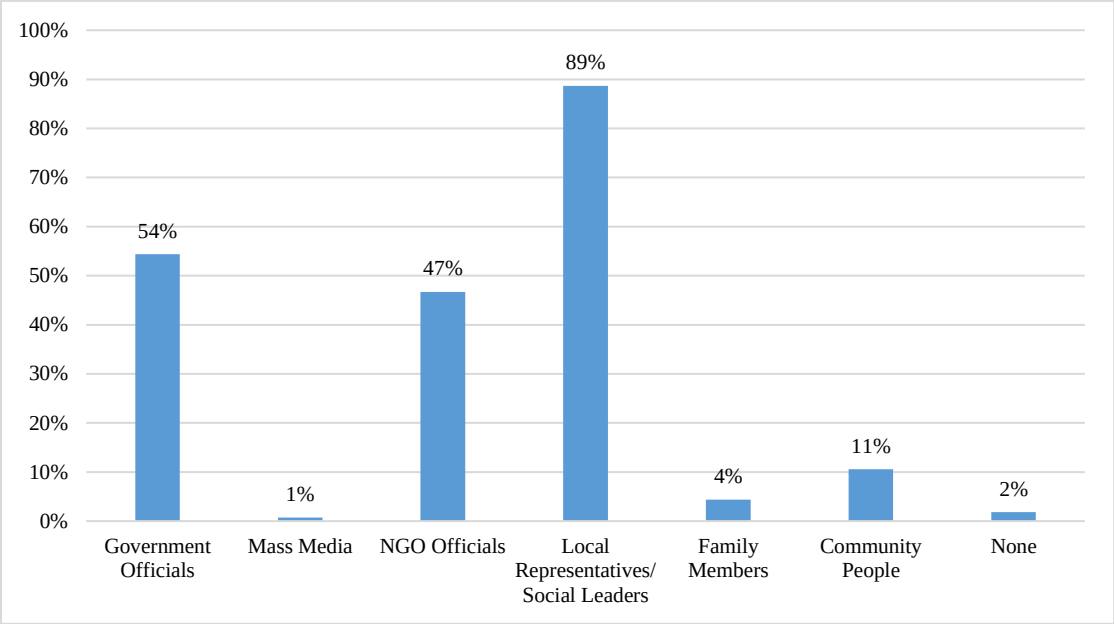

Fig 5. Placement of queries by beneficiaries regarding reconstruction issues

Local government representatives and social leaders were the most sought after when beneficiaries had any queries regarding reconstruction. 89% of the respondents stated that their first point of contact for sharing any issues or queries regarding reconstruction were local government representatives and social leaders. This was followed by government officials (54%), NGO officials (47%) and community people (11%). Much of the beneficiaries stated that they did not quite directly correspond to mass media to place queries or issues.

Additionally, when asked if they had used the toll free number activated by NRA to ease people in asking the confusions and collect grievances, nearly 80% of all respondents stated that they did not know about the Toll Free Number provided by the NRA for sharing issues or placing queries. Only about 1% of the respondents stated that they had used it multiple times.

5.5. Effectiveness of communication medium

To ascertain the effectiveness of communication and information flow during the reconstruction process, respondents were asked if they received information on time and if the information received was clear and understandable. Among the implementation group **(Fig 6.)**, 78% of the government officials said they agree on receiving the timely information where 22% of them strongly agree. As for local representatives, 22% disagreed on having received information on time while another 30% remained neutral. Equal proportion of local representatives strongly

agree on receiving timely information. It shows, in some of the local bodies, the information has reached on time where some lacked the information. Among the partner organizations, majority of the respondents agree on having received timely information. The response varied among the implementation authorities and professionals.

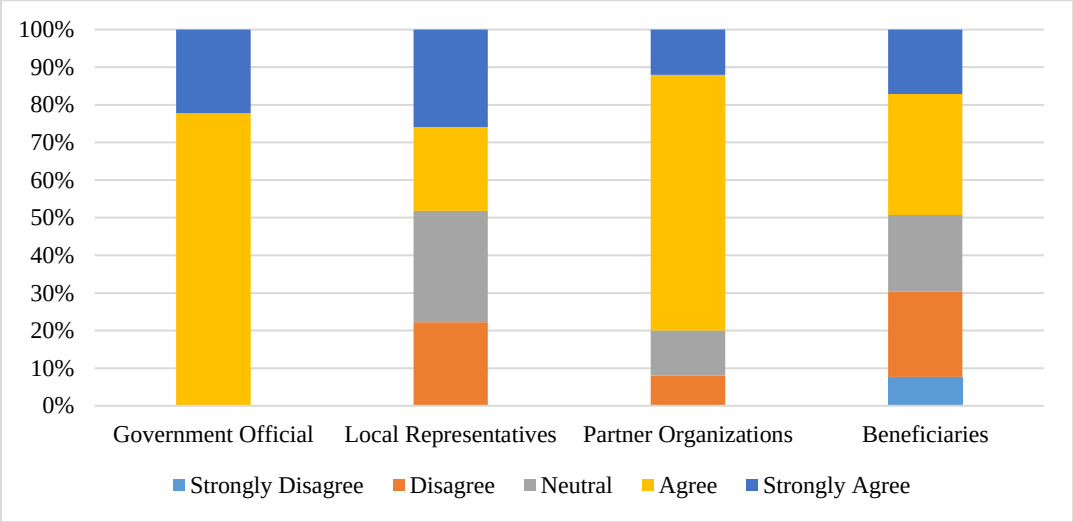

Fig 6. Perception regarding timely reception of information of implementation level and beneficiary respondents.

Likewise, half of the beneficiary respondents agreed to having received information regarding reconstruction on time (17% strongly agree and 32% agree). 23% of them disagree that they have received reconstruction information and messages on time whereas 8% strongly disagree on the same. 20% of total respondents remained neutral in response. It is seen that half of the respondents were satisfied with timely information sharing while the other half were not.

5.5.1. Receiving of information varied with media sources

The chart in **Fig. 7** depicts the beneficiary satisfaction to timely reception of information against the number of different mass media sources used. It is seen that higher number of media used for communication has resulted in better perception regarding timely receiving of information. While none of the beneficiaries with access to only one medium strongly agrees to timely reception, the trend increases with nearly 80% of those with access to five or more media agreeing or strongly agreeing to the same. Upon regression analysis, P value <0.05 suggests that only beneficiaries who received information from multiple sources, regarded that information was timely received.

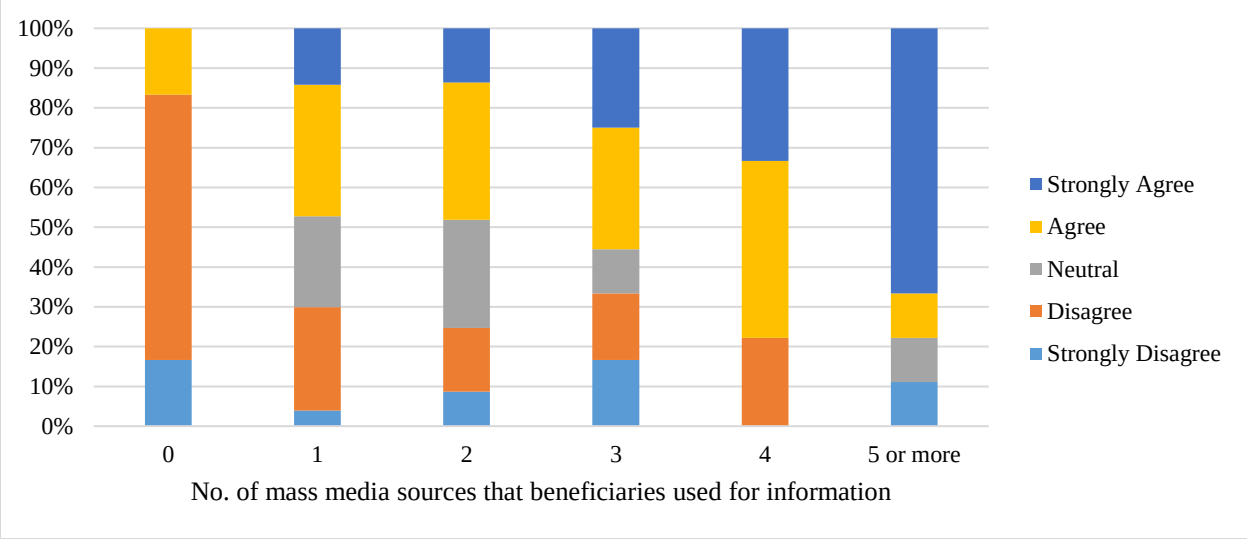

Fig 7. Analysis of perception regarding timely reception of communication with access to multiple sources of information.

5.5.2. Clarity of information received

We asked the respondents regarding the clarity of receiving/internalizing the messages and information which they got from mass media channels **(Fig 8)**, whereby only 29, 16, 19 and 28 percentages of beneficiaries, partner organizations, local representatives and government officials respectively strongly agreed that they were able to receive and clearly understand all information regarding reconstruction including reconstruction policies and changes, tranche approval and disbursement, financial assistance and loans, technical standards and grievance process.

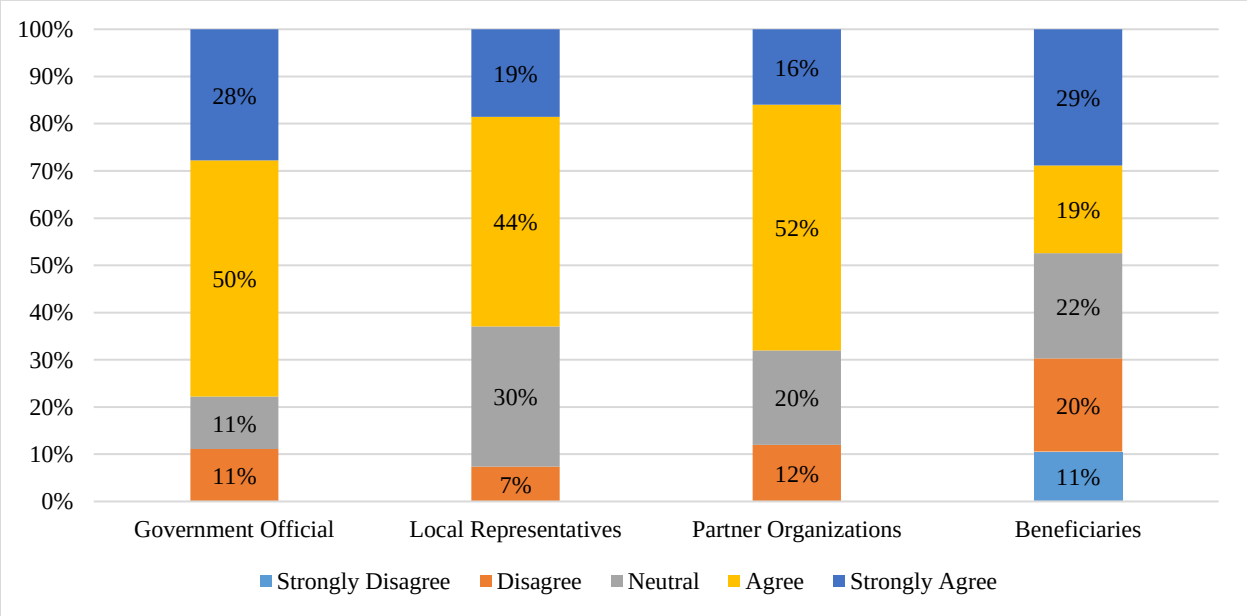

Fig 8. Beneficiary responses regarding clarity of information received

Likewise, among beneficiary respondents that stated they didn't agree to receiving clear information, **Fig. 9** depicts the categorical representation of unclear information. Highest number respondents stated that they found difficulties in understanding or receiving the information regarding reconstruction policies (56%). Similarly, 51% respondents told that information regarding financial assistance and loans were not clearly received/understood. Meanwhile, grievance reporting and tranche disbursement make up 34% and 28% respectively. Interestingly, only 18% stated that technical information was not clearly received. 15% of the respondents stated that none of the information was clearly understood.

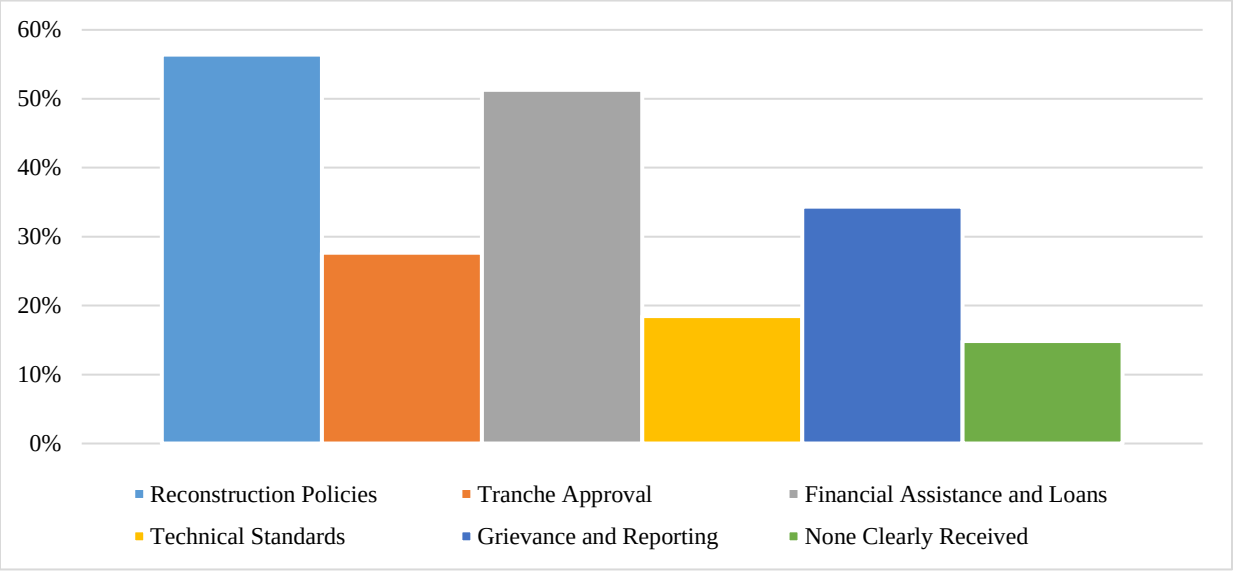

Fig 9. Disaggregation of category of information that was not clearly understood by beneficiary level respondents.

5.5.3. Influence of communication on reconstruction

To ascertain the influence of effective communication on reconstruction, analysis of the reconstruction time period to completion (no. of months) taken by beneficiary respondent was done against their perception regarding timely reception and clarity of information was done. As the later data was collected on a 5 point scale from Strongly Disagree to Strongly Agree, an ordinal regression model was utilized for the analysis. Table 3, 4 and 5 define the regression model along with test to check if the model fits the data.

Table 3. Model Fit Data

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	441.924			
Final	383.896	58.029	8	.000

Here, the chi-square statistic ($p<.05$) indicates that the Final model gives a statistically significant improvement over the baseline intercept-only model.

Table 4. Testing for the Goodness of Fit

	Chi-Square	df	Sig.
Pearson	233.142	278	.977
Deviance	199.003	278	1.000

Here, the null hypothesis that model fit is good. Since, $p = 0.977 > 0.05$, then we accept the null hypothesis and conclude that the model does fit the data well.

Table 5. Pseudo R statistics

Cox and Snell	.204
Nagelkerke	.207
McFadden	.056

Here, the pseudo R^2 values (e.g. Nagelkerke = 20.7%) indicates that explanatory variables (timely reception of information and clarity in information reception) explain about 21% of the variation between the construction time period.

This is just as we would expect because there are numerous others characteristics that impact on construction time period, many of which will be much more important predictors of attainment than any simple association with timely reception of information and clarity in information reception.

Table 6. Parameter Estimates for Model

Information Parameters		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Timely reception of information	Strongly Disagree	2.815	.585	23.115	1	.000	1.667	3.962
	Disagree	.892	.422	4.473	1	.034	.065	1.719
	Neutral	1.549	.401	14.892	1	.000	.762	2.336
	Agree	.677	.344	3.866	1	.049	.002	1.353
	Strongly Agree	0[a]	.	.	0	.	.	.
Clarity of information received	Strongly Disagree	.575	.487	1.394	1	.238	-.380	1.530
	Disagree	.879	.376	5.449	1	.020	.141	1.616
	Neutral	.948	.344	7.615	1	.006	.275	1.622
	Agree	.677	.345	3.864	1	.049	.002	1.353
	Strongly Agree	0[a]	.	.	0	.	.	.

a. This parameter is set to zero because it is redundant.

There is a strong association between the timely reception of information and the construction time period. We can see significant and positive coefficients for the responses reported as strongly

disagree, disagree, neutral and agree. When compared to responses **on the timely reception of information** of the respondents, response on strongly disagree had Odds Ratio (OR) = Exp (Estimates) = Exp (2.815) = 16.69 (95% CI 1.667 to 3.962), p = 0.00 as compared to the response mentioned as "strongly agree". This implies that the respondents who stated "strongly disagree" had 16.69 times more likely than the respondents who stated "strongly agree" for taking more construction time period. This result was found to be statistically significant.

Regarding the **Clarity in Information Reception**, there is a strong association between the clarity in the information reception and the construction time period. We can see significant and positive coefficients for the responses reported as disagree, neutral and agree.

When analyzing the responses on the clarity in the information reception of the respondents, response on neutral had Odds Ratio (OR) = Exp (Estimates) = Exp (0.948) = 2.58 (95% CI .275 to 1.622), p = 0.00 as compared to the response mentioned as "strongly agree". This implies that the respondents who stated "neutral" had 2.58 times more likely than the respondents who stated "strongly agree" for taking more construction time period. This result was found to be statistically significant.

5.6.Challenge in disseminating information to beneficiaries

Information flow chain began from the policy level authorities to implementation level and eventually to the beneficiaries. The information used to reach to the districts and grassroots through different mediums. However, there were challenges in reaching the information to the implementation level and disseminating the information to the beneficiary level.

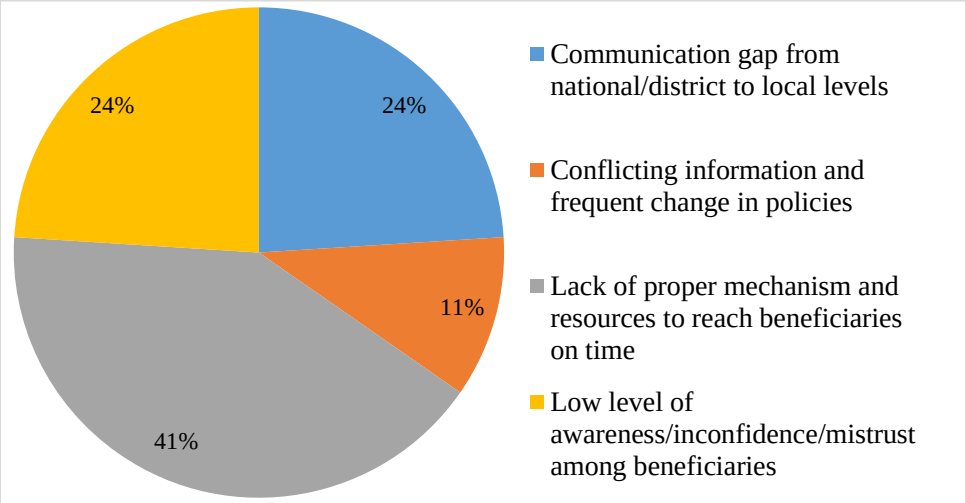

Fig 10. Major challenges faced by implementation level respondents to provide credible and timely information to beneficiaries

As evident in **Fig. 10**, 41% of implementation level respondents stated that lack of proper mechanism and adequate resources was the major challenge in providing information to beneficiaries in time. 24% of respondent stated low level of awareness among beneficiaries. Another 24% of respondents stated communication gap between national, district and local levels whereas 11% stated conflicting information and frequent changes in policies. It shows multiple

sources of information which lacked authenticity and cross check has led in contradicting the information.

6. Discussion

The results indicate that higher the number of media used for communication, better is the beneficiaries' perception regarding timely receiving of information. Among all respondents, 70% agreed to have received information on time while 64% agreed to having received credible information through their sources. However, categorically, government officials and partner organizations had a much higher satisfaction towards reception of information than local representatives and beneficiaries. In particular, 50% local government representatives stated that they did not receive timely information while 37% state that they did not receive credible information. Additionally, upon asking what source of information would be better to receive timely information, respondents suggested that TV programs and local radios would be much better. Similarly, training and orientation events were placed at higher priority to receive credible and clear information. As the respondents belonged the areas where NSET-Baliyo Ghar Program was assisting government led reconstruction process through various components of technical support, the results may have indicated that timely information flow was better. Since, Baliyo Ghar Program was running reconstruction focused TV program in national level and radio programs through community radios and providing the trainings/orientations, these mediums might have become the most effective means of communication among the beneficiaries. Print media and interpersonal communication were not far behind for disseminating reconstruction information. However, social media/online media telephone communication were not much effective.

Regarding the credibility of information/message, there seems not much issues. Nonetheless, the study found that content of communication were not fully understandable and clear to the beneficiaries. Quality control was not effectively enforced on information sharing. Information reaching over to the quake affected communities contradicted hence misguided the beneficiaries in some cases. Use of multiple sources and tools for information production and dissemination to meet the need of diversified target groups was ignored which needs improvement. Remoteness of affected communities may have hindered adequate information dissemination. Regarding the sharing of information and coordination of stakeholders on reconstruction, respondents had mixed response and partly agreed that NRA maintained a clear communication with mass media and stakeholders.

The survey comes with some specific challenges in information dissemination as well. Policy level target group opined that communication materials and contents were not developed as proficiently and easy way to understand. Lack of funding for wide production and coverage of different information materials also hindered the effectiveness of communication mechanism. Remoteness of affected communities hindered adequate information dissemination. Use of audio-visual medium of communication, such as TV, was not as widespread as needed. There were very few TV programs dedicated to discuss on reconstruction issues and reach the communities to cover the content. Likewise, implementation level respondents suggested that lack of proper mechanisms and adequate resources was the major challenge in providing information to the

beneficiaries in time. The level of awareness among beneficiaries hindered to share technical information. Having mistrust over the technical manpower beneficiaries avoided the technical advice. Also lack of timely information from national to district and district to local levels resulted in communication gaps. It has been clearly seen that different information from different sources has led the beneficiaries to be confused. As technical standards varied with change in technical personnel and local representatives provided unclear and biased information to beneficiaries resulted in confusing the beneficiaries. The study shows that the information regarding changes in policies and norms were not propagated in the communities in time as most of the technical professionals deployed in field said, they received the information very late. The communication tools were not properly used. It indicates knowledge and capacity enhancing trainings are needed for the local representatives so that they could deliver right message without being biased.

In most cases the communication activities have been seen effective in providing right information in right time but in some cases the result contradicts the objectives of Communication and Outreach Strategy grounded by NRA. Almost all respondents partly agreed that beneficiaries were receiving credible information on time, albeit with some shortcomings. In stating the strategic goals, timely information to the beneficiaries is prioritized. In this study, highest numbers of respondents complained that messages regarding policy related information was not received well followed by financial assistance and loan. Various reasons might have impacted this frequently chopping and changing policy decisions and decisions related to financial assistance might have impacted confusions to the public and thereby impacting in understanding the information. The strategy proclaims in smoothing the coordination among reconstruction stake holders but the study finds not such smooth coordination among central agencies and local bodies. Basically local representatives deny the smooth coordination made by central bodies on reconstruction. Also as government deployed technical professionals are not much satisfied with the information flow mechanism, it can be said that intra-government communication has not been that effective. The communication strategy envisions to ensure NRA maintaining solid public relations and positive networks in media. But during the study respondents had mixed response and partially agreed that NRA maintained a clear communication with mass media and stakeholders. Media coverage was somehow helpful in covering actual field cases of reconstruction and helped in shaping reconstruction policies and programs. However criticism of government practice on reconstruction were the major contents. Good practices of the grassroots were undermined and the political addresses on reconstruction were most covered. The clear gap between NRA and political bodies was seen as the politicians and authorities used the remarks like; "the beneficiaries will be kept under the roof within this monsoon or winter" which wasn't the fact really. Announcement made just for public consumption generated over expectation among the beneficiaries which eventually affected the process. NRA missed the communication among the political parties and convince them on the subject that reconstruction would take time and clarify on the facts.

7. Conclusion

Significant impacts can be seen on the reconstruction rate (time to completion) of beneficiaries with respect to the effectiveness of communication and information shared and

received at the community level. Apart from gaps, the communication interventions made in the leadership of NRA has turned effective. In line with the NRA's communication strategy, communication plans developed and implemented through partner organizations has also shown positive impact in the quake affected communities. Hence overall communication activities carried out during reconstruction process seems effective. The gaps seen visibly can be eradicated. Developing merely paper documents would not work rather implementing it wisely and widely is significant. The study comes with the conclusion that one or two mediums would not be sufficient to propagate the intended message or information among diversified communities. As local authorities and social leaders are the major source of information, they themselves need to be well informed on the subject. Local radios and TV programs are seen quite effective in disseminating reconstruction message and technical information; hence these mediums seek more investment on them. Apart from the efforts made through partner organizations, government body like NRA can partner with local radios and national televisions to reach beneficiaries with timely and credible information.

8. Recommendation

Mass media work in shaping the mind of audience and generally it is assumed that people have trust over the contents of mass media. Hence, in the widespread and important campaign like reconstruction, media relations matter a lot. Maintaining the good relations with mainstream media should have to be prioritized. To address the vast majority of general public only one or just two mediums would not be sufficient as well. No communication is successful if it is not received by receivers. In order to be successful communication, the receiver must receive the messages/information exactly the way the communicator/mass media wants to be received to the receiver. Hence mobilizing the multiple mediums to propagate the message among diversified communities is seen necessary.

Remoteness of affected communities hinders the adequate information dissemination. Hence, mobilization of the socio-technical support groups in such remote areas logically expects them to be equipped with sufficient resources. And making them updated on the revised policies and decisions through mobile messaging or using social media platform to maintain uniform information among all would support.

Local government taking part in decision making process and sound coordination with local government, Information sharing through local governments and stakeholders would work better. Use of a single medium of communication to disseminate to the implementation level (DLPIU/Local governments) is quite necessary so that understanding is uniform and keeps the implementation units updated. Maintaining good coordination and information sharing among different stakeholders, regular meetings, training programs and orientation activities to clear out differences would better work for effective communication. Use of social mobilizers to provide information, allocation of budget at local level in communication and information dissemination and conducting door to door campaigns to disseminate information are other ideas to go with credible information and make the communities quite informed.

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