United Nations Development Programme

United Nations Development Programme
Nepal
Project Document

Project Title	Support to Implementation of National Building Code and Safer Building Construction in 3 Earthquake affected Municipalities
UNDAF Outcome(s):	7. People living in areas vulnerable to climate change and disasters benefit from improved risk management and are more resilient to hazard related shocks
Expected CP Outcome(s): *(Those linked to the project and extracted from the CPAP)*	Support to Implementation of National Building Code and Safer Building Construction in 3 Earthquake affected Municipalities
Expected Output(s): *(Those that will result from the project and extracted from the CPAP)*	CPAP Output 7.2: Urban Populations are better able to prepare for and manage hazard (Project ID 88408)
Implementing Partner:	**Main Implementing Partners:** Municipality Office, Municipal Council **Key stakeholders:** Nepal Engineers Association local chapter, Masons organization, Contractor Association, Social Mobilizers **Central Government Stakeholders:** Ministry of Urban Development/Department of Urban Development and Building Construction, Ministry of Federal Affairs and Local Development
Responsible Parties:	

Brief Description

"Support to Implementation of National Building Code and Safer Building Construction in 3 Earthquake affected Municipalities" aims at creating a conducive environment for safer building construction practices in 3 earthquake affected municipalities by building capacities of the municipalities to facilitate the safer building construction processes on the ground. The capacity building for the municipalities entails the institutionalization of the code compliant building permit system with risk sensitive land use planning, the practice of information dissemination to the house owners, and the generation of skilled personnel. The project will contribute to Nepal's post-earthquake reconstruction program led by the Reconstruction Authority, and support the country's long-term vision of making Nepal safer and less vulnerable from future seismic hazard and associated disaster risk.

Programme Period:	Jan 2016 to Dec 2016 (12 months)
Key Result Area (Strategic Plan):	Outcome 5&6
Atlas Award ID:	_____
Start date:	Jan 2016
End Date	Dec 2016
PAC Meeting Date	_____
Management Arrangements	DIM (CDRMP)

Total resources required	$318,654
Total allocated resources:	$318,654
• Regular	_____
• Other:	
○ JAPAN	$318,654
Unfunded budget:	n.a.
In-kind Contributions	n.a.

Agreed by (Implementing Partner):

Agreed by UNDP:

I. BACKGROUND

On 25 April 2015 at 11:56 a.m. NST, a strong earthquake of M7.6 magnitude[1], struck the western and central Regions of Nepal, including Kathmandu Valley. The earthquake was the strongest one since the Bihar-Nepal earthquake in 1934, and more than 300 aftershocks with M>4.0 have occurred until today. Four aftershocks were larger than M6.0 and the largest one of M6.8 occurred on 12 May.

This has resulted in destruction and damage of almost 800,000 houses and buildings[2] across the affected districts in the country. About 26% of the affected households are female-headed. The disadvantaged social groups in the poorest districts have suffered the largest damage and loss. As for the physical damages to the buildings, a huge number of houses damaged are attributable to the buildings that were non-engineered. The official record reports that 95 % of fully collapsed buildings and 67.7% of damaged houses were 'non-strength masonry' which is constructed with locally available or produced masonry such as stone, brick and sun-dried brick[3]. In rural areas like in Sindhupalchowk District, which have borne the brunt of the damage, have stone with mud mortar as the most common housing typology. While many affected rural buildings were naturally seismically weak structure, there are many reinforced concrete (RC) frame types of buildings that were totally collapsed due to structural failures.

The National Building Codes (NBC)[4] formulated to ensure structural safety of construction, approved in 2005 by the Cabinet, is mandatory in all municipalities as per amendment to Building Act, 2007. However in practice, ineffective governance coupled with limited technical, financial resources at national and local levels, shortage of skilled manpower and lack of political will and awareness among house owners have been restraining its effective enforcement. Implementation of NBCs is limited to only few municipalities and it has not touched upon the most prevalent construction typology (stone, brick and mud mortar) in rural areas where mass destruction of buildings happened due to the recent earthquake.

The experiences of the April 2015 earthquake have highlighted the importance and urgency of improving the structural safety of the buildings and risk sensitive land use planning in the country. It is important to note that, while number of non-strength masonry buildings and non-code compliant buildings were severely damaged or collapsed at the cost of human lives, it was proved that those buildings compliant to building codes were undamaged by the tremors even in the towns close to the epicentres in the affected districts. Also noteworthy is the satisfactory performance of many schools that were retrofitted over the past few years and withstood the large-scale earthquakes.

II. SITUATION ANALYSIS

Urgency

After the recent earthquake, Government of Nepal has notified all the municipalities/local bodies to exercise building construction moratorium for two months during which any new construction and issue of building permit within their jurisdiction is prohibited.

It is expected that since the construction moratorium is now lifted, there will be strong directives to local bodies to enforce safer construction practices stringently. The safer construction practices involve two aspects of construction. First is the reconstruction and retrofitting of damaged buildings, and the second is for the new buildings. The reconstruction of damaged buildings will involve the techniques of 'Build Back Better' methodologies, and for upcoming new buildings, the enforcement of the existing building code is essential to ensure that risks are not re-accumulated.

[1] National Seismological Center

[2] Post Disaster Needs Assessment (PDNA) reports *"a total of 498,852 houses have fully collapsed or are damaged beyond repair, and 256,697 have been partly damaged"*, according to Ministry of Home Affairs.

[3] PDNA

[4] Under National Building Code, four building types are identified (A) International states of Art, Engineered (National/international Building Codes), (B) Engineered, (C) Mandatory Rules of Thumb (Pre Engineered), (D) Low strength masonry, Non Engineered

Once the reconstruction program commences, local bodies are expected to play a vital roles in facilitating the safer (re)construction of buildings on the ground. Urgent action is required to support preparing the local bodies with appropriate capacity to facilitate the (re)construction work of thousands of houses.

Rural Housing Vulnerability – capacity & governance for code compliance

Municipalities/local bodies are primarily responsible for the enforcement of safer building construction in the country. However, very few municipalities, especially rural municipalities/newly formed municipalities in Nepal, have the technical and logistic capacity to facilitate these practices. The existing building permit process in the most of municipalities does not ensure the compliance to the national building code for the reasons such as the lack of trained professionals in municipalities. This could be compounded by the pressure to rebuild the collapsed buildings rapidly in the coming months. As the Post Disaster Needs Assessment (PDNA)[5] notes, if the reconstruction of new housing stock is not regulated through building codes and not governed by well-resourced local governments and a skilled workforce, the vulnerabilities in the building construction sector will continue to increase in the future. This creates the perfect breeding ground for future earthquake disasters. Therefore, it is urgent to capacitate the local bodies in delivering the services of safer construction techniques to the people. The local bodies are the only agencies that are accessible to the local inhabitants.

The PDNA further notes that rural housing vulnerability is a combination of social and economic factors, and poor application of the National Building Codes' guidance for earthquake resistant non-engineered buildings in remote areas, lack of availability of skilled masons and technical staff for supervision in the rural areas.

Housing reconstruction programme not only needs to rebuild huge numbers of housing units but also has to address these gaps or else harbours the risk of increasing further vulnerabilities. As reconstruction of buildings start in the affected areas, it is critically urgent to install appropriate and sufficient capacity at the municipalities to facilitate safer building construction, as well as among the affected populations with knowledge and skills to build back better.

Proposed sites for intervention (Chautara, Melamchi and Pachkhal municipalities)

The project will provide support to Chautara municipality (Sindhupalchowk District), Melamchi municipality (Sindhupalchowk District) and Pachkhal municipality (Kavrepalanchowk District). The three municipalities are among the 43 municipalities in the 14 most severely affected districts and highly vulnerable to earthquakes. These are newly declared municipalities (in December 2014), hence, they lack the technical resources and organisational structure, knowledge for many aspects of municipal administration and governance, including for safe construction and building code implementation. The April 2015 Earthquake and the damage distribution of buildings around these area have opened the opportunity for safer construction and reconstruction in these area.

The initial assessment of these local bodies through filed visits conducted revealed that these municipalities are very keen on adopting the concept of Build Back Better and safer construction techniques not just limited to the earthquake reconstruction but creating a culture of safety through building code implementation in the long run. The willingness of the communities to adopt the knowledge of earthquake resistant construction technique is overwhelming, and this was learned through the recent two mason's training and two awareness raising activities conducted by UNDP's Comprehensive Disaster Risk Management Program (CDRMP) in Sindhupalchowk District.

[5] PDNA was conducted and completed in July 2015, to assess the impact of the disaster, including the funding implications for the restoration of livelihoods, economy and services, rehabilitation and reconstruction of housing and infrastructure. The assessment was conducted under the leadership of the National Planning Commission (NPC) with the technical support from various organizations including UNDP. PDNA estimated that the total value of disaster effects (damages and losses) caused by the earthquakes is NPR 706 billion (US$7 billion). Of that amount, NPR 517 billion (76 percent of the total effects) represents the value of destroyed physical assets, and NPR 189 billion (24 percent of the total effects) reflects the losses and higher costs of production of goods and services arising from the disaster.

The selected municipal areas are the market centres, headquarters and nodes for all the rural population seeking administrative and economic service delivery. The safer construction initiatives adopted by these localities would have a demonstrative effect and would trickle down to the rural hinterlands, where the population is equally if not more affected by the earthquake.

After the Government has lifted the construction moratorium, the three municipalities have begun to introduce a rudimentary building permit system without adherence to Nepal's National Building Code. It is expected that the people will throng to these institutions asking for building permit certificates and adherence to code compliance. The lack of skilled human resource and the knowledge gap may lead to business as usual process and reconstruction of risks and earthquake vulnerabilities in future. From UNDP's experiences in the past, the most urgent interventions need to focus on the capacity of municipalities to implement a code compliant building permit system, ensuring the supply of skilled man power for owner-built houses, and create demands and build know-how among the house owners for safer building construction.

III. STRATEGY FOR PROMOTION OF SAFER BUILDING CONSTRUCTION

The project draws on lessons and experiences from UNDP's Comprehensive Disaster Risk Management Program (CDRMP, 2011-2015), which has been supporting the safer building construction in 5 municipalities and 6 urbanizing VDCs in Kathmandu Valley.

Of the 43 municipalities affected by the earthquake, only 13 municipalities have the code-compliant building permit system in place and they are all concentrated in Kathmandu Valley. Typical capacity gap in the municipalities without the code-compliant permit system is observed in the following areas:

Human resources: to effectively scrutinize the structural drawings submitted as part of the building applications; approve or recommend revisions to ensure compliance with building code provisions.

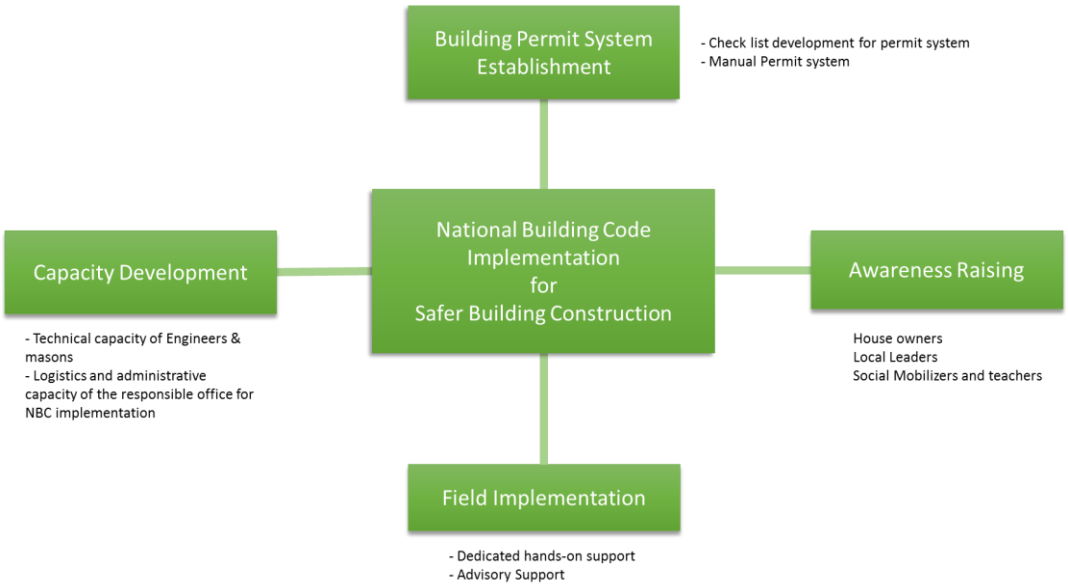
Technical processes/ systems: to revise building permit system process to integrate code compliance. This extends to providing relevant advice/ guidance to prospective home builders and designers/ engineers

Enforcement: to ensure that approved drawings translate to code-compliant constructions on the ground.

With massive reconstruction anticipated in the affected municipalities soon after the 2-month moratorium banning new constructions are removed, especially after the monsoons, it is the right time for assisting municipalities to set up the requisite systems to ensure safe constructions.

It is important to highlight that the pre-requisite for building code implementation at the local level is the development of a code compliant permit system at the outset. A code compliant building permit system needs to be combined with appropriate technical and functional capacity of the responsible municipality officials to effectively implement, high demand from the house owners on safe construction, supply of appropriate volume of skilled persons on the ground (including the trainers), and strong monitoring of field implementation (See the Frame of Approach below). The sustainability of the system relies on the strong leadership and commitment of the local bodies with continued investment in the internal capacity enhancement.

Figure 1: UNDP Nepal's frame of approach for the support to NBC implementation for Safer Building Construction



Last but not least, Safer Building Construction is not only the issue of structural safety of the building, but also about spatial risk-informed development of the settlement as a whole. Wherever feasible, the element of **risk sensitive land use planning** will be promoted and supported hand in hand with the promotion of the structural safety of the buildings.

Sustainability & Scalability

Strengthening fundamental capacity of the existing municipality technical section is a key to the **sustainability** of the project. This has been demonstrated in the past UNDP's support to the municipalities and VDCs in Kathmandu Valley where trained engineers/technicians remain in the municipality to facilitate safer building construction, and continuous resource allocation from the local bodies is made available after the UNDP's support is over. After the earthquake, Ministry of Federal Affairs and Local Development announced to attach at least one engineer to each municipality. Japan-UNDP partnership fund will strengthen the capacity of the technical unit in the three target municipalities.

In the aftermath of the earthquake, there is high demand among the local bodies in receiving guidance and capacity support from the central government and non-government organizations. It is aimed that the target municipalities under the project will generate demonstrative effect to the surrounding municipalities or villages where similar system is required. UNDP will encourage a **scale-up** of the safer building construction practice through local bodies by facilitating the peer learning among the neighbouring municipalities and VDCs, as well as advocating to the central government (Ministry of Federal Affairs and Local Development and Ministry of Urban development) for the expansion of already demonstrated approaches in the wider geographical area.

IV. UNDP'S EXPERTISE IN PROMOTION OF SAFER BUILDING CONSTRUCTION

UNDP has a long-term support to the Government of Nepal to build their capacity to the promote of safer building construction practices, and these are represented by Earthquake Risk Reduction and Recovery Programme (ERRRP, 2007-2010) and Comprehensive Disaster Risk Management Program (CDRMP, 2011-2015).

Through CDRMP, UNDP has been supporting Kathmandu Metropolitan City and Lalitpur Sub-metropolitan city in developing and implementing electronic Building Permit System (e-BPS) which allows code compliance building drawings and construction completion certificates. Similarly, 5 new municipalities of Kathmandu valley have been supported by CDRMP to implement code compliant manual building permit system since 2013. The support includes; staff mentoring and establishing counselling centres for prospective house owners.

Policy and normative aspect of safer building construction is critical to complement the above mentioned bottom-up capacity building support at local government level, and this is one area of expertise for UNDP. Recent work by CDRMP supported Ministry of Urban Development in drafting seismic retrofitting guidelines of vulnerable buildings in Nepal. Another significant policy-level intervention is demonstrated by the work of facilitating Nepal Rastra Bank (Central Bank) to issue a directive to all Banking and Financial Institutions in code compliant housing investment. This is a small but catalytic step toward the demand creation through the engagement of private financial sector.

UNDP Nepal has an in-house technical capacity to facilitate Risk Sensitive Land Use Planning (RSLUP), and has been supporting Kathmandu Valley Development Authority to conduct a study of urban growth trend and Multi-hazard Vulnerability assessment of Kathmandu valley in 2013. This led to finalizing the RSLUP of Kathmandu Valley, and the experience contributed to promoting country-wide risk sensitive settlement development and guiding document for drafting Building Bye Laws which is developed by Ministry of Federal Affairs and Local Development.

As part of immediate post-earthquake early recovery support, UNDP is currently supporting the capacity building of 150 engineers of Kathmandu Valley in building code implementation. Within the valley, it is planned to support the institutionalization of the skilled person by developing a licensing system whereby a pool of 600 trained masons are formally registered, and mobilized throughout the municipalities in the valley.

Last but not least, in supporting the post-earthquake recovery of 2015 earthquakes, UNDP aims to draw lessons from the experiences of 2011 Ilam post-earthquake early recovery of school buildings damaged by the quake.

V. COMPLEMENTARITY WITH NATIONAL PROGRAMME AND OTHER PARTNERS

National Reconstruction Program

Proposal for the Reconstruction Authority has been introduced in the parliament for approval, and it is expected that the institution will be established and functional in the near future. Meanwhile, the reconstruction policy and operational guideline have been under preparation by National Planning Commission. Detailed house-to-house survey is being planned by Central Bureau of Statistics to finalize the list of 'affected households'. It is envisaged that a mechanism at district and local level will be instituted to coordinate the planning, implementation and monitoring of the reconstruction program - the implementation mechanism is expected to have designated implementation units at District level and VDC/ municipality level.

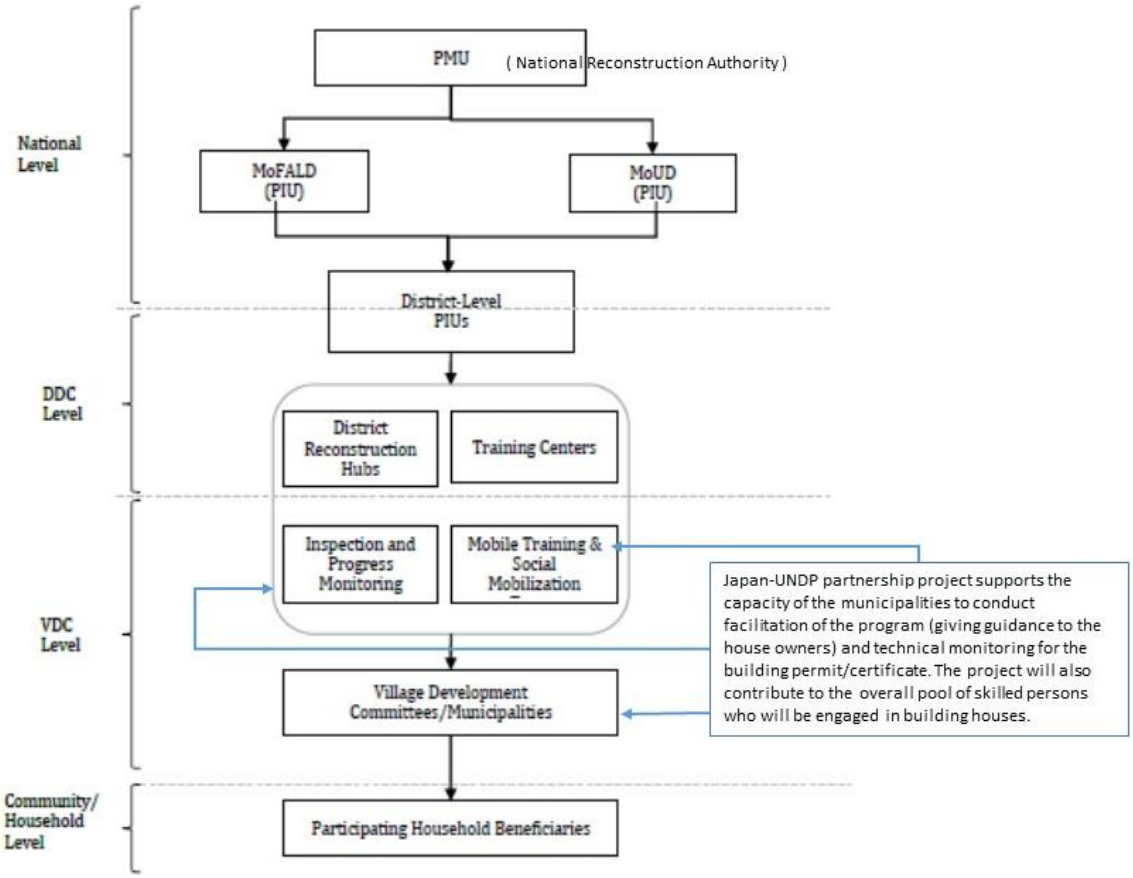
At the local level, municipalities and VDCs play a key role to facilitate the safer (re)construction in a long run. Japan-UNDP Partnership Fund project specifically contributes to strengthening the capacity of the municipalities to operate the building permit system, to guide house owners through the safer building construction process and know-hows, as well as to promote the increased and institutionalized pool of skilled person available for (re)construction in short, medium and long-term. By strengthening the essential core technical and functional capacity of the existing institutional mechanism (in this project, technical section of municipalities), the project aims at the effectiveness and sustainability of the results of the technical support in a longer term. There are 43 municipalities and more than 700 VDCs that have suffered from the earthquakes. Many of

these local bodies lack the appropriate capacity to facilitate the safer building construction. Some development partners such as the World Bank and UNDP (and potentially other organizations) will provide capacity support to the municipalities and VDCs to facilitate the safer building construction (i.e. providing building permit etc.) where needed in a coordinated manner. UNDP has received requests from the three municipalities that will be supported under the Japan-UNDP Partnership Fund Project.

Training of trainers (TOT) for masons' training proposed in this project would create much needed trainers that other national and international agencies could capitalise upon as they initiate activities to create more trained masons to contribute to the reconstruction in the severely affected districts. (While PDNA estimates that at least 20,000 masons are needed, DUDBC's recent figure indicates 50,000 masons)

Figure 2: Envisaged tentative frame of structures for program implementation

The key elements of the necessary levels of support, guidance, coordination, administrative and monitoring functions for reconstruction program were suggested in the PDNA Housing chapter, and proposed in the form of the below diagram by the World Bank in its project appraisal document. Final decision of the operational structure of the ground level implementation is expected to be made by the Reconstruction Authority. It is planned that VDCs/municipalities grouped into clusters to focus on certain number of houses to be (re)constructed. VDC secretariat/municipality office requires certain level of capacity to support implementation of the reconstruction.



Synergy with JICA's technical support

It is envisaged that the Japan-UNDP partnership project maximizes the synergies with the support provided by JICA/Government of Japan for the reconstruction. It is understood that the Government of Japan's support to housing reconstruction through the loan of 12billion Japanese Yen (approximately 96 million USD, co-financing with the World Bank), is utilized for the housing grant to subsidize the reconstruction of individual houses (2,000 USD per household as per the

Nepali Government's decision) in the 14 most affected districts. UNDP's support will focus on strengthening the capacity of the local government (3 municipalities identified and request received) who is responsible for issuing code compliant building permit responding to the demand for the housing re-construction. By strengthening the local government's service delivery, the project is expected to bring about synergetic impact to the overall housing construction supported by JICA.

There are other complementary or synergetic effect expected between JICA's assistance and UNDP's support through Japan-UNDP partnership fund. In Melamchi municipality and other multiple locations in Sindhupalchowk, JICA plans to bring in the technical expertise to construct 'model houses'. This facilitates not only the on-the-job training of skilled person during the construction of the model houses, but also to provide the visible demonstrative safe structure to the house owners. This contributes to the local level trainings of the skilled persons and enhancing the knowledge of the house owners on safer construction.

In Melamchi municipality, while JICA acts as a partner organization to mainly support the on-the-ground capacity building of skilled persons and house owners, Japan-UNDP Partnership Fund project will support the municipality directly to build their capacity not only to establish and operate the code-compliant building permit system but also provide guidance to the house owners by disseminating the information about building permit system and safe building construction through a resource centre. (It is critical that the local body has the appropriate and sufficient capacity as they are the key implementer and facilitator for the code compliant building construction not only during the reconstruction period but also in the long-term.) By ensuring the municipality to fully utilize the output of the model house initiative supported by JICA, it will amplify the impact and effectiveness of the knowledge/information dissemination on safer building construction.

The Government of Nepal has an ambitious target of training 50,000 masons, and various organizations including UNDP and JICA will contribute their resources to the overall pool of masons to support this. It is very important to recognize (and if possible to support) the District-level implementation and hub-level coordination over the rostering/certification of trained masons, since this will avoid the duplication of efforts and promote effective allocation of resources.

Coordinated approach and synergy with other development partners and I/NGOs

The three municipalities have officially request the support from UNDP in this area, and close communication with the Ministry of Federal Affairs and Local Development and Ministry of Urban Development have been made so far. Meanwhile, UNDP also works closely with Shelter Cluster who is currently coordinating shelter and housing reconstruction related non-government partners. This is to reduce the duplication of the support areas and maximize the available non-government resources to support across the affected districts. Potentially, as the humanitarian phase secedes, the shelter cluster together with the early recovery cluster will be transformed into the recovery and reconstruction platform where non-government partners continue their coordinated approaches. UNDP will be part of this platform and play a major role in this coordination mechanism to ensure the synergy with all the relevant non-government support for the reconstruction.

Nation-wide effort toward Safer Building Construction in a long-term

It is important to note that the 'earthquake affected districts' are not the only vulnerable areas to the seismic hazard. Nepal continues to face the earthquake in the future, and promotion of safer building construction across the country should be considered as equally high priority while reconstruction program is rolled out. Prior to the disaster, Department of Urban Development and Building Construction (DUDBC) under Ministry of Urban Development drafted 20-year National Plan of Action for Safer Building Construction to promote nation-wide safer building construction[6]. According the plan, Ministry of Federal Affairs and Local Government (MOFALD) and DUDBC plan to strengthen the enforcement of NBC implementation along with building bye-laws in all the 191 municipalities in Nepal over the coming two decades. The project is expected to support not only the immediate 5-year recovery needs of the affected municipalities, but also to ensure the

[6] The plan of action was developed with the leadership of DUDBC with the facilitation of Nepal Risk Reduction Consortium Flagship 5 partners (UNDP, JICA, NSET, DFID, CORD etc.) in between June 2014 and April 2015.

contribution to the country's long-term investment in the risk mitigation and the reduction of loss from future earthquakes through safer building construction. It is with this view, the project focuses on the fundamental capacity of the municipalities who are responsible for giving out seismically proven building permit on the ground.

VI. KEY GOVERNMENT AND NON-GOVERNMENT STAKEHOLDERS

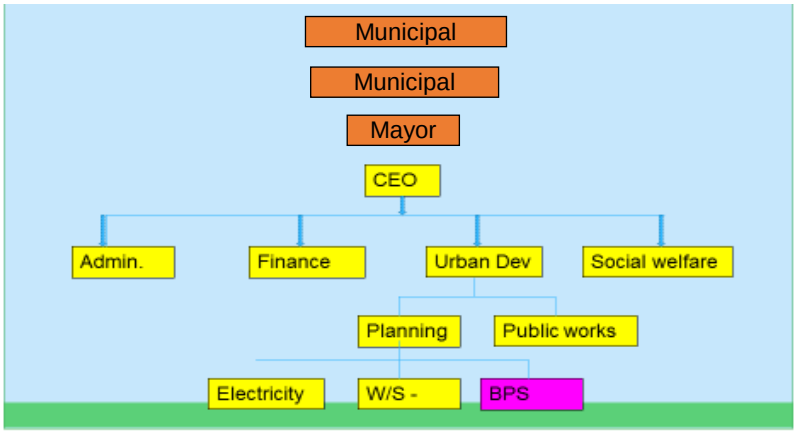
The project will collaborate closely with the relevant national government ministries, department and district/local administration as well as multi/bi-lateral development partners. Through participation in the Shelter Cluster led by Department of Urban Development and Building Construction as well as stakeholders supporting the Reconstruction Authority, the project will actively collaborate with other national and international agencies (World Bank, JICA etc.) involved in relevant initiatives.

1. **Partnership at national level**[7]: UNDP will closely work with Ministry of Federal Affairs and Local Development (MoFALD), Ministry of Urban Development (MOUD). Key agencies that will be closely partnered with are the Department of Urban Development and Building Construction (DUDBC), and the proposed Reconstruction Authority. The engagement with Centre for Technical Education and Vocational Training (CTEVT) will be sought by contributing to the institutionalization of the lessons from the masons training into CTEVT's curriculum. As for the non-government, the emerging non-government coordination mechanism through Shelter cluster is another partnership at national level. Similarly, the project will ensure the regular communication with World Bank and JICA who are the key donors to the housing reconstruction.

2. **Coordination at district/municipality level –** At the municipalities, activities will be coordinated directly through the Municipal Councils and technical division of the municipalities, with involvement of MOFALD's Municipal Division. It is critical to keep close eye on the emerging Reconstruction Authority's institutional set-up for the coordination of the implementation and monitoring of the reconstruction program (see the Figure 2 under IV. above) at the local level. The capacity support to the target municipalities through this project will directly complement the effectiveness of Reconstruction Authority's implementation mechanism on the ground.

Figure 3: institutional set-up within municipalities where UNDP's capacity support is provided

(Setting up of building Permit System (BPS) will be promoted, and the capacity of the in-house engineers will be strengthened to facilitate the code-compliant BPS.)



[7] **Ministry of Federal Affairs Ministry of Local Development** is responsible for the coordination, cooperation, facilitation and monitoring and evaluation of activities undertaken by local bodies - 75 District Development Committees, 191 Municipalities and 3276 Village Development Committees. It also has a mandate to coordinate, cooperate, facilitate and synergize the initiatives taken by different development partners. **Ministry of Urban Development** is responsible for formulation and implementation of urban planning standards, building codes, safer construction guidelines. **Ministry of Education** through the CTEVT is responsible for vocational training of masons, and other construction-related artisans (plumbers, electricians etc.)

The implementation of the project activities, particularly at the municipalities will benefit from close partnership with UN Volunteers, through recruitment and deployment of National UN Volunteers (NUNV Engineers) to support the municipalities. The NUNVs will also play a critical role in promoting awareness among the communities on safer construction practices.

3. Engagement of the Government of Japan as donor

Ensuring accountability to the Government and the people of Japan as the donor is one of the key priorities in implementing this project. The project will **maximize the visibility of the support from Japan** by embedding the Japanese flag logo and stickers in the equipment/items provided to the municipalities and banners used for training sessions. Not limited to the timely reporting of the progress of the project to the Government of Japan, the project will invite the Embassy of Japan to visit the field to observe the results brought to the beneficiary municipalities and the communities.

VII. PROJECT OBJECTIVE, OUTCOME, OUTPUTS AND ACTIVITIES

Objective:

To contribute to Nepal's overall earthquake recovery and long-term Safer Building Construction effort

Outcomes:

A conducive environment for safer building construction is created for the affected municipalities through improved access to knowledge and skills for the housing reconstruction for the local bodies, skilled persons and the people in the communities.

Key Outputs and Activities:

The project activities are designed to lead to three outputs as detailed below:

Output 1: *Fundamental institutional capacity of the target municipalities to effectively facilitate Code Compliance Building Permit System is installed and strengthened*

Activities: Building on UNDP's experiences of working with established and newly-created municipalities in Kathmandu Valley, the interventions for the support to the target municipalities are composed of the following;

1. Support municipalities to establish the processes for issuing code-compliant building permits. This will involve:
   - establishing / strengthening of a building permit section within the municipalities.
   - revision of application forms to ensure requisite drawings are part of the applications.
   - standardization of Permit fees for various categories of buildings;
   - equipping with computers and requisite software, internet connectivity (to link to the Electronic Building Permit System in the future) and office furniture;

2. Technical support to the building permit section engineer. This will include:
   - provision of engineers to support the building permit section engineers on a daily-basis to scrutinize/ review building applications and drawings for code compliance[8].

[8] this support will be transitioned to a remote support (modelled on call-centre/ internet-based operation) in the long-run

- Support to enforce code-compliance. Includes provision of logistic support for monitoring compliance and enforcement through GPS-enabled camera for geo-tagged photos of critical members of building and support regular (and random) site visits/ inspections

3. Support Chautara municipality to develop Risk Sensitive Land Use Plan (RSLUP) and to update building bye-laws accordingly. This will involve:
   - conducting baseline survey, participatory assessments of seismic and other hazards, vulnerabilities, growth trends, and risks
   - develop Risk Sensitive Land Use Plan (RSLUP) with involvement of the municipality, communities and other stakeholders
   - development of building bye-laws incorporating risk assessment findings and land use planning considerations of the RSLUP, and its integration into the building permit system

   *The activity 3. could be implemented in all 3 municipalities. However is being prioritized for Chautara municipality, due to it being most severely affected, and also that the other two municipalities would be covered through other pipeline projects.

Targets:

- 3 municipalities install code compliant Building Permit System
- 1 municipality updates building byelaws based on Risk Sensitive Land Use plan

Output 2: *Increased awareness and demand leading to the population having improved understanding and awareness of safer building construction in the target municipalities*

Activities:

1. Establish mechanisms for weekly orientations in the municipality to create awareness of home builders, and local community as a whole on safer building construction. House owners, local leaders, women's groups and networks, social mobilizers, school teachers will be targeted through the weekly orientation on earthquake safe construction practices;
2. Establish a building construction support centre in each target municipality, to function as the information desk administrated by the municipality providing information related to safer building construction to home owners in the municipality.
3. Support the construction of a small building in the municipality by mobilizing the trained masons/ engineers, to serve as technology demonstration unit/ building construction technology support centre. (It could also simultaneously be used for any other office of the municipality depending on the needs.)
4. Support Women's groups and networks to visit demonstration unit/construction sites to observe and understand safe construction technologies and to supervise construction of houses in their settlements

Targets:

- Weekly Orientation is established and functioning in the target 3 municipalities;
- Building construction support center established in each of the target 3 municipalities
- 3 nos. of Building Construction Demonstration Units constructed in each municipality

Output 3: Pool of skilled human resources developed and enhanced to support the safer construction of both new buildings and existing damaged buildings in the target municipalities

Activities:

1. Train engineers and sub-engineers, both registered at the municipalities and from different government agencies based in the municipalities, on the provisions of building codes and their implementation;

2. Train masons (women and men) in municipalities on safe construction to ensure post-earthquake reconstruction do not rebuild risks and vulnerabilities and support creation of a roster of masons trained and certified;
3. Conduct training of trainers (TOT) for Mason's training for 30 trainers in each municipality to ensure the sustained skill supply at the local level in a long-run.

The project will support activities both on demand and supply side to ensure sustainability and opportunities for employment for trained masons through rostering of trained masons at the municipalities, (supply side), and making mandatory the engagement of trained masons in (re)construction to obtain building permits and creating awareness among communities and home builders on safer construction (demand side).

Targets:

- 30 engineers are trained in each municipality on NBC implementation (Total 90 Engineers);
- At least 30 masons are trained and certified in roster for safe building construction in each target municipality (total 90 Masons trained);
- Sustainability of future mason training and quality assurance of trained masons is promoted through Training of 30 Trainers for each municipality (Total 90 Trainers developed).

VIII. RESULTS AND RESOURCE FRAMEWORK (RRF)

Project title: Support to Implementation of National Building Code and Safer Building Construction in 3 Earthquake Affected Municipalities

Objective: Contribute to Nepal's overall earthquake recovery and longer-term Safer Building Construction effort.

Outcome: A conducive environment for safer building construction is created for the affected municipalities through improved access to knowledge and skills for the housing reconstruction for the local bodies, skilled persons and the people in the communities.

INTENDED OUTPUTS	OUTPUT TARGETS FOR 12 months (Jan 2016 to Dec 2016)	ACTIVITIES	RESPONSIBLE PARTY	INPUTS
Output 1: Fundamental institutional capacity of the target municipalities to effectively facilitate Code Compliance Building Permit System is strengthened and systems installed *Baseline: Of the 43 municipalities affected by the earthquake, only 13 municipalities have the code-compliant building permit system in place and they are all concentrated in Kathmandu Valley. None of the 3 targeted municipalities have systems to implement code-compliant building permit system* *Indicators:* # of municipality with code compliant permit system # of municipality with building by-laws integrated	Targets: - 3 municipalities install code compliant Building Permit System - 1 municipality updates building byelaws based on Risk Sensitive Land Use plan	1. Support municipalities to establish the processes for issuing code-compliant building permits. 2. Provide technical support to the building permit section engineer 3. Provide support to enforce code-compliance. 4. Support 1 municipality to develop Risk Sensitive Land Use Plan (RSLUP) for the municipality; update building bye-laws accordingly and integrate into building permit system	UNDP	**Technical Expertise for building permit system set up – 13,050** 4,350 x 3 months **Technical Support (Engineers) to municipalities – 36,000** 1,000 x 12 months x 3 municipalities **Technical Expertise for RSLUP and building bye-law integration – 21,000** 21,000 x 1 municipality **Logistic Support** (computers, printers, software, office equipment)- **64,500** 21,500 x 3 municipalities **Printing and Publications** (application forms, flyers, brochures)**– 6,000** 2,000 x 3 municipalities **Motorcycle for site visits/ inspections for code-compliance and enforcement – 6,000** 2,000 x 3 municipalities

				Technical Inputs- Senior Project Officer (Engineer)- <u>24,000</u> 2,000 x 12 months
Output 2: Increased awareness and demand-creation leading to the population having improved understanding and awareness of safer building construction in the target municipalities *Baseline*: *Awareness among the communities about existence of National Building Code has been increased post-earthquake, but actual understanding on its provisions and applying to constructions is minimal. Targeted municipalities do not have mechanisms to provide information to home builders on safe construction* *Indicators*: Established and functioning weekly orientation managed by municipalities # of established demonstration unit (future resource center)	Targets - Weekly Orientation is established and functioning in the target municipalities; - Building construction support center established in each of the target municipalities - 3 Building Construction Demonstration Unit in each municipality	1. Establish mechanisms for weekly orientations in the municipality 2. Establish a building construction support centre in each municipality 3. Support the construction of a technology demonstration unit/ building construction technology support centre. 4. Support Women's groups and networks active engagement in housing reconstruction	UNDP	**Orientation events- <u>7,500</u>** 2,500 x 3 municipalities **Building Construction Demonstration Unit- <u>43,200</u>** 4,800 x 3 units x 3 municipalities **Travel Costs** (for orientation of women's groups and to visit/ supervise housing reconstruction)**- <u>7,500</u>** 2,500 x 3 municipalities **Coordination- Project Assistant- <u>6,000</u>** 500 x 12 months
Output 3: Pool of skilled human resources developed/ enhanced to support the safer construction of both new buildings and existing damaged buildings in	Targets: - 30 engineers are trained in each municipality on NBC implementation;	1. Training of engineers and sub-engineers on building codes implementation; 2. Training of masons (women and men) in	UNDP	**Masons' training – <u>36,000</u>** 4,000 x 3 units x 3 municipalities

the target municipalities *Baseline: Masons in rural areas are largely self-trained; even the CTEVT curriculum till recently did not incorporate code-compliance. Engineers in municipalities have not yet been trained on code-compliant constructions.* *Indicators:* # of engineers trained for NBC implementation # of masons trained, certified and rostered for safer building construction (male/female disaggregated) # of mason trainers generated	- At least 90 masons who are trained and certified in roster for safe building construction in each target municipality; - Sustainability of future mason training and quality assurance of trained masons is promoted through Training of 30 Trainers for each municipality.	municipalities on safe construction and creation of a roster of trained masons; 3. Training of trainers (TOT) for Mason's training.		**Engineers' training – <u>9,000</u>** 3,000 x 1 units x 3 municipalities **Training of Trainers – <u>12,000</u>** 4,000 x 1 units x 3 municipalities **Logistics, Quality Assurance- <u>3,300</u>**

IX. ANNUAL WORK PLAN

Year: 2016

EXPECTED OUTPUTS	PLANNED ACTIVITIES	TIMEFRAME Jan 2016- Dec 2016				RESPONSIBLE PARTY	PLANNED BUDGET		
		Q1 2016	Q2 2016	Q3 2016	Q4 2016		Funding Source	Budget Description	Amount
Output 1 **Fundamental institutional capacity of the target municipalities to effectively facilitate Code Compliant Building Permit System is strengthened and systems installed**	1. Establish the processes in municipalities for issuing code-compliant building permits.	X	X	X	X	UNDP	Japan	Salaries, Consultancy Services, Equipment, Travel, publications, producing material	170,550
	2. Provide technical support to building permit section engineer technical support	X	X	X	X	UNDP	Japan		
	3. Provide support to enforce code-compliance.		X	X	X	UNDP	Japan		
	4. Provide technical support to formulate RSLUP, update building bye-laws and integrate into permit system	X	X	X		UNDP	Japan		
Output 2 **Increased awareness and demand-creation leading to the population having improved understanding and awareness of safer building construction in the target municipalities**	1. Establish weekly orientations in the municipality	X	X	X	X	UNDP	Japan	Salaries, Consultancy Services, Equipment, Travel, publications, producing material	64,200
	2. Establish Building construction support centre in each municipality	X	X	X	X	UNDP	Japan		
	3. Construct a technology demonstration unit/ building construction technology support centre	X	X	X	X	UNDP	Japan		
	4. Support Women's groups and networks active engagement in housing reconstruction	X	X	X	X	UNDP	Japan		
Output 3 **Pool of skilled human resources developed/ enhanced to support the safer construction of both new buildings and existing damaged buildings in the target municipalities**	1. Train engineers and sub-engineers on building codes implementation;	X	X			UNDP	Japan	Salaries, Consultancy Services, Equipment, Travel, publications, producing material	60,300
	2. Train masons (women and men) in municipalities on safe construction and create a roster of trained masons;	X	X	X	X	UNDP	Japan		
	3. Train the trainers for Mason's training.		X	X		UNDP	Japan		
TOTAL									$295,050
GMS (8%)									$23,604
GRAND TOTAL									**$318,654**

X. MANAGEMENT ARRANGEMENTS

The overall responsibility of management of this project lies with the Energy, Environment, Climate and Disaster Risk Management (EECDRM) Unit within the Nepal UNDP Country Office. The project would be implemented as part of the on-going Comprehensive Disaster Risk Management Programme (CDRMP) being implemented in Direct Implementation Modality (DIM). It has as its Project Executive the Deputy Country Director (Programme) of UNDP and the Project Executive Board (PEB) meetings are co-chaired by Joint Secretary, Disaster Management Division of the Ministry of Home Affairs.

Relevant ministries and agencies, viz., Ministry of Urban Development, Ministry of Federal Affairs and Local Development, National Planning Commission are its members.

The CDRMP is led by a National Programme Manager (currently the Technical Advisor- DRM is *a.i)* and the activities envisaged are implemented by the Project Officer (National Building Code and Risk Sensitive Land Use Planning) with advice and guidance from the Technical Advisor. The Admin and Finance team and Project Officer (M&E, Knowledge Management) of CDRMP are providing over all administrative and quality assurance inputs in the project. Besides, EECDRM Unit provides regular guidance and inputs for effective implementation of the project.

The proposed project will implement related activities taking advantage of on-going consultancy services with technical service providers, viz, Centre for Resilient Development (CORD) for building code implementation in Kathmandu Valley, and School for Shelter and Environment (SSE) for masons' training.

Financial arrangements

i) For any fund balances at the end of the project, UNDP shall consult with the Government of Japan on its use.

ii) The interest income should be treated in accordance with the Japan-UNDP agreement on Arrangement for the Interest Income derived from Japan-UNDP Partnership Fund.

XI. MONITORING FRAMEWORK AND EVALUATION

In accordance with the programming policies and procedures outlined in the UNDP User Guide, the project will be monitored through the following:

Within Annual Cycle

Project M&E Plan:

A comprehensive M&E Plan within the first month of the project (Jan 2016) will be prepared based on the project's RRF including baseline, targets/milestones and M&E tools/techniques.

Project Data Collection, Storage and Management:

Disaggregated data (by sex, ethnicity and by poverty class) on project activities will be collected to track the type of beneficiaries. The collected data will be analysed and integrated in quarterly progress report.

Results Tracker:

As per the template of UNDP CO Nepal, result tracker will be updated on quarterly basis to track the project targets and milestones.

Quarterly Progress:

A quarterly progress report (QPR) integrating both quantitative (progress Vs Plan on physical and financial targets) and narrative will be prepared within one month of the completed quarter.

Field level monitoring:

In order to ensure the project activities are implemented towards achieving the project's intended outcomes, field level monitoring will be carried out on regular basis. Field level monitoring will be done in a participatory way by involving the concerned stakeholders (MoFALD, MoUD, DUDBC, municipalities, communities). The learning from the field observation will be incorporated in the project cycle including timely feedback to implementing partners for effective implementation.

Progress Reviews:

Progress review meeting will be held between the project and key government partners to review the progress, expenditures and further quarterly planning. There will be at least monthly progress-planning review meetings among the project team under guidance of EECDRM Unit. Progress of the project will be integrated in CDRMP's quarterly and annual progress and shared with the PEB meetings for sharing and approval.

Tracking Outcome level results:

Towards the last quarter of the project i.e. around Jun-Jul 2016, a quick outcome survey will be carried out to track the project's results at outcome level (immediate outcome). This will be based on representative sample of the project beneficiaries. The results of the outcome survey will be shared with stakeholders and key findings will be included in the project completion report.

The annual progress report (APR):

APR will be prepared within one month of the project completion i.e. in Oct 2016. The APR will, at least, cover: (i) narratives of achievements on each outputs, (ii) financial progress against the planned budget by outputs, (iii) progress on gender equality and social inclusion (GESI), (iv) voices of the beneficiaries, and (v) key lesson and way forward.

Dissemination of project results/Knowledge Management:

Information, Education and Communication (IEC) materials related to the project outputs will be produced/printed and disseminated to the project beneficiaries and key stakeholders. Project briefing brochure at the commencement time and project completion report at the end will also be produced and disseminated.

Quality Management for Project Activity Results

OUTPUT 1:		
Activity Result 1 (Atlas Activity ID)	*Code Compliant Building Permit System established, operationalized*	Start Date: Jan 2016 End Date: Dec 2016
Purpose	*Code compliant building permit system adopted by the 3 municipalities (2 in Sindhupalchowk and 1 in Kavrepalanchowk districts).*	
Description	*Planned actions to produce the activity result include:* • Establish the processes in municipalities for issuing code-compliant building permits. • Provide technical support to building permit section engineer • Provide support to enforce code-compliance • Provide technical support to formulate RSLUP, update building bye-laws and integrate into permit system	

Quality Criteria *how/with what indicators the quality of the activity result will be measured?*	**Quality Method** *Means of verification. What method will be used to determine if quality criteria has been met?*	**Date of Assessment** *When will the assessment of quality be performed?*
Code-compliant building permit system is established in the 3 municipalities	Progress report Direct observation of the system in the municipalities	May & Sep 2016
No. of municipality Engineer of building permit section trained on operating the system	Progress report Consultation meeting/Interview with the trained engineer	Jun & Nov 2016
Equipment and accessories provided to the municipalities	Progress report Physical verification/observation	Jun & Nov 2016

OUTPUT 2:		
Activity Result 1 (Atlas Activity ID)	*Awareness among people on safer building construction increased*	Start Date: Jan 2016 End Date: Dec 2016
Purpose	*Awareness among people willing to construct buildings in the 3 municipalities on advantages of constructing earthquake safe buildings raised*	
Description	*Planned actions to produce the activity result include:* • Establish weekly orientations in the municipality • Establish Building construction support centre in each municipality • Construct a technology demonstration unit/ building construction technology support centre • Support Women's groups and networks active engagement in housing reconstruction	

Quality Criteria *how/with what indicators the quality of the activity result will be measured?*	**Quality Method** *Means of verification. What method will be used to determine if quality criteria has been met?*	**Date of Assessment** *When will the assessment of quality be performed?*
No. of local people oriented through weekly orientations	Progress report, records of orientation Direct observation of the system in	Apr, Jul, Sep, Dec 2016

	the municipalities	
Services/functions from Building Construction Support Centre	Progress report Observation of the centre, Consultation meeting/Interview with the centre's staff and beneficiaries	Jul & Nov 2016
No. and type of structures developed for demonstration	Progress report Physical verification/observation Consultation with beneficiaries/clients	Jul and Nov 2016
No. of women groups/networks active in EQ safe construction practices	Progress report, Consultation with women group/networks and beneficiaries	Apr, Jul, Oct 2016

OUTPUT 3:		
Activity Result 1 (Atlas Activity ID)	*Human resource capacity for safe building construction at municipal level increased*	Start Date: Jan 2016 End Date: Dec 2016
Purpose	*Capacity and skills of Engineers, Sub-engineers and masons involved in constructions enhanced on National Building Code implementation*	
Description	*Planned actions to produce the activity result include:* • Train engineers and sub-engineers on building codes implementation. • Train masons (women and men) in municipalities on safe construction and create a roster of trained masons • Train the trainers for Mason's training.	

Quality Criteria *how/with what indicators the quality of the activity result will be measured?*	**Quality Method** *Means of verification. What method will be used to determine if quality criteria has been met?*	**Date of Assessment** *When will the assessment of quality be performed?*
No. of Engineers/Sub-engineers trained on NBC implementation Usefulness/appropriateness of Course curriculum, trainers and practical classes adopted during the training	Progress report Observation of ongoing training Consultation/interviews with the trainees	May & Oct 2016
No. of masons trained on safe construction practices Contents and other sessions of the training Type of roster prepared and its use	Progress report Observation of ongoing trainings Consultations/interview with the trainees Review of roster formats, usefulness of roster for the municipalities, use of the roster by the municipalities	Feb, May, Jul, Sep, Nov 2016
No. of trainers (Engineers) trained on delivering Masons trainings	Progress report Observation of ongoing trainings Consultation/interview with the trainees	Jun & Aug 2016

Project Evaluation:

Owing to the one-year period of the project and its intended impact, project evaluation could be undertaken by UNDP in the second year i.e. 2017.

Targeted districts: Sindhupalchowk District (2 municipalities targeted), Kavrepalanchowk District (1 municipality targeted)