

Disaster Risk Reduction through implementation of Sendai Framework

Experiences and Lessons from Nepal

for

Global Platform on Disaster Risk Reduction

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**Ministry of Home Affairs
Disaster Management Division
Singh Durbar, Kathmandu, Nepal**

Reducing Disaster Risks: Multi-stakeholder engagement for formulation of National DRR Policy and Strategic Action Plan

In line with the Sendai Framework of Action

One major that will be addressed at the Global Platform in Mexico is the looming 2020 deadline for the Sendai Framework target to “substantially increase the number of countries with national and local disaster risk reduction strategies by 2020”. Asia, the world’s most disaster-prone region, has adopted a complete plan for implementation of the Sendai Framework, including a drive to have it available in national languages and to ensure that 40 percent of countries will already have national strategies in place by 2018.

[Story on Global Platform, UNISDR, 2017, www.unisdr.org]

The Context:

Nepal successfully implemented Hyogo Framework of Action (HFA) through development and implementation of National Strategy for Disaster Risk Management (NSDRM) 2009 and has committed for tangible contribution for implementation of Sendai Framework of Action (SFDRR 2015-2030). For SFDRR implementation, formulation of national DRR policy and strategic action plan was realized a pre-requisite.

The Process:

Government of Nepal, *the Ministry of Home Affairs*, has stepped up to translate the crux of the SFDRR 2015-2030 through involving all the DRR stakeholders including donors to develop National DRR Policy and Strategic Action Plan 2017-2030. The process initiated in late 2016, by MoHA with technical support from UNDP. The objective is to formulate National Disaster Risk Reduction Policy and Strategic Action Plan: 2017-2030 in line with Sendai Framework for Disaster Risk Reduction, by: (i) *taking into account lessons learned and gaps identified through the implementation of HFA 2005-2015 in general and that of National Strategy for Disaster Risk Management (NSDRM) 2009 specific to Nepal*, (ii) *internalizing the lessons learned from 2015 Gorkha earthquake and other recent disasters and* (iii) *adopting the global initiatives and commitment on Climate Change Adaptation and Sustainable Development Goals.*

Overall process is led by Ministry of Home Affairs with technical support from UNDP and support from other government institutions, donor communities, I/NGOs working in DRR. The secretariat support for consultations is being provided by Disaster Preparedness Network-Nepal. Wider consultative and participatory approach has been adopted to develop the policy and strategic action plan.

Six thematic groups namely (i) Productive: Agriculture, Food security and livelihood, (ii) Social: Education, Health, Nutrition, Water Supply, Sanitation and Hygiene, (iii) Infrastructure: Urban, Transportation, Irrigation, Infrastructure, Housing, Natural and Cultural Heritage, (iv) Environment and Natural Resources: Land use, Energy, Forest & Soil Conservation and Climate/ weather, (v) Cross-cutting: Gender issues, Social Inclusion, Governance, Disability, Children, Senior Citizen and (vi) Preparedness, Response, Recovery and Communication have been identified and concerned line ministries are leading the process with support from other stakeholders.



Achievements:

So far 2 sub-national and 7 district level consultation meetings have been successfully organized and reports of these meetings are finalized. Likewise, six thematic working groups have been set up and their kick-off meetings have completed. The content and the structure of the National DRR Policy and Strategic Action Plan has been approved by the Working Group. All consultation meetings and work of thematic groups are expected to complete by May 2017 and the draft report to be produced by June 2017.



Lessons Learnt:

- Although Government is the prime agency responsible for the safety and security to the people against any disaster, active participation of all the concerned agencies including donors is crucial in responding to disasters and hence their involvement from the beginning in the process is warranted.
- Involvement of concerned officials of the government at every step, for example, development of Terms of Reference of experts and facilitators, finalization of the content and structure of the document and design of methodological approach for data collection and analysis.

- Involvement of local stakeholders and at risk communities in the process of policy and strategic action plan formulation has provided evidence and real experience based inputs in the process. Moreover, it supported enhancing ownership of the policy and strategic actions by the local stakeholders who have direct role in disaster preparedness and response.
- Joint team of experts from the Government, UN Agencies, International and national institutions, and donor representatives engaged in thematic consultation process has been productive.

Links for Further Info:

www.moha.gov.np

Preparing for disasters: Nepal's experience

Emergency Operation Centers (EOCs) being effective in gathering and disseminating disaster information

Context:

As part of implementation of HFA in general and Nepal's NSDRM 2009 specifically, joint effort of GoN, UNDP and other agencies resulted into establishment of National Emergency Operation Center (NEOC) within the premises of the Ministry of Home Affairs in Kathmandu in Dec 2010. With this milestone, extended need was realized to best utilize the NEOC through creating national network of EOCs across the country for improved and effective disaster information management and coordination.

Process

The Ministry of Home Affairs with technical support from UNDP has established a network of EOCs coordinated by the National Emergency Operation Center (NEOC) in Kathmandu. All the EOCs are equipped with radio communication system and staff are trained on disaster information management.

Achievement:

National Emergency Operations Centre (NEOC), housed within the Ministry of Home Affairs in Kathmandu acts as a central hub of 56 EOCs (1 national – NEOC, 49 districts – DEOCs, 5 regional – REOCs and 1 municipal – MEOC). The NEOC is equipped with emergency communication systems connected to the rest of the EOCs and linked to Disaster Risk Reduction (DRR) Portal and flood early warning systems established in major river basins in Nepal. The NEOC and



the EOCs also maintain disaster information system useful for emergency preparedness for response and provides coordination support to the District Relief Committees during the time of disaster. Role of NEOC during Gorkha Earthquake 2015 was very crucial in collecting and communication disaster loss and damage information when all other communication systems were down for initial few hours. The satellite based radio communication system installed in EOCs was operational, and was the only means of communication between the affected districts and with the Ministry of Home Affairs for the first few hours..

Critical decisions and activation of response measures were taken under seven hours of the stipulated response time, indicating that NEOC and Central Natural Disaster Relief Committee (CNDRC) performed their coordination functions well within the timeframe during the first critical hours. Subsequent CNDRC meetings, held regularly on 27 April, 30 April, 3 May, 10 May and 12 May, focused on plans for effective search, rescue and relief related activities such as transit shelters, facilitation of entry of humanitarian assistance into the country and customs clearance procedures. [PDNA Vol II, p 274]



Towards ensuring access of at-risk communities over the disaster information, some of EOCs have already been linked with community based early warning system and effort is at expansion to cover the national network.



Lessons Learnt:

- As the capacities of EOCs are still being strengthened at district level; , further support from relevant agencies are needed. While the role of DEOCs in communicating disaster information in the immediate aftermath of the earthquake was well appreciated, their performance as coordination hub was found inadequate, except the NEOC.
- Maintaining uniformity of the EOCs functions and operations requires strong support from the government and partners with respect to deployment of human resources on long term basis and building their capacities

- Partnerships and collaboration with stakeholders are pre-requisites for ensuring sustainability of EOC Network.
- Given Nepal's vulnerability to multi-hazards, EOCs network needs to be expanded to cover all 75 districts.

Links for Further Info:

www.moha.gov.np, www.drrportal.gov.np

Suggested Article:

'Emergency centers' pay off for real time updates, coordination for improved disaster risk management system

In the chaos of the earthquake in Nepal, whose epicenter was in the rural Gorkha district, small Emergency Operations Centres (EOCs) are believed to have played a pivotal role in responding to the disaster.

<http://www.np.undp.org/content/nepal/en/home/presscenter/articles/2015/04/29/nepal-s-emergency-centres-pay-off-for-real-time-updates-coordination.html>

Reducing Disaster Risk: Nepal's experience

Community based Early Warning System for last mile connectivity

Remaining committed to Sendai Framework for Disaster Risk Reduction (SFDRR), Nepal has geared up its efforts that ensures reduction in loss of lives and livelihood from disasters. Building upon the experience and learning from implementation of Hyogo Framework of Action (HFA) for DRR, the 4 priority actions of SFDRR are being integrated into development planning in Nepal. More specifically, Nepal has achieved great success in its work on setting up Early Warning System and developing capacities for disaster preparedness for effective response and to <Build Back Better> recovery, rehabilitation and reconstruction". Basic level early warning system has been established in major river systems based on the risk assessment and feasibility study for establishment of community based early warning system.

Context:

In Nepal's mountainous terrain, downstream communities are always at risk from different hazards. Casualties and damages can be avoided only if the communities get accurate and advance information about the occurrence of a disaster. Considering the situation, establishment of community based Early Warning System (CBEWS) has been initiated by the Government of Nepal with other supporting agencies/institutions.



Process:

Community based Early Warning System (CBEWS) has been installed under technical guidance from the Department of Hydrology and Meteorology (DHM). A feasibility study had been carried out to find out the technical requirements of the system. Preparation of Terms of Reference (ToR) for the system as well as experts, procurement of equipment, installation of the equipment followed by training to the equipment readers were carried out under close guidance of the DHM.

Achievement:

Tsho Rolpa Glacial Lake is among the six most dangerous glacial lakes in Nepal, with estimated large number of people who are at risk when the lake outbursts. The Department of Hydrology and Meteorology with technical support from UNDP has established CB EWS at the downstream of Tsho Rolpa Glacial Lake. After identifying the threshold



value for CBEWS, six precipitation stations (at Rikhu, Lamabagar, Chankhu, Gongar, Singati and Beding), five hydrological stations (at Gongar, Lamabagar, Beding, Naa and Tsho Rolpa Lake) and one Automatic Weather Station at Tsho Rolpa Lake were established. Two EWS displays with siren (at Gongar Police Station and Charikot District Emergency Operation Centre-DEOC) have also installed to link the system with NEOC and DHM's online systems. For robust ownership by the local communities, a district level mock drill was conducted to orient the participants about the Tsho Rolpa EWS, and practice on the verified communication channel through mock drills. The system is benefitting about 4,245 people (801 HHs) from Singati (downstream) to Na village (upstream) in the region.

Lessons Learnt:

- Risk assessment and threshold value calculation were helpful for procurement of equipment of required specifications and to increase the efficiency of the system.
- Involvement of local communities, private sector and district stakeholders (DDRC) was supportive for successful completion of the work.

Links for Further Info:

Department of Hydrology and Meteorology – www.dhm.gov.np

Disaster Risk Reduction through safer building construction: Nepal's experience

Electronic-Building Permit System (e-BPS) - An e-Governance Initiative Leading to Resilient Construction

Electronic-Building Permit System is a web-based application software suite which has been developed to assist municipalities to improve their current building permit process and to maintain current building records. This is an effective, transparent and efficient system to monitor, evaluate and ensure safer building constructions in a municipal area. E-BPS is a distributed system that can be accessed from both municipal head offices as well as their respective ward offices. The system also allows the citizen to submit as well as track their application(s) and its status respectively over the internet. UNDP pioneered this initiative and developed the system, which is now adopted by three municipalities: Kathmandu Metropolitan City (KMC), Lalitpur Metropolitan City (LMC earlier Lalitpur Sub-Metropolitan City) and Kirtipur Municipality in Kathmandu Valley.



Context:

Kathmandu Metropolitan City and other municipalities were struggling with a lengthy process of issuing building permit through a paper-based manual system, which took numerous days to be approved through each table, while people had to wait long time for an approval that also raised questions on governance/transparency of the system and the institution. Various consultations between UNDP and KMC and concerned authorities/GoN officials were undertaken to develop and pilot e-BPS in KMC, which was successfully implemented in all 35 wards and expanded to Lalitpur and Kirtipur Municipality as well.

Process:

E-BPS was devised by UNDP/CDRMP in close coordination and collaboration with technical team in KMC and LMC. It was piloted in KMC and LMC, and during this time archival of 15,000 existing building stock in KMC and LMC was completed using the system. The electronic building permit system was launched in Kathmandu by Honorable Deputy Prime Minister Mr. Kamal Thapa through a workshop organized jointly by KMC and UNDP

on 06 Dec 2015. Over 100 participants from municipalities, ministries, UNDP, DFID, development partners, media, professionals and GoN line agencies attended the launching ceremony.



Chief Guest DPM Thapa launched with a Certificate printing

Achievement:

Nepal ranks second in ease of doing business in SAsia

Nepal's ranking improved this year largely because it simplified the process of acquiring construction permits.

"Nepal made dealing with construction permits easier by implementing a new electronic building permit system," says the report, referring to the Electronic-Building Permit System introduced by Kathmandu Metropolitan City, which allows submission of building permits, all design plans and other relevant documents online.

A part of the news article in "The Himalayan" dated 30 Oct 2014.

Initially, e-BPS was implemented in 14 of the 35 wards of KMC with support from the project. In the public notice issued on 6th July 2016, KMC had announced full-fledged implementation of e-BPS in all 35 wards commencing from 16 July 2016.

E-BPS is currently being implemented by Kathmandu Metropolitan City, Lalitpur Metropolitan City and Kirtipur Municipality in Kathmandu Valley for promoting earthquake safe building construction practices, which also ensures better governance through streamlined building approval process. It was recognized and attributed as a key reason for Nepal's rise in overall rankings to second place in South Asia, and improvement by 35

places on dealing with construction permits globally¹. This system ensures the engagement of qualified professionals (civil/ structural engineers, architects) in designing the buildings, and complete adherence of the building designs and plans with provisions of the National Building Code and Building Bye-laws. It also enhances transparency in the approval process and reduces the time needed for issuance of permits, there-by encouraging prospective builders to come

¹ World Bank. 2014. Doing Business 2015: *Going Beyond Efficiency*. Washington, DC: World Bank. DOI: 10.1596/978-1-4648-0351-2. License: Creative Commons Attribution CC BY 3.0 IGO. p.p-43

through the formal system. The 3-step permit process at three critical stages of construction (DPC, super-structure and completion) also ensures that there is at least one or two site inspection to verify compliance during actual construction. This process however could be further strengthened within the municipalities to ensure 100% compliance on site.

Lessons Learnt:

- The success of e-BPS has laid the foundation for developing a Reconstruction Information Management System (RIMS) for MOUD/ DUDBC which will be a unique, dynamic reconstruction information portal for reconstruction in Nepal.
- The implementation of e BPS has become even more effective after the earthquake and there has already been a huge demand for integrating the entire building inventory of KV in e BPS. e-BPS has become an integral part of KMC and discussions are on-going for its integration in KMC's Municipal Administration and Revenue System (MARS) supported by ADB.

Links for Further Info:

www.kmcebbs.gov.np

Disaster Risk Reduction: Nepal's Experiences

Reducing GLOF risks together lowering water level of Imja Glacial lake in Khumbu region of Nepal

Context/Need:

Nepal, ranked at fourth from the risks of changing climate, is vulnerable to different climatic and non-climatic hazards. The country's average temperature is increasing at an annual rate of about 0.04° C and the trend is much higher in the mountain region. This contributes to glacial retreat and expansion of lakes, thus increasing the Glacial Lake Outburst Flood (GLOF) risks. Out of 1466 glacial lakes in Nepal, 21 glacial lakes



are considered to be potentially dangerous, out of which six are under very high risk category. Located at an altitude of 5010 meters on the lap of Everest, Imja was among six glacial lakes at most immediate risk of bursting. The potential risks of outburst of this glacier, spread over an area of 1.28 m² with an average 148.9 m depth, had long threatened the livelihoods of thousands of downstream communities in the Sagarmatha National Park and its Buffer Zone. Since the lake is located in a World Heritage Site and a major tourist destination, it has been posing a serious GLOF threat, making thousands of downstream communities, tourists and porters vulnerable.

Process:

A special Nepal Army team was deployed by the Government of Nepal under the auspices of the Community Based Flood and Glacial Lake Outburst Risk Reduction Project (CFGORRP) – a joint undertaking of the Government of Nepal, Global Environment Facility (GEF) for lowering the water level of Imja glacial lake.

Achievement:

The Nepal Army team with support from CFGORRP successfully constructed the controlled drainage system in Imja in just six months. An open channel with a design discharge capacity of 15 cumecs has been constructed to drain the water from the lake and the lake level was reduced by 3.4 meter. The lowering of Imja is one of the most technically challenging climate change adaptation projects undertaken at the highest altitude and this has significantly

reduced the potential GLOF risk in the downstream. The lake lowering works was formally inaugurated on November 23, 2016 by the Ministers of Defense and Population and Environment during a special function at Imja.



An automated GLOF early warning systems has been operationalized in Imja Lake and its periphery that allows the Department of Hydrology and Meteorology (DHM) to receive data through its web portal in order to communicate GLOF risk warnings to the National Emergency Operation Center (NEOC) and local communities. Operationalization of automated EWS in six prime locations including 18 CBEWS downstream of Imja has enabled local communities to get GLOF risk warnings with sufficient lead time in case of a disaster.

For improving people's knowledge on on GLOF risk management, project prioritized the radio program and public service announcements through local FM in local languages along with production and distribution of IEC materials. With all these structures and mechanisms in place, project expects that an estimate of 87,682 locals including tourists and porters (annual floating population) will be benefitted in long run. The entire Everest region, one of the most popular tourist destinations, has benefited from the risk reduction intervention at the Imja glacier.

Lessons Learnt:

- The current Imja Lake lowering work has set a national and global milestone in adaptation works. It also showcases that collaborative works between the Government, Nepal Army and UNDP/GEF can bring a change.
- Sharing the project's goal and learning from similar works (of Tsho Rolpa GLOF in Nepal and that in Bhutan) were quite helpful during the execution of project activities. Proper safety and security for the implementation team were followed to avoid any loss and damages during the implementation.
- Engagement of NA in lake lowering initiatives is expected to build the national capacity in dealing with such technically challenging tasks across the country. The knowledge and skills gained by ED/NA will be useful in GLOF risk reduction of other high risk lakes.

Links for Further Info:

Project Website: <http://cfgorpp.dhm.gov.np/>

Article: REACHING NEW HEIGHTS IN NEPAL: CLIMATE ACTION AT IMJA GLACIER

<https://undpnepal.exposure.co/reaching-new-heights-in-nepal-climate-action-at-imja-the-himalayan-glacier>

Reducing disaster risks: Nepal's experience

Integration of Climate Change Adaptation (CCA) and DRR initiatives for enhancing local communities' resilience

Nepal is implementing the priority actions of SFDRR and one of the major intervention is promoting community based DRR. Capacities of local communities and their networks/ institutions and local actors – human resources are being strengthened through a concerted effort by the Government of Nepal and other DRR stakeholders.

Context:

Community Based DRR is being promoted in the country through different initiatives and modalities. Local and Community based Disaster Risk Management Plans (L/CBDRMPs) are owned and implemented by the respective Local Disaster Risk Management Committees with support from different development actors. District Disaster Preparedness and Response Plan (DPRP) prepared in all the 75 districts and District Disaster Management Plans (DDMPs)

in some 25 districts also provide guidance to promote CB DRR at district and local levels.



Local communities are the target groups that are vulnerable from disaster risk which are being complex due to the changing climate. Climate Change Adaptation initiatives and DRR initiatives are being practiced by different development actors. Ministry of Federal Affairs and Local Development (MoFALD) has been leading the process for promoting community based disaster risk reduction/management in the

country whereas the Ministry of Population and Environment is leading the process of climate change adaptation. Both DRR and CCA adaptation initiatives are guided by the respective policy, guidelines and implementation strategies. Due to common interface in many ways, integration of these two has been realized a need to increase the synergy in development results.

UNDP in coordination with MoHA, MoFALD, DHM and other agencies has piloted integration of DRR and CCA initiatives in Maadi valley of Chitwan district. Communities of Maadi are at high risks from flash floods from Riu-river and other risks such as damage/destruction from wild animals and other climatic risks.

Process:

Integrated Watershed Management approach was followed to assess the risks posed to the local communities, potentialities and opportunities and need to be addressed. Four Local Disaster Risk Management Committees were involved in the process of development of Integrated Watershed Management Plan which was endorsed by the local authority. DRR and CCA activities were integrated and categorized into three categories: livelihood promotion, community small infrastructures development/restoration and bio-engineering techniques. Capacities of committee members and other beneficiaries were enhanced through different technical and social trainings and exposures including Search and Rescue, First Aid, Climate resilience agriculture, CBEWS and so on.

Achievement:

Direct and indirect beneficiaries through project activities include over 8,000 families of Maadi.

Livelihood options have been diversified through different income generating activities followed by trainings to the beneficiaries in order to ensure continuity of the initiatives in a sustainable manner. Fishery initiated by local Tharus has replaced



the traditional paddy farming and incomes seem to be manifold. Promotion of different varieties of crops and vegetables that are climate resilient seem to impact on long term towards increased resilience of the communities.

Small infrastructures support such as irrigation canal, drinking water supply schemes, conservation ponds are supportive towards increasing communities' capacities to cope with the risks.



Conservation of wetlands and promotion of plantation and bioengineering techniques have contributed for all CC Adaptation,

Mitigation and DRR.

Lessons Learnt:

- Integrated Watershed Management approach has been more convincing tool to integrate DRR and CCA activities together.
- Involvement of local communities and local DRR stakeholders was key to the success of the interventions.
- Participation of local communities can be ensured through the interventions which can ensure the communities' benefits addressing immediate, short term and long term need.
- Empowering local communities with livelihood promoting options was key to make them active participants rather than beneficiaries.
- Empowering local institutions and linking them with local government institutions and stakeholders ensure long term impact and sustainability of the interventions.

Links for Further Info:

www.np.undp.org/cdrmp



Women masons training Mahakal VDC-Nov 2014

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