



Government of Nepal  
Ministry of Federal Affairs and General Administration



## Needs and Capacity Assessment of Fourteen Rural and Urban Municipalities on Disaster Risk Reduction and Management in Nepal

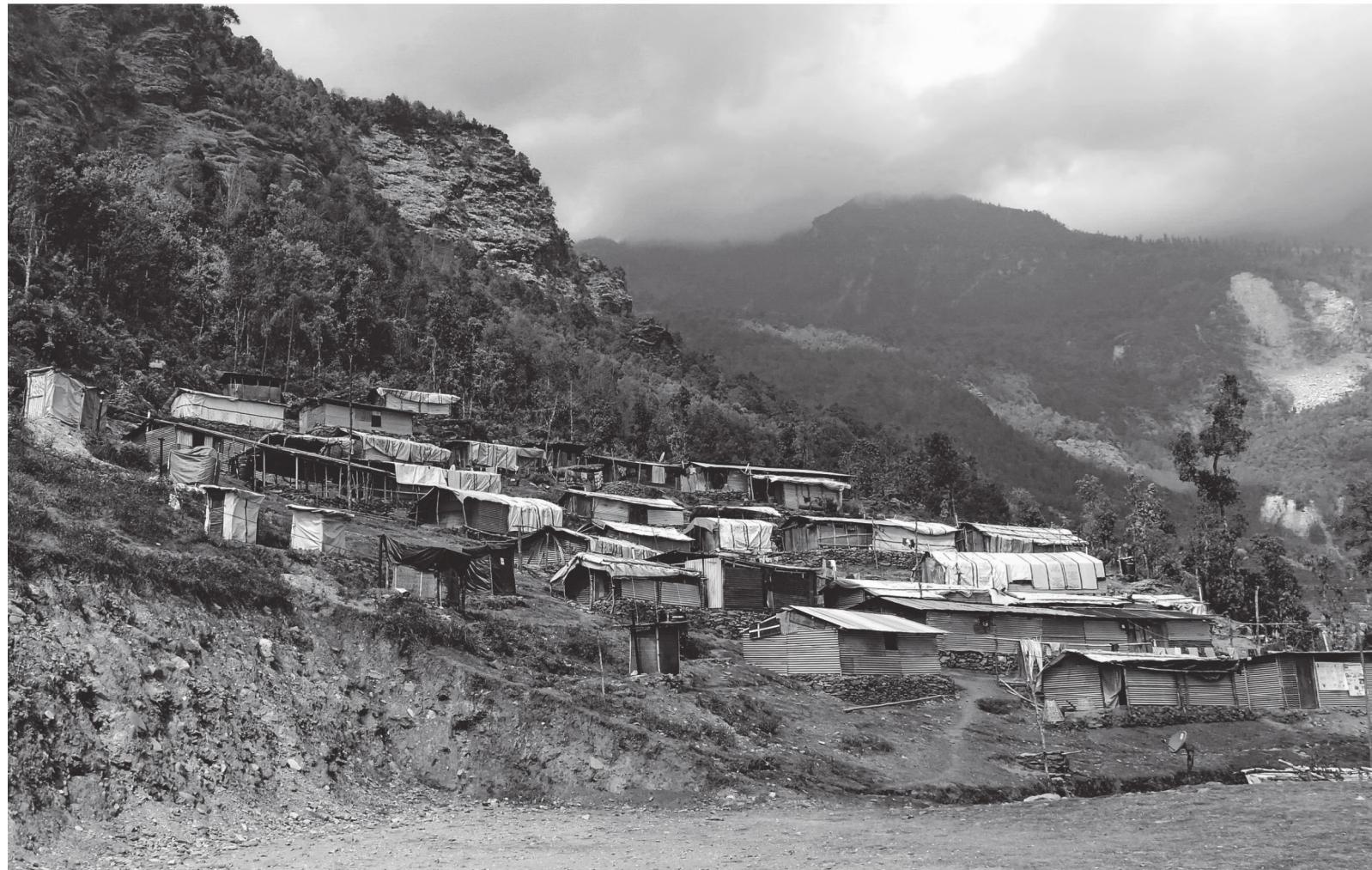
*Opportunities for Building Capacities of Municipal Governments for  
Disaster Risk Reduction and Management*

*May 2019*





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Government of Nepal  
Ministry of Federal Affairs & General Administration  
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### Foreword

Nepal is prone to a multitude of natural hazards. Due to the rugged and fragile geophysical structure, high peaks, high angle of slopes, variable climatic conditions, unplanned urbanizations, weak economic conditions, active tectonic process, the country's exposure to natural hazards often turn into disasters claiming lives and destroying property. Over the past decades, the frequency of disasters in the country has increased, enlisting the country among the 20 most disaster prone country in the world.

The Constitution of Nepal has set the course for a major shift of power from the Federal to the Provincial and Local levels of government. Disaster management is on the concurrent list for all three jurisdictions and is mentioned as functions, duties, and powers of local jurisdictions. The Disaster Risk Reduction and Management (DRRM) Act and the Local Government Operation Act (LGOA), 2017 have included a comprehensive list of disaster management actions for the local governments, making them primarily responsible for preparedness and early response. The Government of Nepal has also set the target to achieve priority 2 and target (e) of Sendai Framework by the year 2020 which focuses on increasing the number of countries with National and local Disaster Risk Reduction (DRR) strategies by 2020.

In an attempt to support the Government's vision to address the national and international commitment, it gives me immense pleasure to present this report on 'Needs and Capacity Assessment of Selected Fourteen Rural and Urban Municipalities on DRRM in Nepal, 2019'. This report is a part of the Ministry of Federal Affairs and General Administration's (MoFAGA) effort to support the local governments in capacity building and institutional strengthening in relation to Disaster Risk Reduction and Management as local levels are the pillars to achieve the target of resilient Nepal. The report documents, key findings and gaps identified in the selected 14 local governments across seven provinces while carrying out their needs and capacity assessment. It also provides an opportunity to understand the needs and capacity of the local governments in relation to the implementation of DRRM Act 2017 in line with the provisions of the Constitution of Nepal.

I am hopeful that this report will be useful for the government and non-government agencies, researchers, policy makers and students to understand the present context of local levels. Furthermore, I believe that this report will also be useful in guiding the future course of action including the preparation of comprehensive training module on DRRM in order to enhance resilience of the local levels. I take this opportunity to thank all the selected fourteen local governments for providing necessary data and details presented in this report. I would like to highly acknowledge the efforts made by the staff members of the Environment and Disaster Management Section especially Undersecretary Mr. Rishi Raj Acharya for their time and efforts in publishing this report. Similarly, I would like to thank IOM – UN Migration Agency and its team for initiating the research and technically supporting the Ministry which has strengthened collaborative partnership further. I also would like to thank the Consultant/DRM Expert Mr. Anil Pokhrel for conceptualizing the research methodology and compiling information and authoring this report.

This report is a collaborative effort between the Government of Nepal and the International Organization for Migration (IOM-UN Migration).

Thank you.

Yadav Prashad Koirala  
Secretary

# Executive Summary

Nepal's 2015 constitution set the course for a major shift of power from the Federal to the Provincial and Municipal levels of government. The constitution places the responsibility for 'Disaster Management' with local governments. Disaster management is also on the concurrent list for all three jurisdictions and 'early preparedness for rescue, relief and rehabilitation' is on the concurrent list for federal and state jurisdictions. The Disaster Risk Reduction and Management (DRRM) Act, 2017 and the Local Government Operation Act (LGOA), 2017 include a comprehensive list of disaster management actions for local governments. The DRRM Act integrates all key components of disaster risk reduction and management including measures for risk assessment, investments for risk reduction, strengthening disaster risk governance, preparedness for effective response, recovery, rehabilitation and reconstruction.

The municipal governments recognize the significance of DRRM as they are often at the forefront of disaster response and recovery. Municipalities affected by the 2015 earthquakes and 2017 floods are more active compared to the ones not affected by recent disaster events. Further, all 753 local governments require preparing their Municipal act, policy and action plan for DRRM in addition to numerous other local acts, policies and operational guidelines. The municipal elected representatives and the staff often have a limited understanding on DRRM concepts, technical capacities and finances to undertake disaster risk reduction actions. It is timely and important to consider the municipal governments' capacities and responsibilities to help operationalize the DRRM Act, 2017.

The International Organization for Migration (IOM) - UN Migration Agency carried out an assessment to analyse and assess existing strength, capacity, resources and understanding of elected representatives and staff of municipal governments to operationalize DRRM Act, 2017. This study aims to provide an overview of needs and capacities at the municipal level in the context of new legislative changes in Nepal and for the implementation of the National Strategic Action Plan for DRRM 2018-2030.

A total of fourteen municipalities in all seven provinces of Nepal were assessed, making it an extensive analysis and is first of such assessment done on DRRM in Nepal. The municipal capacity assessment methodology and process serves as an example to scale up in other remaining municipalities. Assessed, in detail, are four areas of needs and capacities, responsibility for local governments to DRRM actions.

- a) Knowledge on the concepts of DRRM and disaster risk legislations at municipal level;
- b) Understanding of disaster risk, economic and well-being losses;
- c) Promotion of public and private investment for resilient development; and
- d) Enhancing disaster preparedness for effective response, recovery, reconstruction using 'build back better' techniques;

## **A. Knowledge on the Concepts of DRRM and Disaster Risk Legislations at the Municipal Level**

### **A.1 Findings from the assessment**

- There is limited understanding among elected leaders and municipal staff on comprehensive DRRM and the legislative changes that has taken place in the recent 2-3 years. Exceptions such as Biratnagar (Province 1) and Dhangadhi (Province 7) where understanding exists better compared to other municipalities.

- Only two out of fourteen municipalities assessed have developed their local DRRM Act.
- Only two municipalities have prepared their Disaster Management Fund Operational Guideline. A few have started their preparation process while the remaining are unaware.
- Review of recently endorsed municipal legislative documents –such as the local DRRM Act and the DM Fund Operational Guideline– have shown that there have been missed opportunity in helping municipalities make them effective and reflective of the municipal risk levels. Endorsed act and guidelines are exact copies of the sample act and guideline prepared and shared by the Ministry of Federal Affairs and General Administration. In the absence of a comprehensive understanding of DRRM, the municipal Disaster Management Fund Operational Guideline, prepared on the basis of the national guideline for Disaster Management Fund Guideline Sample (approved by MoFAGA) does not include provisions for utilizing funds for risk reduction or recovery activities. Existing provisions are only meant for disaster response.
- Only a few municipalities have formulated their Municipal DRRM Committees including Ward Level Committees and have set up their DRRM Fund. None of the municipalities have prepared their DRRM Policy, DRRM Strategic Action Plan or integrated disaster risk considerations into sectoral plans.
- There are no established coordinating systems and platform for DRRM among the municipal, private sector, I/NGOs.
- Most urban municipalities have systems or are in the process of enforcing seismic building code. However, none of the municipalities have code and or regulation for flood risks and other hazards such as lightening, fire and wind storms.
- Municipal governments are swamped in drafting and endorsing various local laws, policies and regulations. Drafting and endorsing DRRM laws and plans are behind sectoral and other operational priorities.
- Disasters transcend municipal boundaries and often their hazards including risk reduction measures are effective in upstream and or neighbouring municipalities requiring collaboration and joint action between municipalities that are least understood.
- Only few municipal staff – such as the DRRM focal person in urban municipalities – have received training(s) on DRRM.

#### **A.2 Opportunities: Supporting the Municipal Governments for a Comprehensive Understanding of DRRM, Legislative Changes and in the Preparation of Municipal Disaster Risk Legislations**

- It is a ‘Moment of maximum opportunity’ (MOMO) to build capacity of elected municipal leaders and municipal staff to design and implement robust local DRRM Act, policies and plans including integration of disaster risk into respective sectoral development plans.
- The ‘model municipal law’ and the ‘DM fund guideline’ approach has helped some municipalities to quickly draft and endorse their laws. However, these legislative documents have been prepared without a clear understanding of the local risks. It is timely to orient the municipal governments on legislative changes and on a comprehensive understanding of disaster risks.
- Orientation on the roles and responsibilities of federal, provincial and municipal governments including ‘horizontal and vertical collaboration’ and joint DRRM actions among different development sectors, multiple municipalities and with provincial and federal agencies.
- Orientation on planned engagement and coordination with neighbouring municipalities as well as with the provincial government and federal ministries and departments.

## B. Understanding of Disaster Risk, Economic and Well-being Losses

### B.1 Findings from the assessment

- There is no disaster risk information available in any of the fourteen municipalities assessed. Except for Birendranagar Municipality, none of the municipalities have undertaken municipal level hazard assessment. Exposure and vulnerability information are not available. There has been no past effort in assessing multi-hazard risk, their probable economic and well-being losses.
- The concept of 'risk assessment' and Risk Sensitive Land Use Planning (RSLUP) is like *déjà vu* to all municipalities. Interestingly, risk assessments have not been undertaken even in high earthquake and flood risk municipalities (such as Bhimeshwor or Gulariya). Hazard assessment for some wards have been completed (an example from Neelakantha), but results are not available within the municipality for subsequent update or use for sectoral assessments.
- Disaggregated data on gender, caste, persons with disabilities (PWDs), elderly and children exists in all municipalities. However, there is limited practice and knowledge in integrating them into development planning including DRRM.
- In three municipalities, it was observed that families were displaced due to disasters. In the case of landslide and flood related disasters, measures were taken to resettle households within the community. However, in case of drying of water sources, families have tendency to go for seasonal migration or when the situation further degrades, families are displaced permanently. It was observed that there are no systems to track seasonal and permanent displacements induced by disasters.
- None of the municipalities have systems to screen or to assess disaster risk for their sectoral investments.
- With an exception of Dhangadhi and Gulariya there is limited evidence of municipal engagements with the most at-risk vulnerable populations.
- Budgetary allocations for building disaster resilience into sectoral development plans are none existent. Budget for risk reduction and disaster response is inadequate.
- No system to record and share documents related to DRRM to the public including updating information in the municipal websites.

### B.2 Opportunities: Supporting the Municipal Governments for improving understanding on the need of disaster risk information and communication

- Orientation to the municipal governments on the need of disaster risk information that includes hazard, exposure and vulnerability.
- Sharing of best practices for undertaking risk assessment to serve the purpose of the municipality in making decisions.
- Training on integrating gender and social inclusion issues such as needs of PWDs, elderly, children and the poorest in understanding risk, actual risk reduction, legislations, response and recovery.
- Establishing disaster risk communication system that is understood in languages by the decision makers such as Mayors, Ward Chairperson and municipal sectoral staff using scenarios, economic damage and losses.
- Use of municipal websites and other media such as radio, physical boards, newspapers to communicate risks.
- Using risk information including findings from risk screening and assessment for making decisions to make sectoral investments resilient.

- Training and orientation on the integration of social inclusion issues including gender, PWDs need of elderly and children, and the poorest in DRRM and in sectoral planning .
- Orientation on the trend of disaster related displacement and establishing systems to track and understand disaster displacements.

## C. Promotion of Public and Private Investment for Resilient Development

### C.1 Findings from the assessment

- In the absence of risk information and comprehensive understanding of disaster risks, budgetary allocation on DRRM has been focused mainly on setting up of Disaster Response funds.
- Though budgetary allocation for fiscal year 2018-2019 shows an increased allocation compared to the fiscal year 2017-2018, budgeting for risk reduction including disaster response is done on an *ad hoc* basis.
- There are no systems to track budgetary allocation for DRRM in sectoral development projects.
- There has been no scoping of joint DRRM work with the private sector at the municipal levels.

### C.2 Opportunities: Promotion of Public and Private Investment for Resilient Development

- Scoping of examples on local resource generation for risk reduction at municipal levels.
- Sharing of best-case examples of joint actions with private sector for risk reduction and building resilience.
- Orientation on various disaster risk reduction examples along with risk transfer instruments and early warning systems.

## D. Enhancing Disaster Preparedness for Effective Response, Recovery, and Reconstruction using 'build back better' Techniques.

### D.1 Findings from the assessment

- Knowledge and capacity among municipal government is better on relief and rescue operations compared to risk reduction and understanding risk. However, this is mainly limited to emergency personnel (such as staff within NRCS) and the security forces (Armed Police Force, Nepal Army and Nepal Police). These institutions are well-equipped to handle emergencies, based on the country's prior experience with large scale relief operations during the 2015 earthquake and the 2017 floods.
- The situation of the assessed earthquake affected municipality is different in terms of recovery and reconstruction.

For example, in the case of Bhimeshwor Municipality, there are rigorous 'physical inspections' for owner built private houses ('shelters'). Private buildings not meeting the criteria are not provided with subsequent tranches of grant funding.

- None of the municipality have systems to track and record disaster damage and loss data. Exceptions are a couple municipalities where there is provision of hard copy registers maintained and manual entries done.
- Emergency response is ad-hoc, budget any allocation not guided by levels of risk, is flat-for-all-wards.
- Open spaces, camp coordination and camp management, evacuation routes planning and marking are non-existent in all municipalities with an exception of Baglung and Neelakantha municipalities.
- Training and positioning of Light Search and Rescue teams non-existent.

**D.2 Opportunities: Enhancing Disaster Preparedness for Effective Response, Recovery, and Reconstruction using 'build back better' techniques.**

- Training on the needs of establishing municipal disaster damage and loss data systems.
- Municipalities have requested the need for organizing simulations for key disaster risks to identify capacities, gaps and needs for hazard specific response.
- Orienting the use of disaster information management systems for disaster response .
- Trainings and awareness raising on fire-fighting and other disaster response.
- Orientation on the role of federal, provincial and municipal government on preparedness for response .

The report is divided into four chapters. The first chapter provides an introduction of the assessment including the criteria of selecting fourteen municipalities. Second chapter describes the methodology of the assessment. Chapter 3 includes the findings from each municipal assessment. The fourth and final chapter provides conclusions and recommendations.

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## LIST OF ABBREVIATIONS

ADB	Asian Development Bank
DAO	District Administration Office
DP	Development Partner
DPRP	Disaster Preparedness and Response Plan
DM	Disaster Management
DDMC	District Disaster Management Committee
DIMS	Disaster Management Information System
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DRRM	Disaster Risk Reduction and Management
DRRMA	Disaster Risk Reduction and Management Act, 2017
EWS	Early Warning System
FNCCI	Federation of Nepalese Chambers of Commerce and Industries
GIS	Geographical Information System
INGO	International Non-Governmental Organizations
IOM	International Organization for Migration
LGOA	Local Government Operation Act
LDMC	Local Disaster Management Committee
MoF	Ministry of Finance
MoFAGA	Ministry of Federal Affairs and General Administration
MoFSC	Ministry of Forest and Soil Conservation
MoHA	Ministry of Home Affairs
MoFE	Ministry of Forests and Environment
MoUD	Ministry of Urban Development
NGO	Non-Governmental Organizations
NRA	National Reconstruction Authority
NRCS	Nepal Red Cross Society
NPC	National Planning Commission
NPR	Nepali Rupees
NSET	National Society for Earthquake Technology-Nepal
PPE	Personal Protective Equipment
PDMC	Provincial Disaster Management Committee (PDMC)
SDGs	Sustainable Development Goals
UN	United Nations
USD	United States Dollar
USAID/OFDA	United States Agency for International Development/Office of U.S Foreign Disaster Assistance



## 1 Introduction

Nepal is one of most at-risk country in South Asia and frequently experiences geologic and hydro-climatic hazards. Floods, droughts, earthquakes and landslides are main natural hazards that have resulted in the loss of lives, and damage to properties in both urban and rural settings. Climate change has exacerbated hydro-climatic disasters. The 2015 earthquakes and the 2017 floods are the most recent example of catastrophic risk experienced.

Nepal's 2015 constitution set the course for a massive shift of power from the federal to the provincial and municipal levels of government. Disaster Risk Reduction and Management (DRRM) is among 22 exclusive powers that are now the responsibility of devolved authorities to exercise. Schedule 9 of the constitution has spelled out the DRRM functions of all three levels of government -the federal, province and local levels- with significant decentralization for decision making, resources management and service delivery systems. For disaster resilience, the constitutional authority to local governments for "Disaster Management" falls under section 8: on the jurisdiction of local government. However, "Disaster Management" also appears on the concurrent list for federal state and local jurisdictions. In addition, "Early preparedness for rescue, relief and rehabilitation from natural and man-made calamities" is on the concurrent list for federal and state jurisdictions.

The newly enacted Disaster Risk Reduction and Management Act, 2017 (DRRM Act) also addresses the new federal structures with the Provincial Disaster Management Committee (PDMC), Local Disaster Management Committee (LDMC) including the District Disaster Management Committee (DDMC) including their roles and responsibilities in DRM at the provincial and local level. The Local Government Operation Act, 2017 (LGOA) has identified comprehensive role, duty and rights of the rural and urban municipalities pertaining to DRRM from preparing its own policy, law, standards, implementation to monitoring and evaluation. The Act further outlines tasks such as undertaking disaster assessment, managing disaster management fund, implementation of local disaster risk reduction programs, response, recovery and reconstruction including operating local emergency operations centre.

The DRRM Act is the key piece of legislation for disaster risk. It is a federal law enacted for disaster risk reduction and management. In this context, the federal law directs local government to execute disaster management activities in the manner stipulated in the federal law. However, the Constitution provides under Schedule 8 for the independent power of local government.

It is noteworthy that the new DRRM Act plans to enact and integrate all key components of disaster risk reduction and management including measures for risk assessment, investments for risk reduction, strengthening disaster risk governance to manage disaster risk, and disaster preparedness for effective response including recovery, rehabilitation and reconstruction. Article 7 stipulates that natural and man-made disaster preparedness, rescue, relief and rehabilitation jurisdictions are preserved under the concurrent power of federal and provincial government. Schedule 8 stipulates that disaster management is the exclusive power of the municipal level. The country is currently in a transitional period as powers are devolved.

The DRRM Act has broadened the scope from disaster response and recovery to also include risk assessment and risk reduction, and to build back better (reconstruction and recovery), previously not covered in the way how 'disasters events' were managed. The DRRM Act defines disaster risk reduction, disaster response, recovery and management. While defining disaster management, the Act refers to all the activities related to "disaster risk reduction, disaster response and disaster recovery", which may respond to the need of ensuring disaster

resilience, during the implementation of the DRR component of the Act. The Act envisions a disaster search and rescue team (an expert group prepared for search and rescue operation which can be mobilised during disaster events). In addition to *Gaupalika*, the rural municipality, the Act also recognises the district assembly as a local level.

It is in this context, the International Organization for Migration (IOM) - UN Migration Agency is committed to the principle that humane and orderly migration benefits both migrants and society. IOM is committed to support its member states implement the Sendai Framework for Disaster Risk Reduction 2015 – 2030 coherently with the Sustainable Development Goals (SDGs).

Given the role and responsibilities of the Municipal Government authorities for Disaster Risk Management (DRM) and post-disaster recovery, it is vital to analyse and assess the existing strengths, capacity, resources and knowledge of these authorities. The Act has assigned considerable power including specific roles and responsibilities to the municipalities. On the other hand, there could be capacity and knowledge gaps, which could hinder smooth implementation of the Act. For this, IOM, has conducted a detailed assessment for the selected fourteen municipalities in relation to the implementation of DRRM Act 2017 and in line with the provisions of the Constitution of Nepal.

## 1.1 Criteria for Selecting Municipalities

The fourteen municipalities and rural municipalities have been purposely selected. Two municipalities have been identified in each seven provinces. They capture diverse geographic context, i.e plains (*tarai*), valleys and mountains ranging from an elevation of 100 meters (part of Biratnagar Metropolitan City) to as high as 7000 meters (part of Machhapuchhre Rural Municipality). Among all fourteen municipalities, five of them are situated in the plains, four of them are in the valleys and the remaining five are in the mountains.

The size of the municipalities has a large variation. The municipality with the biggest area is ten times bigger than the smallest. While some of the municipalities in the mountain region (e.g Machhapuchhre has an area of 544.58 square kilometres, others -mainly the ones in the *tarai*- are small (e.g. Rajbiraj with 55 square kilometres). Similarly, some have large population (eg. Biratnagar with the largest population of 280,091 among all 14 municipalities) and some with smaller population (e.g Kapurkot with population of 18,204). Biratnagar Metropolitan City has the highest population density of 3638 where as Machhpuchhre the lowest of only 40 people per square kilometre.

The selected municipalities also serve as a good mix of three categories of local government i.e rural municipality, sub metropolitan city and metropolitan city.

See Table 1 (in the next page) for details of the selected fourteen municipalities.



Figure 1: Map of Nepal Showing the Selected Municipalities

**Table 1: Details of Biratnagar Metropolitan City and Udayapurgadhi Rural Municipality**

Districts	Metro/Sub Metropolitan cities and Municipalities Total 14	Geography	Population <sup>1</sup>	Area [sq.km]	Population Density [person/sq.km]	
Province 1	Morang	Biratnagar Metropolitan City	Plain	280,091	77	3,638
	Udayapur	Udayapurgadhi Rural Municipality	Valley	30,731	269.51	114

**Table 2: Details of Rajbiraj Municipality and Bhangaha Municipality**

Districts	Metro/Sub Metropolitan cities and Municipalities Total 14	Geography	Population	Area [sq.km]	Population Density [person/sq.km]	
Province 2	Saptari	Rajbiraj Municipality	Plain	69,803	55	1,269
	Mahottari	Bhangaha Municipality	Plain	46,754	77.21	606

<sup>1</sup> Source for population are based on 2011 Census and taken from MoFAGA Portal [www.MoFAGA.org.np](http://www.MoFAGA.org.np)

**Table 3: Details of Bhimeswor Municipality and Nilkantha Municipality**

Districts	Metro/Sub Metropolitan cities and Municipalities Total 14	Geography	Population	Area [sq.km]	Population Density [person/ sq.km]
	Districts				
Province 3	Bhimeswor Municipality	Mountain	32,480	132.5	245
	Nilkantha Municipality	Mountain	58,515	197.7	296

**Table 4: Details of Baglung Municipality and Machhapuchhre Rural  
Municipality**

Districts	Metro/Sub Metropolitan cities and Municipalities Total 14	Geography	Population	Area [sq.km]	Population Density [person/ sq.km]
	Districts				
Gandaki Province	Baglung Municipality	Mountain	57,823	98.01	590
	Machhapuchhre Rural Municipality	Mountain	21,868	544.58	40

**Table 5: Details of Tulsipur Sub Metropolitan City and Gulariya Municipality**

Districts	Metro/Sub Metropolitan cities and Municipalities Total 14	Geography	Population	Area [sq.km]	Population Density [person/ sq.km]
	Districts				
Province 5	Tulsipur Sub Metropolitan City	Valley	141,528	384.63	368
	Gulariya Municipality	Plain	66,679	118.21	564

**Table 6: Details of Birendranagar Municipality and Kapurkot Rural  
Municipality**

Districts	Metro/Sub Metropolitan cities and Municipalities Total 14	Geography	Population	Area [sq.km]	Population Density [person/ sq.km]
	Districts				
Karnali Province	Birendranagar Municipality	Valley	100,458	245.06	410
	Kapurkot Rural Municipality	Mountain	18,204	119.21	153

**Table 7: Details of Jayprithvi Municipality and Dhangadi Metropolitan City**

Districts	Metro/Sub Metropolitan cities and Municipalities Total 14	Geography	Population	Area [sq.km]	Population Density [person/ sq.km]
	Districts				
Sudur Paschim Provience	Jayprithvi Municipality	Valley	22,191	166.79	133
	Dhangadi Sub Metropolitan City	Plain	147,741	261.75	564

<sup>1</sup> Source for population are based on 2011 Census and taken from MoFAGA Portal [www.MoFAGA.org.np](http://www.MoFAGA.org.np)

## 1.2 Objectives

The municipal assessment aims to generate baseline information on strength, needs and analyse capacity gaps of the municipal government that will guide the consultations and capacity enhancement components to be used to designed and address the identified gaps for operationalizing the DRRM Act, 2017.

The specific objectives of this assessment are as follows:

- To understand how municipal authorities are budgeting for DRM and disaster preparedness;
- To understand the response capacity of the municipality;
- To know the status of building code implementation and land use planning in each of the municipalities and to what degree do they incorporate hazard mapping into it;
- To map out if the municipalities have passed any laws/ regulations/ policies that relate to DRM and how were those developed;
- To assess existing administrative infrastructure or planned engagement and coordination with neighbouring municipalities as well as with the provinces and central level on DRM issues;
- To know the municipalities engagement with vulnerable populations in relation to DRM issues; and
- To know regarding the existing or planned vertical and horizontal engagement and coordination mechanism of the municipalities;

## 1.3 Scope of Services and Expected Outputs

Under the direct supervision of Ministry of Federal Affairs and General Administration (MoFAGA), this study on 'Needs and Capacity Assessment of Fourteen Rural and Urban Municipalities on Disaster Risk Reduction and Management in Nepal' was carried out by IOM Nepal. It is one of the components of 'Technical Support to the Government of Nepal in the implementation of Disaster Risk Reduction and Management Act 2017' project funded by USAID/OFDA. The assessment was conducted from 1st of September 2018 to 28th February 2019.

This report is a summary of findings from the detailed assessment undertaken for the selected fourteen municipalities in relation to the implementation of the DRRM Act, 2017 and the National Strategic Action Plan 2018-2030. The study aims to generate baseline on strength, needs and analyze capacity gaps of the municipal government that will guide into the development of comprehensive training module focusing on capacity enhancement addressing the identified gaps.

## 2 Methodology for Municipal Capacity Assessment for DRRM

IOM's initiative to conduct a detailed capacity assessment of municipal governments in relation to the implementation of DRRM Act, 2017; Local Government Operations Act, 2017 and in line with the provisions of the Constitution of Nepal, is the first ever such initiative in Nepal. The assessment –though is being carried out for an initial batch of fourteen municipalities– is intended to serve as a guiding method to scale up to all other remaining 739 municipalities in Nepal.

The capacity assessment for DRRM methodology comprises of following six key steps. The following section describes these six steps:

### 2.1 Review of Documents, Preparation of Questionnaire and Training to Enumerators

A detailed questionnaire has been designed based on the review of available documents and guidelines. Capacities of municipal governments –that includes the capacity of elected representatives, municipal staff and considering the role of private sector and I/NGOs– have been incorporated while designing the questionnaire.

The survey for municipalities has been based on this purposefully designed questionnaire. It adopts a mixed method approach combining both qualitative and quantitative techniques. The questionnaire considers the requirements of the government, particularly the Ministry of Federal Affairs and General Administration (MoFAGA) including Ministry of Home Affairs (MoHA). The questionnaires is guided by the requirements outlined in the National Disaster

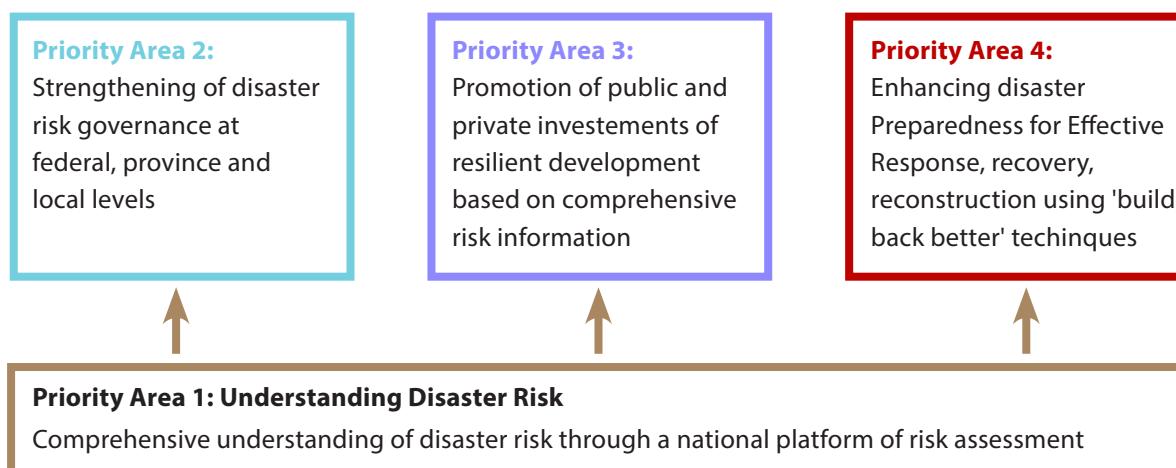


Figure 2: Four key pillars identified by the National Strategic Action Plan for DRRM: 2018-2030  
(unofficial translated version by A. Pokhrel)

Risk Reduction Management Act, 2017; Local Government Operation Act, 2017; Strategic Action Plan for Disaster Risk Reduction and Management, 2018-2030 (see Figure 1 below); National Policy on Disaster Risk Reduction and Management, the model guideline for the preparation of the municipal Disaster Risk Reduction and Management Policy and the model guideline for the preparation of the working procedure for Disaster Management Fund at the local level.

The survey involved mobilizing trained enumerators, travelling to different municipalities to gather primary data using one-to-one interviews, collating various relevant municipal specific documents, undertaking focus group

discussions with and relevant organizational representatives at the municipal levels.

The qualitative techniques comprise of key actor (informant) interviews and focus group discussions with relevant stakeholder groups. Similarly, the quantitative data sources include secondary database maintained by, government of Nepal's Ministry of Federal Affairs and General Administration, Central Bureau of Statistics, respective municipalities and other relevant sources.

See Annex B – E for the questionnaire purposefully designed for the capacity assessment.

## **2.2 Consultation with Key Actors**

Consultations with key informants and institutions relevant for the assessment was carried out at the federal level. List of people and institutions consulted are listed in Table 1 (See below).

**Table 8: List of stakeholders for interview**

S.No	Name	Organization
1.	Mr. Suresh Adhikary, Mr. Jiba Lal Bhusal, Guru Subedi, Mr. Rishi Acharya, Ms. Neelam Niraula	Ministry of Federal Affairs and General Administration
2.	Mr. Bamshi Acharya, Mr. Bed Nidhi Khanal	Ministry of Home Affairs
3.	Dr. Narayan Thapa	UNDP Consultant (local governance)
4.	Mr. Krishna KC	DRM Specialist, IFRC cum coordinator for CBDRM Platform
5.	Dr. Suman Lal Karna	Expert on Urban DRRM governance
6.	Mr. Suresh Pandit	Expert, Emergency Response and Preparedness
7.	Mr. Dilli Raj Joshi	MEAL cum DRM Specialist

## **2.3 Identification of Enumerators and Trainings on DRRM**

The assessment team identified and hired enumerators for surveys in the select municipalities. The enumerators were required to collect field level data, undertake focus group discussions, Conduct key informant interviews and face to face interviews with project stakeholders including Mayor, Deputy Mayor, Chief Administration Officer, Engineers and or Technical Staff supporting sectoral investments in the municipality, I/NGOs such as NRCS, municipal focal person for DRRM and information officers.

A total of twenty-two (7 female and 15 male) enumerators were selected from a pool of IOM consultants and staff who had substantial knowledge, skills and experiences in conducting field surveys (including Displacement Tracking Matrix (DTM) and working on the issues related to DRRM. A total of nine teams, comprising of a minimum of two members were deployed to all seven Provinces.

A two-day training on basic concept on DRRM for enumerators was designed for enumerators. The training was delivered in Kathmandu using an interactive methodology. The training was also observed by a representative from MoHA. The representative participated and provided important feedback on drafting of questionnaire. See Annex F for the two day 'Basic Concept on DRRM' training schedule.

Prior to the deployment of enumerators, a one-day refresher training was designed and delivered to the survey teams. See Annex G for the schedule of the refresher training.

## **2.4 Support to Enumerators During Survey**

A ‘call tree’ system was designed for support during the survey.

In addition to the ‘call tree’ a WhatsApp group was created to provide answers for any support required during the survey in the municipalities. This application helped all team members learn from the questions being faced by their colleague(s).

For instant support provisions enumerators were asked to reach out to each members of the call tree using mobile.

## **2.5 Collating of Survey Findings**

Once the filled questionnaires were received from municipalities, they were reviewed for consistencies.

Each team prepared a ‘take-away’ note to summarize their experience in conducting the surveys. Follow up meetings were planned to obtain clarification from each survey team.

## **2.6 Analysis and Preparation of the Assessment Report**

A draft summary of findings was prepared and shared with the survey team members to check if it captured the discussions and findings from the interviews and FGDs carried out in their respective municipalities.

## **2.7 Validation of Municipal Assessment and Field Data Obtained from Surveys**

Each municipal assessment was validated by sharing draft municipal report to the respective Municipality’s DRRM focal person (and or spokesperson), municipality’s elected official representative (Mayor or deputy mayor), NRCS (and or other NGO) representative and where ever possible meeting with them for a follow up interview. The purpose of the validation exercise are:

- (i) To review the draft municipal assessment report and check validity of findings;
- (ii) Identifying any updates and developments since the survey and interaction with the municipal team;
- (iii) To check for any key missing aspects on DRRM including identification of missing data;
- (iv) Identify if any area needs additional clarity including exploring suggestions for improvement; and
- (v) Suggest how the municipal assessment report can be improved to make the report stronger and clearer.

Validation of all fourteen municipal assessments was carried out by:

- IOM conducted trip to eleven municipalities to purposely validate the findings.
- Plan8 team member’s visit to five municipalities (Biratnagar, Birendranagar, Bhimeshwor, Tulsipur, and Gulariya) among the fourteen municipalities, and
- Cross checking with findings from other secondary sources such as Television show ‘Talk of the Town’.

## **2.8 Limitation**

The municipal need and capacity assessment has been prepared based on a rapid survey and interview with key municipal leadership and staff. Each survey team spent around 2 to 3 days in each municipality to undertake key informant interview and to collect references. Capturing a wide range of issues from risk (hazard, exposure, vulnerability), policies and strategies on DRRM, risk reduction investments, preparedness for response and recovery,

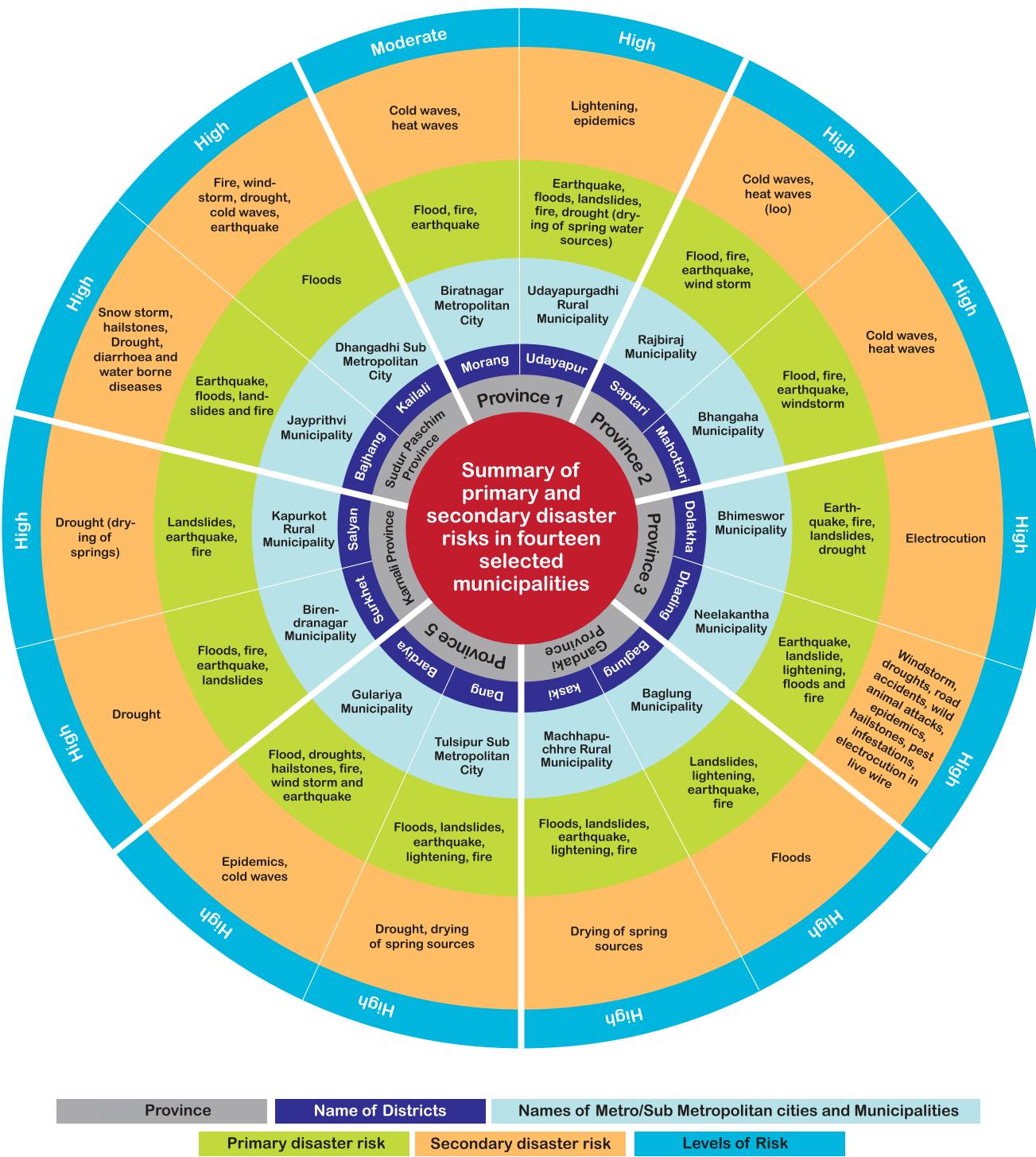
by a mix group of surveyors who had limited exposure and understanding on DRRM, in 2-3 days' time gives a good snap-shot of activities. However, it does not allow an in-depth understanding and the dynamics from within the municipality (ies).

Information for those municipalities have been richer where either IOM has an ongoing engagement with the municipality (e.g Bhimeshwor, Neelakantha), is visited by Plan8 team (such as Birendnagar, Tulsipur) or if is captured through recorded TV interviews (such as the Talk of the Town episode of Gulariya).

### 3 Findings from Municipal Assessment: What changes are underway how do these affect and disaster risk?

Except for one Metropolitan City, all rural and urban municipalities selected for assessment fall in the high-risk category. See Figure 3 for a summary of primary and secondary disaster risk for all fourteen municipalities assessed.

**Figure 3: Summary of primary and secondary disaster risks in fourteen selected municipalities**



Note: The Categorization of levels of risks is based on qualitative understanding of disaster risk and is to be understood in relative terms.

There is the political will to prioritize DRRM issue at the municipal levels. Municipalities affected by the 2015 earthquakes and 2017 floods are more active compared to the ones not affected by recent disaster events.

### **Disaster Risk Governance at the Municipal Levels.**

- Only two out of fourteen municipalities and rural municipalities have prepared their DRRM Act. Examples include the DRRM Act for Biratnagar Metropolitan City (endorsed on 26 June 2018) and Gulariya Municipality. Four municipalities have drafted their acts but are awaiting endorsement. The remaining 7 municipalities have not started drafting of their local DRRM Act.
- Similarly, only two municipalities have prepared their Disaster Management Fund Operational Guideline. Namely Udayapurgadhi Rural Municipality and Kapurkot Rural Municipality.
- None of the municipalities have prepared their strategic action plan for DRRM.
- Review of legal documents have shown that there have been missed opportunity in helping Municipalities make them effective. Endorsed act and guidelines are exact copies of the sample act and guideline prepared and shared by the Ministry of Federal Affairs and General Administration. It does not reflect the municipalities' risks and opportunities. A case in point is the Disaster Management Fund Operational Procedure for Udayapurgadhi Municipality, prepared on the basis of the national guideline for Disaster Management Fund Procedure Sample (approved by MoFAGA). The municipality's Disaster Management Fund does not include provisions for utilizing the funds for risk reduction or recovery activities. Existing provisions are only for disaster response.
- Only a few municipalities have formulated their Municipal DRRM Committees including Ward Level Committees (e.g Birendranagar) and have set up their DRRM Fund.
- Most urban municipalities have or are in the process of enforcing seismic building code. There are no code and regulation for flood and other hazards such as lightening, fire and wind storms. Two municipalities are in the process of preparing their Local Disaster and Climate Resilience Plan based on the draft guideline prepared by MoFAGA.

**Table 9: Summary of Disaster Risk Governance at the Municipal Levels in Fourteen Selected Municipalities.**

State/ Province	Name of Districts	Names of Metro/ Sub Metropolitan cities and Municipalities Total 14	Levels of Risk	Status of Local DRRM Law	DRRM Fund Guideline	Other DRRM related polices and guideline
Province 1	Morang	Biratnagar Metropolitan City	Moderate	Prepared and endorsed	Not prepared	Follows national building code
	Udayapur	Udayapurgadhi Rural Municipality	High	Not prepared	Prepared and endorsed	NA
Province 2	Saptari	Rajbiraj Municipality	High	Not prepared	Not prepared	NA
	Mahottari	Bhangaha Municipality	High	Not prepared	Not prepared	Drafted a detailed DRRM work plan is awaiting endorsement from the municipal executive committee. Secondly, the municipality is working on preparing its river bed mining standard for the extraction of sand and gravels within the Municipality.
Province 3	Dolakha	Bhimeswor Municipality	High	Prepared. Yet to be endorsed.	Not prepared	NA
	Dhading	Neelakantha Municipality	High	NA	NA	NA
Gandaki Province	Baglung	Baglung Municipality	High	Prepared. Yet to be endorsed.	Not prepared	No local-level laws, regulations, or policies are in place.
	Kaski	Machhapuchhre Rural Municipality	High	Not prepared	Not prepared	Municipality has plans to prepare their DRRM Act.
Province 5	Dang	Tulsipur Sub Metropolitan City	High	Prepared. Yet to be endorsed.	Not prepared	Safe Shelter Guideline and building code have been passed.
	Bardia	Gulariya Municipality	High	Prepared and endorsed.	Not prepared	NA
Karnali Province	Surkhet	Birendranagar Municipality	High	Prepared. Yet to be endorsed.	Not prepared.	In the process of preparing its LDCRP.
	Salyan	Kapurkot Rural Municipality	High	Not prepared	Prepared.	Building code has not been developed.
Sudur Paschim Province	Bajhang	Jayprithvi Municipality	High	Not prepared	Not prepared	Building code has not been developed.
	Kailali	Dhangadhi Sub Metropolitan City	Moderate	Not prepared	Not prepared	Process of preparing LDCRP underway with support from SURE

## **Enhancing Disaster Preparedness for Effective Response, Recovery, and Reconstruction using ‘build back better’ techniques.**

- None of the assessed municipalities have systems to track and record disaster damage and loss data. Exceptions are a couple municipalities where there is provision of hard copy registers maintained and manual entries done.
- The situation of the earthquake affected municipalities are different in terms of recovery and reconstruction. For example in the case of Bhimeshwor Municipality, there are rigorous ‘physical inspections’ for owner built private houses ('shelters'). Private buildings not meeting the criteria are not provided with subsequent tranches of grant funding.
- Knowledge and capacity is better on relief and rescue operations compared to risk reduction and understanding risk. However, this is mainly limited to emergency personnel (such as staff within NRCS) and the security forces (Armed Police Force, Nepal Army and Nepal Police). These institutions are well-equipped to handle emergencies, based on the country’s prior experience with large scale relief operations during the 2015 earthquake and the 2017 floods.
- Emergency response is *ad-hoc*, budget not guided by level of risk, is flat-for-all-wards.
- Open spaces, camp coordination and camp management, evacuation routes planning and marking are non-existent in all municipalities with an exception of Baglung and Neelakantha municipalities.
- Training and positioning of Light Search and Rescue teams non-existent.

## **Opportunities**

- ‘Moment of maximum opportunity’ (MOMO) to build capacity of elected municipal leaders and municipal staff to design and implement robust DRRM policies and plans. Only few municipal staff – such as the DRRM focal person in urban municipalities – have received training(s) on DRRM.
- Only around fifty percent of staff positions have been filled.
- The concept of ‘risk assessment’ and ‘RSLUP’ are like *déjà vu* to all municipalities. Interestingly, risk assessments have not been undertaken even in high earthquake and landslide risk municipalities (such as Bhimeshwor or Gulariya). Hazard assessment for some wards are done (eg. For the case of Nilakhantha, but results are not available within the municipality for subsequent update or use for sectoral assessments).
- Key starting point – training to orient the municipal political leadership and staff on the legislative changes on DRRM.
- Disaster risk reduction and management has not been a priority for the municipality. This is evident from the fact that there has been no trainings conducted for public officials and relevant professionals for (i) DRR (ii) Response and Preparedness. However, the municipality realizes that such trainings are required and will be of help to make the municipality resilient.
- Training on building awareness on the key legislative changes for DRRM, risk assessment that includes multi hazards, exposure and vulnerability along with trainings for fire-fighting, and awareness/training session on disaster response are municipality’s interest areas.
- Engagement with vulnerable populations takes time and effort. With an exception of Dhangadhi and Gulariya there is limited evidence of municipal engagements with the most at-risk vulnerable populations.

**Table 10: Municipal budgetary allocation for DRRM and for disaster management fund**

State/ Province	Name of Districts	Names of Metro/Sub Metropolitan cities and Municipalities Total 14	Population	Total Budget for Fiscal Year (NPR) for 2017- 2018 unless mentioned	DRRM Fund (NPR)	DRRM Budget for 2018-2019 (NPR)
Province 1	Morang	Biratnagar Metropolitan City	280,091	1,748,921,000	265,066	4,900,000
	Udayapur	Udayapurgadhi Rural Municipality	30,731	391,648,000	1,340,000	6,590,000
Province 2	Saptari	Rajbiraj Municipality	69,803	587,274,872	5,000,000	NA
	Mahottari	Bhangaha Municipality	46,754	415,794,525	2 million	1 million for disaster and environment
Province 3	Dolakha	Bhimeswor Municipality	32,480	475,429,011	Set up with 1,000,000 in 2018. Remaining balance of 700,000	NA
	Dhading	Neelakantha Municipality	58,515	916,920,000	NA	NA
Gandaki Province	Baglung	Baglung Municipality	57,823	673,908,637	3 million	NA
	Kaski	Machhapuchhre Rural Municipality	21,868	45,780,435 (2018-19)	1 million	1 million
Province 5	Dang	Tulsipur Sub Metropolitan City	141,528	1,178,696,397	NA	NA
	Bardia	Gulariya Municipality	66,679	338,104,369	1.5 million	NA
Karnali Province	Surkhet	Birendranagar Municipality	100,458	655,403,000	1 million at Municipality and 1 hundred thousand in each ward	NA
	Salyan	Kapurkot Rural Municipality	18,204	230,284,350	1 million	NA
Sudur Paschim Province	Bajhang	Jayprithvi Municipality	22,191	6,025,000	400,000	NA
	Kailali	Dhangadhi Sub Metropolitan City	147,741	242,819,136	700,000	NA

# PROVINCE 1

Province 1 has high floods, landslides, earthquakes and fire risks. It has the highest levels of risk for glacial lake outburst floods compared to any other province in Nepal. The 1988 Udayapur earthquake and the 2011 Taplejung earthquake led to major damage of private residential buildings and critical infrastructure. Koshi River drains most of the Province 1 and the 2008 Koshi embankment breach led to the major flood in Sunsari District. Landslides and droughts are getting increasingly frequent and much of these hydro-meteorological disasters are exacerbated by climate change risks.

Province 1 has one metropolitan city, two sub metropolitan cities, forty-six urban municipalities and eighty-eight rural municipalities. Biratnagar Metropolitan City and Udayapurgadhi rural municipalities have been selected to represent needs and capacity assessment in Province 1. They capture one of the largest urban setting and one rural setting. Biratnagar represents an urban setting in the tarai (flood plains) and Udayapurgadhi represents a rural municipality with Churia (foothills), mid-hill and valley settlements. The following section describes the findings from Biratnagar Metropolitan City and Udayapurgadhi Rural Municipality.

## 3.1 Province 1: Biratnagar Metropolitan City<sup>2</sup>

### 3.1.1 Introduction to Biratnagar Metropolitan City

Biratnagar is an interim provincial capital of Province No. 1. It is known as Nepal's 'industrial capital' and is currently the second most densely populated (after Kathmandu) and the fourth most populous city of Nepal. The total population is 280,091 (142006 male and 138085 female) living in 47798 households. It is located in the tarai flood plains and borders India along its southern border. Biratnagar Metropolitan City is located in a doab between the Singhiya and Kesaliya Rivers. This makes the municipality highly risk to floods. Other major disaster risk in the municipality includes fire, and earthquake. Seasonal cold waves and heat waves impacts the city but for short duration.

During the 2017 monsoon floods around 80 to 90 hectares of land was damaged, around 15 poultry farms, 8 cow farms including some fisheries were damaged. Biratnagar airport remained closed for several weeks, and other basic services such as transport routes, electric power and drinking water supplies, and communications were disrupted. Every year around 10 houses experience fire. The municipality was not much affected by the 2015 earthquake, but bore minor impacts during the 1988 Udayapur Earthquake.

Two major urban infrastructure development projects are currently underway. Both of these projects are supported by ADB financing.

(i) *The Secondary Towns Integrated Urban Environmental Improvement Project* focuses on construction of road side storm water drains (around 35 kilometres), and a waste water treatment plant. (ii) *The Regional Urban Development Project* supports construct and improvement of sewerage, drainage and roads and design of Integrated Solid Waste Management System.

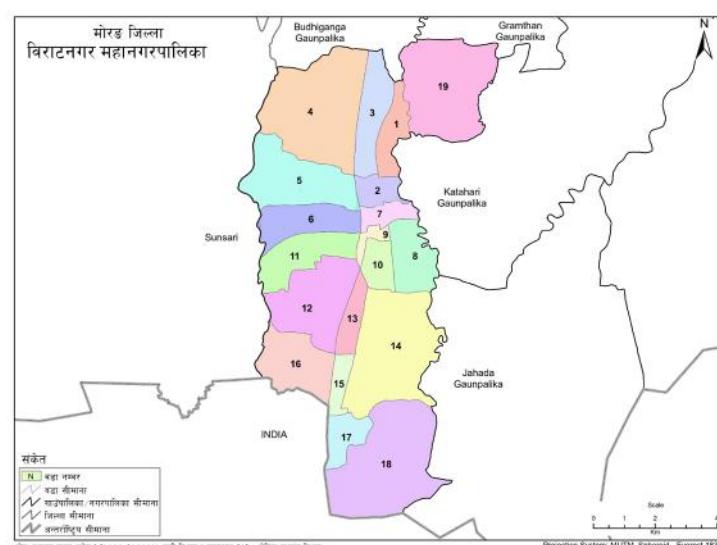


Figure 4: Map of Biratnagar Metropolitan City (Source: MoFAGA)

<sup>2</sup> This section is written based on the survey findings of Biratnagar Metropolitan City and review of program documents available in the municipality's web-site <http://www.biratnagarmun.gov.np/ne>. The survey was undertaken by a team of three members comprising of Mr. Ashok Kumar Adhikari, Ms. Radha Upreti and Mr. Raj Kumar Tamang. Interaction with Er. Bharat Kumar Neupane was undertaken for validation purpose.

### **3.1.2 Policy Regime on Disaster Risk Reduction and Management**

DRRM Act for Biratnagar Metropolitan City was endorsed on 26 June 2018. It follows a standard template shared by MoFAGA and covers all four key components of DRRM. The metropolitan city has constituted a Metropolitan Disaster Management Committee under the chairmanship of its Mayor. The Deputy Mayor functions as the focal person for all disaster related issues. At the ward levels there are Ward Level Disaster Management Committee coordinated by the Ward Chairperson.

A provincial-level sensitization workshop was held in Biratnagar to sensitize stakeholders in Province 1 on Disaster Risk Management. The workshop was the first of such event conducted after the enactment of the DRRM Act, 2017 and helped create awareness about potential mechanisms and actions to be taken at the provincial level to reduce disaster risk and to be prepared for disaster events.<sup>3</sup> At the event, Chief Minister of Province 1, Hon. Sherdhan Rai urged coordination among the three tiers of governments to address disaster risk issues and creation of a conducive environment to engage all the stakeholders of society. "Due to low level of awareness of the multiple disaster risks, our development practices and behaviours have resulted in environment degradation ultimately aggravating the frequency of disaster. Hence, our first priority should be to raise the risk awareness and to practice risk informed development," he said. He also informed that Province 1 has recently created a 'Chief Minister Natural Disaster Management Fund' which could be instrumental not only for improved disaster response but also for risk mitigation together with the support of development partners.

The Mayor of Biratnagar Metropolitan City, Mr. Bhim Parajuli was personally involved in the search and rescue of the July 2017 flood victims. He feels the need for an effective mechanism to reduce risk and deal with disaster events. Interactions with him highlighted that there are major areas where improvements are required: particularly in terms of capacity (awareness raising, skill, knowledge, tools and technology) at all three layers of the governments; coordination among the government, DPs, private sector and beneficiaries for better resource utilization and synergy; and Disaster Information Management System about multi-disaster risks and mitigation actions where more efforts are required.

The endorsement of the Metropolitan DRRM Act in June 2018 is a key indicator exhibiting the understanding the need for legislative action for DRRM. A review of the act shows, however, that it is not informed by the local understanding of risk. It follows a template shared by the MoFAGA and requires updating to make Biratnagar Metropolitan City resilient.

### **3.1.3 Resilient Local Development Planning and Risk Reduction**

Biratnagar Metropolitan City has not undertaken any disaster risk assessment for the city neither for its infrastructure development projects. However, Daraiya, Ward Number 16 is generally understood as a high flood risk area and Jatuwa area is noted for its fire risk. In 2015, a workshop held with the support of National Society for Earthquake Technology-Nepal (NSET-Nepal) identified the need to prepare its Risk Sensitive Land Use Plan, however, it has not been completed as of September 2018. There is no system for undertaking risk screening for sectoral investments such as water supply, roads etc. The exceptions are the projects being constructed with financial and technical support of Asian Development Bank.<sup>4</sup> The focal person received training on hazard assessment only two months earlier. Older version of GIS map for the municipality exists. It is currently being updated. 64.4 percent of the houses

<sup>3</sup> See <http://www.np.undp.org/content/nepal/en/home/presscenter/articles/2018/sensitization-on-reducing-disaster-risk-province1.html> for a more detailed account on the provincial sensitization workshop.

<sup>4</sup> Asian Development Bank's operational procedure requires all infrastructure projects go through a disaster and climate change risk screening. Depending upon the result – high, moderate or low risk – it is decided whether a project requires a detailed risk assessment or not.

are made of reinforced cement frame structure, while the rest are non-frame structure (load bearing). Disaggregated information on gender, elderly, children, Persons with Disability (PWDs) are available. The number of squatters and slums is increasing rapidly. Currently there are around 3000 families living along the banks of Singhiya and Kesaliya Rivers.

The National Building Code is followed. Three monitoring visits are usually undertaken by the municipal technical team during the construction of buildings to check if they are built as the approved drawings and follows the building code. For defaulters, the building will either be dismantled or fined by 300 percent. Recent data shows that about 1500 to 1600 hundred houses have been fined and approximately seven houses have been dismantled. The municipality also has provisions to free building permit taxes if there are provisions to construct an underground parking.

### **3.1.4 Preparedness for Emergency Response**

There is no system to collect, store and manage data on disaster events. A few emergency equipment and materials are available. Such as few boats, some rope, life jackets, spades and shovel. There are five fire engines, out of which three are functional. Remaining two needs major repair and maintenance.

Except for a few locations, settlements in Biratnagar is spread. There are plenty of open spaces such as in school and public places. However, none of them have been classified as 'open space', there is no practice of marking them as safe spots, identification of evacuation routes and awareness to the urban community members. The municipality intends to develop the zones along both the eastern and western rivers as parks and walking spaces that can be used as safe refuge during times of disaster.

The Municipal Disaster Management fund has NPR. 265,066 set aside. For the fiscal year 2018/19, they have proposed a budget of NPR 4,900,000 for disaster risk reduction and management.

### **3.1.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

There is no early warning system in practice in Nepal particularly for urban floods. The 2017 floods was a result of heavy rainfall in Biratnagar (57 mm on 11 August).<sup>5</sup> It is important to note that these rainfalls are recorded in the stations and does not necessarily capture the diversity of rainfall.

The losses of properties in Biratnagar and Sunsari are not only due to the weather events of 4 August and 11-14 August 2017, but were also a result of other combined factors such as:

- (i) unplanned urbanization with inadequate waterway. There has been a neglect in protecting the traditional drainage systems and wet lands that served as 'shock observers'. Further, available drainage are not cleaned periodically and prevents the smooth flow of rainfall water downstream;
- (ii) during intense rainfall within the urban setting, the adjoining river systems i.e Singhiya and Kesaliya too overflow their bank and hinders the safe passage of drainage downstream; and
- (iii) Combined with the first two, heavy rainfall in the upstream catchment – where these catchments too are undergoing fast urbanization – release vast amount of water quickly downstream.

Understanding this complex interaction requires a systemic approach that entails engaging with upstream and downstream municipalities. Given the challenges faced by the newly elected municipal representatives within their own boundaries and to deliver services, there has not been much interest (and incentives) in engaging with upstream and downstream communities. The Mayor highlighted the need for interactions with upstream municipalities and to jointly work in addressing common problems.

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<sup>5</sup> Around the same time, the Chatara Station in Sunsari District recorded 40.7 mm, 41.5 mm, 41.1 mm and 40.7 mm on 3 August, 10 August, 11 August and 13 August respectively.

The 2017 floods led to a major economic damage and loss in Biratnagar. The 2017 flooding was the worst experienced ever. Most areas of Biratnagar was under water due to incessant rainfall, inadequate storm drainage and ever-increasing housing settlements. Biratnagar's airport was under water for several weeks, the electricity supply system tripped as the sub-station that supplied electricity was inundated.

Following the 2015 earthquakes, the municipality jointly with the Engineering Association formed a committee to undertake a post disaster management survey. A total of 230 assessments were undertaken and the outcome of the assessment was submitted to the National Planning Commission.

### 3.1.6 Training and Capacity Building Needs

There are 355 staff positions in Biratnagar Municipality. Out of which 282 positions are fulfilled and functional while remaining 73 positions are currently vacant. The staff and elected representatives of Biratnagar Metropolitan City have not been trained on even basic disaster risk reduction and management. Consultation with the focal person for DRRM and information officer revealed that both staff and elected representatives are interested. Key training needs identified are (i) awareness on disaster risk reduction and management including key legislative aspects, (ii) disaster risk assessment, (iii) disaster risk reduction, (iv) post disaster needs assessment and (iv) orientation training on DRRM.

## 3.2 Province 1: Udayapurgadhi Rural Municipality<sup>6</sup>

### 3.2.1 Introduction to Udayapurgadhi Rural Municipality

Udayapurgadhi Rural Municipality lies in Udayapur District of Province 1. Five Village Development Committees viz Tawasri, Baray, Dumre, Panchawati and Bhayaldanda were merged to form this rural municipality in March 2017. The name of the municipality has been coined after the popular historic Udayapur Fort which is located in the previous Panchawati VDC. Its geographical location includes the Churiya hills, inner valley and hills in parts of Ward Number 7.

Udayapurgadhi Municipality occupies a total area of 269.5 square kilometres. Its total population is 30,731 with 14,501 male and 16,230 female.<sup>7</sup>

In addition to key earthquake and floods other disasters such as landslides, lightening, epidemics and fire have been increasing. One key concern of the municipality is the drying of spring water sources including depletion of ground water table in open dug wells. Nepal Red Cross Society's District Secretary attributes the increasing trends of hydro-meteorological disasters to climate change and says that it has been a growing area of concern for DRM professionals and institutions in the district. In the absence of water, communities in the Churia hills have no other option than to migrate. Agriculture too has been impacted and the area under agriculture cultivation has gone down. Paddy being a water intensive crop, people have stopped growing. Apart from Udayapurgadhi other municipalities in Udayapur district such as Chaudadanti,

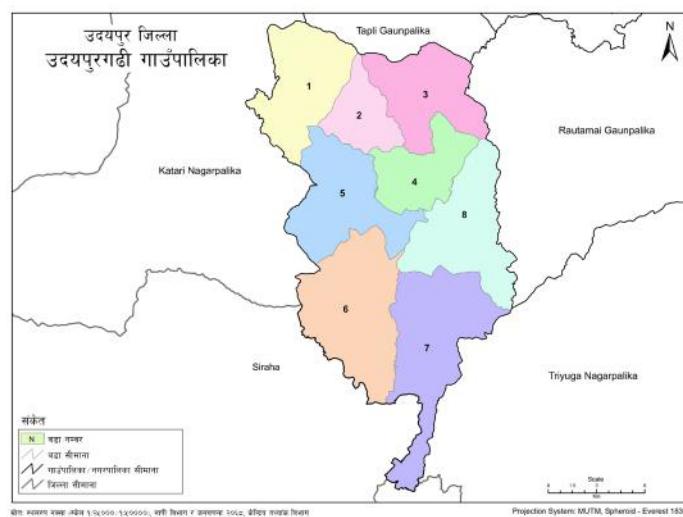


Figure 5: Map of Udayapurgadhi Municipality (Source: MoFAGA)

<sup>6</sup> This section is written based on the survey findings of Udayapurgadhi Municipality and review of program documents available in the municipality's web-site [www.udayapurgadhimun.gov.np/](http://www.udayapurgadhimun.gov.np/). The survey was undertaken by a team of three people comprising of Mr, Ashok Kumar Adhikari, Ms. Radha Upreti and Mr. Raj Kumar Tamang.

<sup>7</sup> This is based on 2011 census as presented in MoFAGA Portal [www.MoFAGA.gov.np](http://www.MoFAGA.gov.np)

Triyuga and Katari Municipalities too are experiencing similar problems.<sup>8</sup> Udayapur district was the epicentre of the 1988 earthquakes and the present day Udayapurgadhi too sustained severe damage. Around 10 people had died along with damage to numerous households and death of cattle. During the 2015 earthquakes, one person died in the district, numerous households experienced damages along with the loss of many livestock. Following the 2015 earthquakes, the municipality experienced a major wind storm around after one months period. Roofs of more than 100 households and around 25 school were blown away. This event was an additional shock when people were gradually recovering from the earthquakes.

There are eight wards in the Municipality with wards 1, 6, 7 and 8 experiencing rapid growth. There are around 500 squatter households in various settlements of ward numbers 7 and 8. This is relatively high for a small municipality like Udayapurgadhi. All wards of the municipality are connected with seasonal roads. An alternative road connecting Dharan-Chatara-Gaighat is being constructed. Work on the section of this road connecting Adheri-Nepaltar-Danuwarbesi-Gaiya is currently under construction. Agriculture and livestock rearing are major livelihoods of the municipality.

The budget set aside for construction related activities is NPR 109,593,500 out of a total budget of NPR 391,648,000 in the FY 2018/2019.

### **3.2.2 Policy Regime on Disaster Risk Reduction and Management**

President of the municipality Mr. Man Bahadur Kepchhaki Magar said, 'There is a lack of public awareness on disasters. Following the endorsement of the DRRM Act in 2017, the Udayapurgadhi Rural Municipality has prepared its Disaster Management Fund Operational Guideline following the template prepared and shared by the MoFAGA. There has not been a situation where the guideline had to be used. The preparation of the guideline is a positive step towards the operationalization of the DRRM Act in the municipality. However, the operational guideline only addresses fund utilization for disaster response and not for risk reduction purposes. This exhibits a relatively poor understanding on the raising and utilization of the funds in the municipality (including at the Federal level at MoFAGA) for risk reduction purpose.'

Udayapurgadhi Rural Municipality has not yet prepared its Municipal DRRM Act. However, the Municipality's DRRM focal person is aware of the model local DRRM Act shared by the MoFAGA.

There is a general understanding of disasters among the elected representatives. President Kepchhaki had said during the initial interview, 'Construction of buildings should not be allowed in the areas with potential landslides.' Later in January during the validation visit on 1 February, the Vice Chair Person Ms. Sanu Raut shared that 'building construction in areas with potential landslides have been stopped. Risk assessment is inevitable.' However, she said that these issues are beyond the municipality's knowledge and capacity.

### **3.2.3 Resilient Local Development Planning and Risk Reduction**

The budget and program document for the fiscal 2018-2019 includes a dedicated section on 'Environment and Disaster Management'. The total funds set aside for both environment and disaster management is NPR 6.59 million.<sup>9</sup> It includes a range of activities such as construction of embankments to protect communities living in high flood risk and landslide risk areas, purchase of equipment and

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<sup>8</sup> See <https://www.kantipurdaily.com/news/2018/10/29/154082201477846205.html> for the full story.

<sup>9</sup> See page number 9 of the Municipality's annual budget and program available at: <http://udayapurgadhimun.gov.np/sites/udayapurgadhimun.gov.np/files/उदयपुरगढी%20गाउँपालिकाको%20आ%20व%20२०२०अ%०७६%20का%20नीति%2C%20कार्यक्रम%20तथा%20बजेटहरू.pdf>

material requires for firefighting and for other emergency purpose. It also includes activities such as the demarcation of private, community and government forests, and removal of trees near the electrical poles.

There is no risk information for the municipality. Despite being located in a high disaster risk location, the municipality has no risk screening tools, nor a mechanism of risk assessment for key sectoral investments.<sup>10</sup> Interaction with NRCS staff revealed that there might be some maps at the district levels but they are not available for the municipal levels. A hazard map had been prepared for the district with the support from Save the Children in the year 2015.

### **3.2.4 Preparedness for Emergency Response**

There is no adequate emergency preparedness in Udayapurgadhi Municipality. There is a provision of first aid materials. The municipality has stored some non-food items. The Nepal Red Cross Society (NRCS) also has stored additional non-food items such as tents, clothes and utensils adequate for 200 families.

During the time of interview, the NRCS was in the process of preparing a District Preparedness and Response Plan (DPRP) for Udayapur district. The preparation of DPRP was ready by 1 February. Udayapurgadhi Rural Municipality has set aside funds for disaster relief. There is a fund of NPR 1,340,000 in the disaster relief fund. This includes the contribution of NPR.150,000 from a NGO Jalpa Integrated Development Society. During past disaster events, Udyog Badijya Sangh (FNCCI), NRCS, NRN, World Vision, other NGOs like Jalpa, Nava Prabhat have made substantial contributions.

The Ward Disaster Management Committee (WDMC) responsible for alerting disaster related information at the municipal level and also for post disaster preparedness have been formed. There is one rubber boat and other non-food items available with the Community Disaster Management Committee. A District Disaster response team (DDRT) has been formed at the district level. There are around three members from NRCS associated with National Disasters Response Team (NDRT), 1 person represents NRCS in the Regional Disasters Response Team (RDRT).

There is no provision of fire engine in the municipality. But there are three fire engines serving all eight (four rural and four urban) municipalities in Udayapur district. There are not any open spaces designated. Schools and community forest buildings are assumed to serve as open spaces and refuge. The NRCS is constructing an evacuation building for 100 people in Tapashowri.

The municipality coordinates with the CDO of the District Administration Office for emergency response. One such recent example is the distribution of relief material and rescue operation during a fire incidence in Nepaltar. There is no provision of Local Emergency Operations Centre in the municipality.

### **3.2.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

Despite numerous river systems flowing in the municipality and every year substantially huge flood damage occur, there is no provision of flood (or landslide) early warning system. A river gauge reader along with the provision of siren during flood events was set up in the district some time back. However, the system does not function at present. NRCS District Secretary Mr. Subash Shrestha told that it is 'due to lack of ownership by the Department of Hydrology and Metrology'; however there is one hand siren in the district. With the federal restructure and the Local Government Operation Act, the ownership now rests with the local municipality and serves as a case example for

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<sup>10</sup> Based on interview with Mr. Iswor Raj Thapa, Sub-overseer, Udayapurgadhi Municipality.

the need of orientation and training to local government officials including key actors and institutions working on DRRM at the local level.

There is no mechanism of risk transfer except for the compensation handouts following the disaster event or support through the social security funds. Some farmers have insured their livestock.

There is no information on recovery and reconstruction for the municipality.

### **3.2.6 Training and Capacity Building Needs**

There are a total of 66 staff positions in the municipality. Out of them only 32 positions are occupied positions with 34 vacant positions. The Vice Chairperson and one Sub-engineer had once participated for a three-day technical training on disaster preparedness in Biratnagar and Bhedetar. Apart from the one awareness program on disaster and climate change adaptation conducted by a NGO named Jalpa Integrated Development Society, there have been no trainings and orientation given to the municipality's other elected representatives. None of the staff have received any training on the legislative aspects of DRRM.<sup>11</sup>

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<sup>11</sup> Based on interview with Mr. Gunaraj Shrestha, Information officer and Pragya Parajuli, Communication and Information Technology Officer.

## PROVINCE 2

Province two has one metropolitan city, three sub metropolitan cities, seventy-three urban municipalities and fifty-nine rural municipalities. This is the only province that has higher number of urban municipalities than rural municipalities. Rajbiraj Municipality and Bhangaha Municipality have been selected to represent needs and capacity assessment in Province 2. The geography of the entire province is tarai (flood plains). Both municipalities selected for assessment represent urban municipalities, however the level of urbanization is higher in Rajbiraj Municipality. The following section describes the findings from Rajbiraj Municipality and Bangaha Municipality.

### 3.3 Province 2: Rajbiraj Municipality<sup>12</sup>

#### 3.3.1 Introduction to Rajbiraj Urban Municipality

Rajbiraj is known as the first systematically designed town in Nepal. Early work on its design started in 1938 and was claimed to emulate Jaipur City of India. Rajbiraj was later declared a municipality in 1959. At present, it has a total population of 69,803.

Floods, fire, earthquake, wind storm and cold wave are major disaster risks. Floods have been recurrent, with 2044, 2045 and 2073 has been some of the biggest events. During the 2015 Gorkha earthquakes 927 people were injured and numerous government and private buildings sustained major damages. Every year 2 to 5 people die due to cold wave and lightening. In recent years, heat wave in the months of April-May and June (loo wind) has led to deaths of humans, livestock and disruption of the functioning of economic activities.

Ward numbers 2, 6 and 7 are growing at a faster pace compared to other wards in the municipality because of better educational institutions, disaster risk factors, and health services and markets facility.

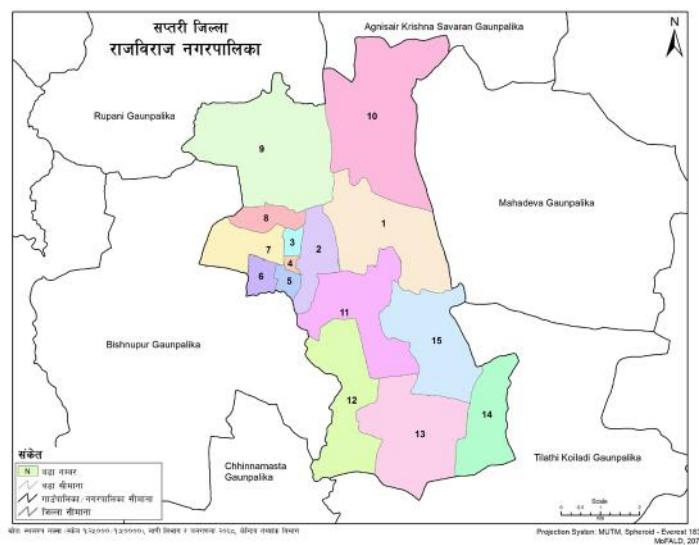


Figure 6: Map of Rajbiraj Municipality (Source: MoFAGA)

#### 3.3.2 Policy Regime on Disaster Risk Reduction and Management

The political leaders are generally aware of the key legislative changes at the federal level; and have initiated the process to draft its own act policy documents. As per Mayor Mr. Sambu Prasad Yadav, the Local DRRM Act should be complete and endorsed by June 2019. The municipality intends to hire expert consultants to prepare the draft. However, the understanding of legislative changes is only limited to only one to two staff and elected representatives within the municipality. Mayor Yadav says, 'all elected representatives, including ones at the ward and the municipal staff need to be oriented on the DRRM related legislative changes.'

Rajbiraj Municipality has constituted a Municipal DRRM Committee at the municipal level. However, ward level DRRM committees are yet to be formed.

<sup>12</sup> This section is written based on the survey findings of Rajbiraj Municipality and review of program documents available in the municipality's web-site <http://rajbirajmun.gov.np/ne>. The survey was undertaken by a team of three people comprising of Mr. Ranjit Shah and Mr. Sudish Jaiswal during 25 and 26 September 2018. The team also interacted with the Mayor, Deputy Mayor and the Chief Administration Officer to identify key training needs.

### **3.3.3 Resilient Local Development Planning and Risk Reduction**

The municipality is undertaking a detailed land use study to help make decisions on planning infrastructures.<sup>13</sup>

Rajbiraj Municipality has prioritized implementation of building code and for this purpose made arrangements for training municipal engineers, contractors and construction workers. The municipality has made an announcement to this effect in its annual budget and programs for the fiscal year 2018-2019. The municipality expects that the building code implementation will help increased level of awareness on safe practice of construction. The Mayor of the municipality Mr. Yadav rates the implementation of building code's effectiveness as 50 percent. However, all newly constructed buildings follow the building code. The municipal engineers monitor the building code implementation by physical inspection in 3 stages (plinth level, super structure and overall checking).

There is an incentive system established for effective enforcement of building code. For buildings that are constructed according to building code and coloured in pink are given 10 percent discount in tax. These types of house are recognized and rewarded in annual functions. And in case of non-compliance, there is a penalty system. For a non-compliant ground floor construction, the fine is NPR 4,000; for up to first floor the fine is NPR 6,000 and for stories above that the fine is NPR 10,000. There are also provisions to confiscate the construction materials from the site depending upon its nature. Till date there are no any old buildings marked as unsafe.

### **3.3.4 Preparedness for Emergency Response**

The municipality plans to prepare a Disaster Preparedness Response Plan. During the 2018-2019 period it intends to construction parks with lighting facilities.

NRCS, Sabal Nepal, Save the Saptari, Koshi Victim Samaj and Search for common ground are key NGOs working in Saptari District with their base in Rajbiraj. Most of these organizations have DRRM as key program component. Koshi Victim Samaj is known for its work on advocating the rights of flood affected population and for the relief and response work carried out during the 2008 and 2017 floods. The private sector played a huge role during the relief and response periods but they are not active during non-disaster periods. Albeit, their role in areas like in providing trainings, public awareness campaign and financial support at times during disaster is considered valuable.

There are only two fire engines to serve entire Saptari District. There are no classified open spaces in the municipality. During disaster events, nearby public schools serve as temporary shelter. The municipality has set up a DRRM fund with NPR 5 million for the year 2018-2019. The wards decide on the basis of their need but they are asked to set aside at NPR Hundred to Two hundred thousand. For any additional allocation higher than this amount, the wards themselves need to allocate from their own resources.

### **3.3.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

Similar to the situation in Biratnagar Metropolitan City, there is no urban flood early warning system (EWS) for Rajbiraj Municipality. Existing flood EWS are designed only for riverine flooding context, the nearest flood EWS is established in the Koshi River.

There is no mechanism to transfer risk apart from the compensation and the social security measures. However, the families who construct houses with loan monies are required to buy insurance schemes.

There is no information on recovery and reconstruction works in the municipality.

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<sup>13</sup> See Rajbiraj Municipality's Annual Budget and Program, 2018-2019, (page 3);

<http://www.rajbirajmun.gov.np/sites/rajbirajmun.gov.np/files/bajet%20niti%20karya%20mkram.pdf>

### 3.3.6 Training and Capacity Building Needs

There is a realization within the municipal team on the need for investments for DRRM but there are other competing priorities. There has been no trainings conducted for municipal officials and including elected representatives on DRR and Preparedness for Response. However, the municipality realizes that such trainings are required and will be of help to make the municipality resilient. In addition to trainings and knowledge, disaster response requires Personal Protective Equipment (PPE) which is considered beyond the current Municipal budgetary allocation.

Training on building awareness on the key legislative changes for DRRM, risk assessment that includes multi hazards, exposure and vulnerability along with trainings for fire-fighting, and awareness/training session on disaster response are the municipality's interest areas.

## 3.4 Province 2: Bhangaha Municipality<sup>14</sup>

### 3.4.1 Introduction to Bhangaha Urban Municipality

Bhangaha is a municipality in Mahottari District in Province No. 2. It was formed in 2016 occupying current 9 (wards) from previous 9 Village Development Committees. It occupies an area of 77.21 square kilometres. Though the official figures on population are 46,754 (male 21,990 and female 24,767), as per the Mayor of the Municipality the figures are much higher in the tune of 56,000.

Major rivers flowing through Bhangaha Municipality are Rato River, Bhutaha River, Barhari River and Bigahi (also known as Aurahi) River. Recurrent floods along the Rato River, occasional fire, earthquakes and wind storm are major risks faced by the municipality. Heat

waves and cold waves have been increasingly severe every year. The 2017 tarai floods has been the worst flood experienced so far, with more than 200 house completely damaged, and substantial number of animals and other house hold items were swept away. There was a similar flood damage experienced in 1993 when 40 households were washed away. A fire incident in 2009 entirely damaged 40 houses in ward 6 and 9. The fire took lives of few animals along with damage to stored food and other valuable assets. During the 2015 earthquake 35 households sustained minor damages and the water supply system destroyed.

As confirmed by the Mayor and the Chief Administration Officer of the municipality, only seventy percent of the households in Bhangaha Municipality have access to electricity, and communication. Hundred percent of the households have access to drinking water supply system. The literacy rate stands at fifty percent and is below the national average. And, only thirty percent of the population have access to banking service. The annual budget for FY 2074-2075 is NPR 587,274,872.

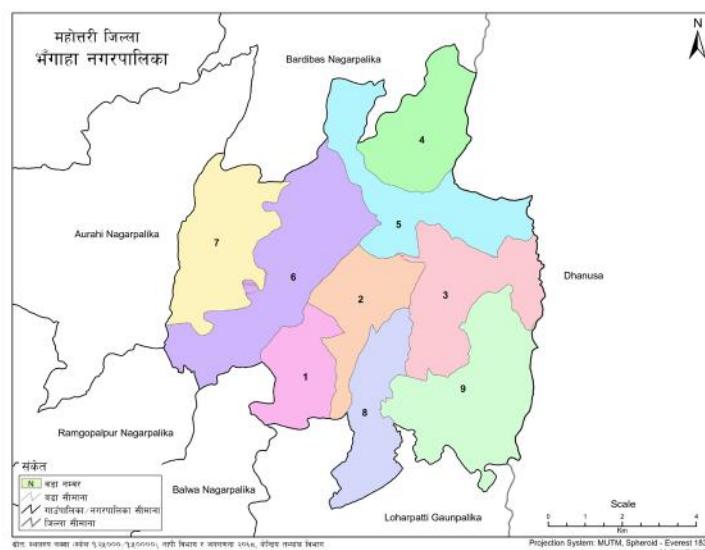


Figure 7: Map of Bhangaha Municipality (Source: MoFAGA)

<sup>14</sup> This section is written based on the survey findings of Bhangaha Municipality and review of program documents available in the municipality's web-site <http://rajbirajmun.gov.np/ne>. The survey was undertaken by a team of three members comprising of Mr. Ranjit Shah and Mr. Sudish Jaiswal during 27 and 28 September 2018. The team also interacted with the Mayor, Deputy Mayor and the Chief Administration Officer to identify key training needs.

### **3.4.2 Policy Regime on Disaster Risk Reduction and Management**

Bhangaha Municipality has not prepared its local DRRM Law, strategy or its policy. However, the Municipality has drafted a detailed DRRM work plan is awaiting endorsement from the municipal executive committee. In addition to this work plan, the municipality is working on preparing its river bed mining standard for the extraction of sand and gravels within the Municipality. These advancements made by the municipality are being made with minimal level awareness on DRRM between both elected and municipal staff.<sup>15</sup> The municipality has experienced several changes in the staff. There are no staff trained on DRRM. Consequently, there are neither stand-alone DRRM projects nor the concept of disaster risk has been integrated into its development.

The municipal leadership has no understanding on their roles and responsibility for DRRM. It has not been reflected in any of the municipal law or policy and in the draft work plan. As per Mayor Mr. Shah, it is mainly attributed to lack of knowledge on DRRM among the elected officials, lack of proactiveness from the municipal staff and to some extent their non-cooperation.

### **3.4.3 Resilient Local Development Planning and Risk Reduction**

The concept of planning for resilient development and consideration of disaster risk does not exist. There are no hazard and risk assessment undertaken in the municipality.

There is no mechanism set up at the municipality to record disaster event data on damage and losses. The only data that is stored is at the district level.

### **3.4.4 Preparedness for Emergency Response**

There is no fire emergency service available in the municipality. Open spaces have not been identified as there is plenty of 'open spaces' available. In certain locations where the settlements are dense, that would require evacuation route mapping and marking too are not marked or classified. There is no stockpile of emergency materials, medicines or availability of trained human resources for camp coordination and management. The DRR focal person mentioned that the municipality has some stockpile of medicines and first aid materials. There are 75 community buildings that can be used as safe shelter.

Since the municipal elections, there have been around 3-4 meetings conducted with the District Administration Office (DAO). A few disaster responses have been done under the leadership of the DAO. It included distribution of blanket and fire-wood particularly during the 2017 cold wave and flooding.

The municipality has set up disaster management fund at the municipal level. The total amount set aside is NPR two million. There is no operational policies and working procedures but the municipality is in the process of its preparation.

Though every year families are displaced by floods, there have been no recovery and reconstruction initiatives in the municipality.

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<sup>15</sup> Mayor Mr. Sanjeev Kumar Shah shared a bitter experience of the transfer of three Chief Administrative Officer within his tenure that started from September 2017.

### **3.4.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

Despite being affected almost on a yearly basis by Rato River floods, there are not any flood or other risk early warning system in the Municipality. Nor does the municipality has any mechanism of risk transfer other than the compensation and social security handouts to the identified population.

### **3.4.6 Training and Capacity Building Needs**

There has only been one orientation training on earthquake preparedness provided by a NGO *Nepal Pairabi Manch*. None of the elected representatives or the municipal staff have received any further training or orientation programs. The municipality team feels the need of organising orientation and trainings on DRRM mainly focussing on orienting both the municipal elected leaders and its staff focussing on orientation the federal legislative changes and its implication to the municipal governments, early warning system, disaster risk mapping, relocation of communities from high risk locations, and other core technical issues of DRRM.

## PROVINCE 3

Province three has three metropolitan cities, one sub metropolitan city, forty-one urban municipalities and seventy-four rural municipalities. Bhimeshwor Urban Municipality and Neelakantha Urban Municipality have been selected to represent needs and capacity assessment in Province three. With an exception of Chitwan district and parts of Nawalparasi district the entire province comprises of hills, valleys and mountains. The select two municipalities represents urban settings in the mountains. The following section describes the findings from Bhimeshwor Urban Municipality and Neelakantha Urban Municipality.

### 3.5 Province 3: Bhimeshwor Municipality<sup>16</sup>

#### 3.5.1 Introduction to Bhimeshwor Municipality

Bhimeshwor is an urban municipality situated in Dolakha district. The municipality has been named after the very ancient and sacred destination Dolakha Bhimeshwor Temple. The municipality was declared by Nepal Government on 27 Falgun 2073 BS. combining 3 different previous VDCs (Suspa Chhemawati, Boch and Lakuridanda) and 1 Municipality (Bhimeshwor Municipality). The merger of adjoining municipalities has increased the population of Bhimeshwor Municipality. Ward numbers 2, 3, 4, 5 and 6 experience high population growth rate compared to other wards.

The region is bordered by the Sun Koshi River on the west and the Khimti Khola on the east. Tama Koshi River flows along the municipality. To the north east lies the impressive Rolwaling Himal to the western edge of which are such peaks as Gauri Shanker and Melungtse. The beauty of Bhimeshwor and Dolakha region comes at a ‘price’ – the steep slopes, the fragile mountains and the river systems also bring in disasters. Bhimeshwor is one of the worst hit areas by the 2015 earthquakes. The area falls in one of highest Glacial Lake Outburst Flood zone emanating from Tsho Rolpa Glacial Lake situated along the Rolwaling Mountain.

Other key disasters faced by Bhimeshwor Municipality are fire, landslides and droughts. During the 2015 earthquakes, the Dolakha District experienced the death of 176 people. It further damaged 59 health posts, 53986 sheds, 126 cows, 119 buffaloes, and substantial number of other livestock and poultry.<sup>17</sup> Subsequent to the earthquakes, later in 2017, there was a massive destruction of houses and farmland due to landslides. 3 people died and some houses were displaced during the 2017 landslides in Lakuidada Katkutta of Ward Number 9. Nepal Red Cross Society and the Municipality distributed relief materials to the displaced families.

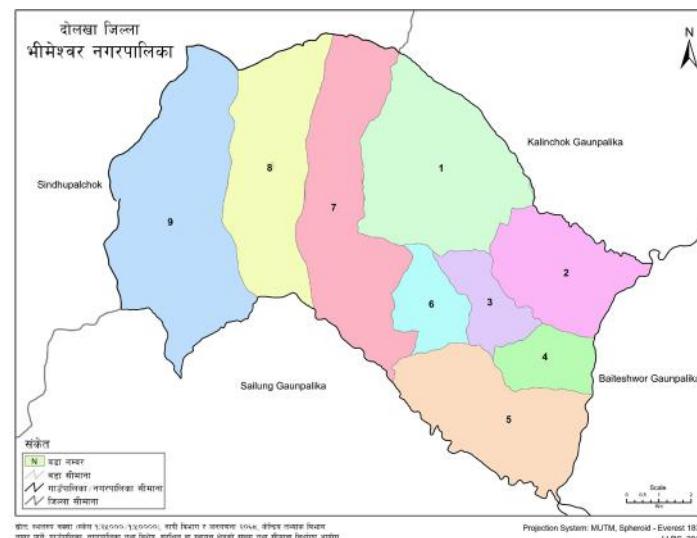


Figure 8: Map of Bhimeshwor Municipality (Source: MoFAGA)

<sup>16</sup> This section is written based on the survey findings of Bhimeshwor Urban Municipality and review of program documents available in the municipality's web-site <http://www.bhimeshwormun.gov.np/>. The survey was undertaken by a team of two people comprising of Ms. Kabita Panta and Mr. Santosh Dahal during 25 and 26 September 2018. The team also interacted with the Mayor, Deputy Mayor and the Chief Administration Officer to identify key training needs.

<sup>17</sup> There is no separate disaster damage data for 2015 earthquakes for the Municipality.

Key development indicators of the municipality show that it is better-off compared to many other municipalities. For example, the literacy rate is 68.91 percent. 100 percent of households served with water supply. 100 percent of households are served with electricity, have access to communication, and financial services. Dolakha district is also known for one of high remittance economy. The municipal budget for fiscal year 2017-2018 was NPR 486,931,511.

### **3.5.2 Policy Regime on Disaster Risk Reduction and Management**

Prior to the 2015 earthquakes, Bhimeshwor Municipality was considered a classic case of 'how not to urbanize' owing to its mushrooming multiple storied cement concrete buildings built without following proper building codes, lack of adequate roads, open spaces and an abysmal sanitation and drainage. Multiple buildings emerged along fragile sloping land. The ongoing construction of Upper Tamakoshi Hydropower Project, gateway to the Sagarmatha base camp via Jiri, tourism to the norther areas around Tsho-Rolpa and Gauri-Shankar Rural Municipality, and road connecting Ramechhap have been major drivers of urbanization. The 2015 earthquakes led to major damages to its building stock including ones built with cement concrete. Its hotel industry got a major impact apart from other sectors. The municipality's elected officials are in the process of preparing municipal profile – but are not aware of the rich data collected after the earthquake particularly by NRA.

All key actors at Bhimeshwor Municipality (e.g the Mayor, the Deputy Mayor, focal person for DRRM and engineers) are aware on the need for the Municipal Disaster Management law, plan, and policy. The Municipal DRRM Law has been drafted and tabled in the fourth municipal assembly. The Municipality has formulated DRRM committee at the municipal and ward levels in June 2018. The focus till date has been on addressing the reconstruction and recovery efforts being undertaken in the municipality. The municipality has not constituted Disaster Management Committee neither at the municipal and nor at the ward levels.

### **3.5.3 Resilient Local Development Planning and Risk Reduction**

In September 2018, Mayor Mr. Bharat Bahadur KC briefed the order of development priorities to Plan8 Risk Consulting Team<sup>18</sup>, 'Disaster Risk Reduction and Management as such does not fall in the top priority list but somewhere seventh or eighth in the order of priorities.' He further said, 'The Municipality's pressing priorities are drinking water supply, roads, irrigation facilities and electrification. Reconstruction and recovery is our overall priority.' It is evident that DRRM as a 'stand-alone' sector falls within the seventh or the eighth order of priority. However, there lies a substantial scope to understand risk for each of the priority sectors such as water supply, irrigation or roads and to support the municipality in reducing risk to each of these sectors.

Despite a weaker understanding on the integration of DRRM, the Bhimeshwor Municipality's programs and policies mentions DRRM. The challenge, however, lies in its implementation. Just by standing on top of the hill at Charikot Bazaar, looking downhill, towards north one can understand how 'scientific' our previous generations have been in terms of settling and expanding human settlements on fragile mountain slopes. The upper reaches–where there is less water availability and the slope is steep–is set aside for forestry. In the lower end, the flat and fertile land is used for agriculture. It is only in the foot of the slope, settlements have been planned. This is where there is enough water (uncontaminated by farming practice). Settlements in the upper reaches would have been prone to landslides and in the lower reaches they would have 'damaged' the fertile land. In doing so, the communities also were able to avoid potential liquefaction potential areas (but perhaps without not understanding the effects back then). This ancient knowledge and practice of understanding risks and maximizing the use of resource base is being lost due to pressures in expanding settlements even scarce in fertile hill spots. Advanced and 'modern' approach of undertaking

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<sup>18</sup>The team was led by Anil Pokhrel, author of this report.

Risk Sensitive Land Use Planning (RSLUP) have not been performed in this municipality to check sprawling of settlements in the sloping lands or in the fertile land that has higher earthquake risk, liquefaction potential, landslide or flood risks. As per the municipal engineers, they had made request to UNDP to provide technical and financial support in the preparation of RSLUP. However, UNDP's list of municipalities did not include Bhimeshwor. Following the earthquake, there is a high level of expressed need to undertake a RSULP for the municipality.

The earthquakes have led to the creation of major cracks and fissures in some settlements making it unsafe for habitation. The municipality and the connecting highway is prone to increased landslide risks. DUDBC has undertaken an initial investigation of the area but the results have not been shared with the community and Municipal Office. Housing reconstruction is ongoing despite the results of the investigation is awaited.

There are no hazard and risk assessment undertaken. There is no risk or hazard map available. From a general observation perspective, the Deputy Mayor of the municipality, Ms. Kamala Basnet is aware that ward numbers 9, 2, 5 and 8 are high risk wards to landslides. However from an overall perspective, the Deputy Mayor says, 'ward numbers 9, 1, 8, 2, and 7 are high risk wards.'

Within the municipality, there is no understanding on the need to undertake risk screening or risk assessment for sectoral investment projects, but the municipality intends to initiate a system to screen risk.

The entire region faces a double whammy of extreme rainfall events leading to either floods, landslides and washing away of the rich humus during monsoon season or water shortage (droughts) during the winter months. To manage droughts and water availability, the municipality and district agencies are promoting the concept of conservation ponds (*pani pokhari ra ahal*) in the hill reaches. There is a growing trend of conservation ponds in the municipality and in the entire Dolakha district for environment.

There is no system in the municipality to record disaster related data.

### **3.5.4 Preparedness for Emergency Response**

The Municipality had established 'Disaster Management Fund' earlier in 2018 with an initial deposit of NPR 1 million. The municipality has made expenditure of 300,000 and there is a remaining balance of NPR 700,000. The municipality is yet to prepare their disaster management fund guideline and the fund is being currently used as per the need during disaster events. There is no mechanism to allocate higher amount of resource to high risk wards.

Monsoon Preparedness Plan was not prepared in this municipality for the year 2018.

Nepal Red Cross Society is active in Bhimeshwor municipality. It focusses on distributing relief materials after any disaster event. Rescue relief materials are not stock-piled in the municipality. Other NGOs are focussed on reconstruction and recovery for the 2015 earthquakes.

There is one fire engine in the municipality. The municipality also has made provisions to make fire extinguisher mandatory at hospitals, bank and shops. The municipality has not identified open spaces 'as there are many open spaces' and there are no planned evacuation routes. There are no safe shelters constructed but there are community buildings in Ward Numbers 1, 6 and 9. There are no trained task forces, as it is assumed that during disaster events the armed force will do the rescue. There are no procedures for evacuation, or the assignment of roles and responsibilities for evacuation. The municipality does not have trained human resources for camp coordination and camp management, however, the DRR focal person/Engineer mentioned that he was trained on camp coordination and management. These facts also exhibit the lack of awareness on the legislative aspect in terms of preparedness – which entrusts municipalities to identify and train youth volunteers at the community level for search and rescue.

The municipality does not have a Municipal Emergency Operations Centre and neither a stock pile of emergency supplies.

### **3.5.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

There is no established warning system for any likelihood of disaster event targeting the municipality. However, there is a functional GLOF warning for Tsho-Rolpa Glacial Lake along Tamakoshi River. Communities in the vicinity of the flood plain will be informed using a siren.

As everyone in the municipality has access to communication system such as FM radio, mobile and telephone it has potential to reach out in case of a disaster event, the municipality expresses the need to design multi-hazard early warning system linking floods, landslides and fire.

In the event of disasters, the municipality engages in rescue and relief activities. In some cases, the municipality also provides cash assistance to those affected. There is no practice of risk transfer except for the compensation and social security handouts by the municipality.

Following the 2015 earthquakes, there is substantial reconstruction and recovery program ongoing. Dolakha district is treated as a case study for a faster pace of housing reconstruction compared to other 13 districts affected by the earthquakes. Out of a total of 69,608 households identified as beneficiaries for reconstruction of private shelters, 42459 have completed construction and have availed the third tranche; 50,616 have taken second tranche and 64,300 have had grant agreement signed.<sup>19</sup> This reflects a good number of masons, supply chain and support system within the NRA district office including at the Bhimeshwor Municipality. Some key organizations working on reconstruction and recovery are National Society for Earthquake Technologies-Nepal, SOS (House Construction Program – however, after the completion of construction work there has been leakages in the buildings), UNDP, numerous other NGOs.

There are rigorous ‘physical inspections’ for owner built private houses (called ‘shelters’). Reconstruction of shelters require prior approval. There are frequent checks and supervisions to be undertaken by site engineer if the building meets the grant criteria. Private buildings not meeting the criteria are not provided with subsequent tranches of grant funding. The NRA has approved an additional grant of two hundred thousand for poor families who do not own land. However, there are no gender specific policies related to reconstruction and recovery. It is interesting to note that none of the private shelters have integrated the need of the PWDs.<sup>20</sup>

During an earlier assessment conducted by *Plan8*, it was noted that the municipality did not relax its building code for the recovery and reconstruction purpose. The municipality does not approve unsafe building construction. If the construction is found not meeting the standards of the code, they have measures to demolish. Further, the municipality does not provide any future support in terms of utilities and legal document to families flouting the codes.

One of weak areas on reconstruction and recovery has been in planning integrated settlements and in relocating settlements that are in unsafe zones. There is no adequate capacity within the municipality for planning and designing integrated settlements. National Reconstruction Authority and organizations such as Oxfam have recently designed programs to help the Bhimeshwor Municipality and other adjoining municipalities to plan and design integrated settlements. Panighat at Goshimapa of ward number 1, Kutkutta of ward number 9, and Bhimsela of ward number 5 are such case example.

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<sup>19</sup> National Reconstruction Authority webpage, <http://www.nra.gov.np/np> accessed on 28 December 2018

<sup>20</sup> Plan8’s assessment in Dolakha and Sindhupalchowk (January, 2018) showed that the national earthquake reconstruction program is not structured to reach out the most vulnerable, elderly, poorest and persons with disabled. A thorough investigation undertaken identified that none of the houses constructed in both the districts were designed to meet the need of the PWDs.

Apart from the reconstruction and recovery aspects, the municipal staff and the elected leadership have not been oriented and trained on DRRM. None of the staff members have attended any DRR related training.

### 3.5.6 Training and Capacity Building Needs

The Information Officer and DRRM focal person interviewed the need to prioritize

- (i) Risk Sensitive Land Use Planning,
- (ii) Multi-hazards mapping,
- (iii) Separate section for updating data base (disaster data) using GIS, and
- (iv) Assigning a focal person for disaster related update. The municipality is in the process of preparing its organizational structure. As per the interviews Conducted with the DRR Focal Person and the Information Officer of the municipality, all staff positions have been filled. In addition to the existing number of staff, the municipality is in the process of hiring new internal positions.

There are no ongoing training programs to train on DRRM. The mayor, deputy major and the administration officer prioritize the following trainings on DRRM;

- (i) Awareness about the disaster risk and on the legislative changes that has taken place at the federal and the aspects that has implication to the municipality,
- (ii) Training on comprehensive disaster risk reduction and management,
- (iii) Trainings on safe building construction, and
- (iv) Training related to preparedness to the communities.

## 3.6 Province 3: Neelakantha Municipality<sup>21</sup>

### 3.6.1 Introduction to Neelakantha Municipality

Neelakantha Municipality lies in Dhading District of Province 3. The municipality was established on 18 May 2014 merging with the existing Neelakantha (Dhading Besi), Sunaula Bazar, Murali Bhanjyang, Sangkosh Village development committees. It was later again restructured in 2017. The municipality has been divided into 14 wards for administrative purpose.

The municipality occupies 10 percent of total area of Dhading District. Among 199.85 sq.km of total area of the municipality, forest occupies 99.31 square kilometers which is almost 50 percent of the total area. The land form is mostly sloped and terraced. As per the LDCRP Report, 2018 the municipality has total population of 71,131. And, the total number of households in the municipality is 15,239.

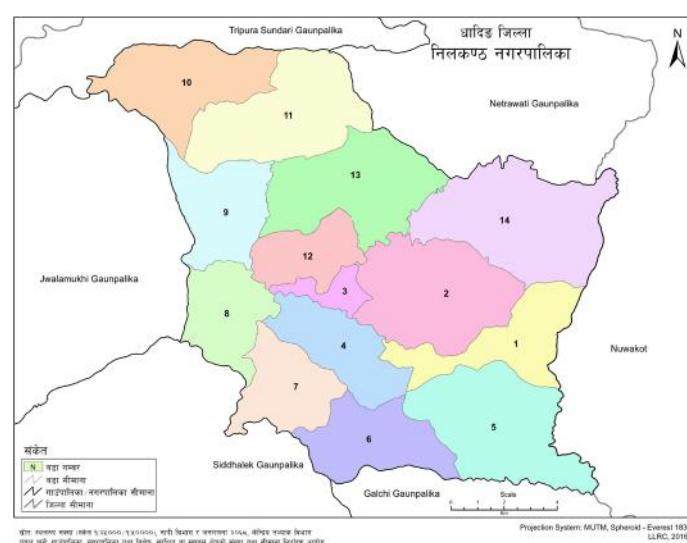


Figure 9: Map of Neelakantha Municipality (Source: MoFAGA)

<sup>21</sup> This section is written based on the survey findings of Nilkantha Urban Municipality and review of program documents available in the municipality's web-site <http://www.neelakanthamun.gov.np/>. The survey was undertaken by a team of two people comprising of Ms. Amrita Pokharel and Mr. Narayan Kharel during 27 and 28 September 2018. The team also interacted with the Mayor, Deputy Mayor and the Chief Administration Officer to identify key training needs.

Newar are the predominant community living in this municipality. Brahmin, Chettri, Kumal, Magar, Tamang, Gurung, Dalits and some minor ethnic groups are also found.

Key disaster risk in the municipality are – in the order of priorities identified by LDCRP: (i) earthquake, (ii) landslide, (iii) road accidents, (iv) lightning, (v) floods, (vi) fire, (vii) wind storm, (viii) droughts (ix) wild animal attacks, (x) epidemics, (xi) hailstones, (xii) pest infestation, and (xiii) electrocution in live wire. The municipality was severely impacted severely during the 2015 earthquakes. Forty-one people had died, more than 10483 HHS (85% of the total households) houses were damaged, along with millions worth of damage to other livelihood in the municipality.

### **3.6.2 Policy Regime on Disaster Risk Reduction and Management**

Through ADRA-Nepal's BURDAN project, and with the local support of RMD Nepal, the municipality's elected representatives and staff have been oriented on the key legislative changes on DRRM and Climate Change Adaptation in Nepal. This has been done in the context of the preparation of Municipal LDCRP in 2018. A Local Disaster Management Committee (LDMC) has been formed. However, the municipality has not started working in the preparation of its municipal DRRM law. The municipality considers it as a step in the process as the plans for DRRM have been identified in the needs for the LDCRP.

### **3.6.3 Resilient Local Development Planning and Risk Reduction**

Neelakantha Municipality has prepared its Local Disaster and Climate Resilience Plan (LDCRP) in 2018.<sup>22</sup> As a part of the LDCRP, all fourteen wards have prepared their hazard maps including their vulnerability and capacity assessment. It also has completed preparation of its long term Urban Development Master Plan in 2018.

The municipality has formulated a 'municipal disaster management committee'. The municipality is enlisted and is being developed as one of 13 smart cities in Nepal. Though announced in 2017 the municipality is unaware of the work on developing the municipality as a smart city with the support of any development partner or from the GON's federal program.<sup>23</sup>

The risk information, despite, the fact that it has been recently prepared, is not available in usable formats for undertaking sectoral risk assessment for infrastructure development. The municipality does not have a Risk Sensitive Land Use Plan, but has included land pooling plan in the Municipal Master Plan, 2018.

### **3.6.4 Preparedness for Emergency Response**

The municipality does not have adequate emergency search and rescue equipment and stockpile of materials required for disaster response. The chairperson of Environment and Disaster Management Committee said that existing Search and Rescue (SAR), first aid materials and equipment are stock remaining from that of 2015 earthquake response support. He further added that 2 kits of SAR tools and equipment have been recently provided for Ward Numbers 7 with the support of a NGO. According to the Ward chairperson of Ward Number 7, the material was distributed by VSO for Marshyangchhap and Peepalchhap of the ward but no training is provided for the use of materials. The municipality is not considered dense by the municipal staff. IOM has an ongoing

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<sup>22</sup> Neelakantha Municipality's LDCRP was prepared with technical and financial support of ADRA-Nepal and local NGO RMD Nepal as a part of the BURDAN Project.

<sup>23</sup> It was announced during the International City Summit and Mayors' Forum held from 10 to 13 September 2017 in Seoul, the capital of South Korea. See: <http://kathmandupost.ekantipur.com/news/2017-09-19/south-korea-to-assist-nepal-in-developing-smart-cities.html>

support in the district to support the municipal government in building its capacity for emergency response including for camp coordination and management; and for planning and constructing multipurpose community centre to be used as evacuation centre in an event of a disaster.

Guided by the Local Government Operation Act, 2017, the District Administration Office (DAO) from Dhading is in the process of capacity building and handover of the Disaster Risk Management roles to the local governments. A two-day workshop was organised for the elected mayors, chairpersons and appointed chief administrative officers in the local governments on DRR.

As per NRCS Dhading, there are few people trained on emergency response but the number of people is far inadequate compared to the risk faced by the municipality.

This municipality has one fire engine, considered inadequate.

### **3.6.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

There is no early warning system available in the municipality. Though there are not any risk transfer mechanism(s) established – except from the compensation and the social security handouts. Quite a large number of farmers have insured their cattle. Some families have also started insuring their vegetable farms.

### **3.6.6 Training and Capacity Building Needs**

As per Mayor Mr. Bhim Prasad Dhungana, the municipality's priority training and capacity building needs are orientation on the legislative changes on the DRRM to all its elected representatives and municipal staff. Given that the municipality has set up its municipal disaster management committee, it becomes necessary that the committee members – including elected officials and staff are provided trainings, knowledge and skills on DRRM. Similarly, there is need for setting up of multi-hazard early warning systems for key disasters such as floods, landslides and fire.<sup>24</sup> The organizational structure of the municipality is in the process of being finalized. The number of positions in the municipal organization has not been confirmed.

The Chief Administration Officer suggested that the municipality needs support for the formulation of local DRRM Act, strategic action plan and policy. Similarly, the chairperson of Environment and Disaster management committee said that there is a need of some trainings like: psychosocial counselling training, first aid, climate change coordination and management training, etc. He also added the need for the identification of helipad in each ward/community for early response in the event of a disaster.

Trainings on search and rescue is a priority of Mayor Mr. Dhungana. He suggests that the trainings should also be backed up with adequate search and rescue materials and equipment. Other trainings identified are:

Detailed risk assessment of the municipality; risk screening, risk assessment for sectoral investments such as water supply, irrigation and roads; orientation on the DRRM legislation and in the preparation of the municipal act, strategic action plan and its policy.

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<sup>24</sup> According to the representative from NRCS, it will be better to install the early warning systems (siren) at the highest location within a municipality like in telephone tower. So that it will be able to capture the possible maximum area at once.

## GANDAKI PROVINCE

Gandaki Province (also known as Province four) has one metropolitan city, twenty-six urban municipalities and fifty-eight rural municipalities. Baglung Urban Municipality and Machhapuchhre Rural Municipality have been selected to represent needs and capacity assessment in Gandaki Province. With an exception of parts of Nawalparasi district, the entire province comprises of hills, valleys and mountains. The select two municipalities represent urban and rural settings in the hills and mountains. The following section describes the findings from Baglung Municipality and Machhapuchhre Rural Municipality.

### 3.7 Gandaki Province: Baglung Municipality<sup>25</sup>

#### 3.7.1 Introduction to Baglung Municipality

Baglung Municipality serves as the major centre for business, finance, education, service and healthcare for the people of mid-Kali Gandaki valley that encompass Beni, Jaljala, Baglung, Kushma, Kathekhola, Galkot, Phalewas and Jaimuni local bodies. This urban municipality is located at the cross-section of Kaligandaki corridor highway and mid-hill highway that transverse Nepal in north-south and east-west directions.

Key disaster risks in the municipality are landslide, lightning, earthquake and fire. Every year on an average two people die due to lightning. In 2007 and 2015 there was a major fire

incident that led to the damage of numerous houses and other properties. The landslide in 1999 damaged large swathe of cultivable land. Landslide and fire events are infrequent and small in magnitude of economic losses. Other risks the municipality faces are storm winds and flash floods.

Key development indicators of the municipality shows that it is better off compared to many other municipalities. For example, the literacy rate is 83.15 percent. 90 percent of households have access to drinking water supply. 100 percent of households are served with electricity, have access to communication, and financial services. Baglung is also known for one of high remittance economy. The municipal budget for fiscal year 2017-2018 was NPR 673,908,637.

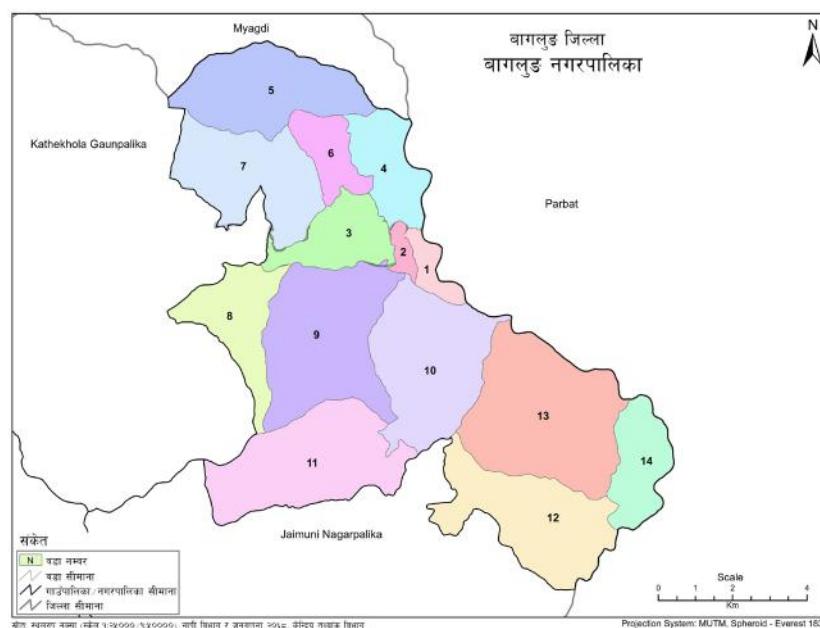


Figure 10: Map of Baglung Municipality (Source: MoFAGA)

<sup>25</sup> This section is written based on the survey findings of Baglung Municipality and review of program documents available in the municipality's web-site <http://baglungmun.gov.np/en>. The survey was undertaken by a team of two people comprising of Mr. Sagar Mudvari and Mr. Rukmina Subba during 26 and 27 September 2018.

### **3.7.2 Policy Regime on Disaster Risk Reduction and Management**

The municipality is in the initial phase of implementation of the DRRM Act 2017. The Municipal DRRM Act has been passed by the Municipal Council in 2018. The municipality has plans to publish notification of its effect through a gazette. The municipality intends to draft a DRRM regulation based on the local DRRM Act.

The municipality has allocated funds for disaster management. For the year 2018-2019 the municipality has allocated a total of NPR 2.0 million for 'disaster and natural hazards management program'<sup>26</sup> (*bipad tatha daibi prakop byabasthapan karyakram*).

### **3.7.3 Resilient Local Development Planning and Risk Reduction**

Though there is no planning process for resilient development in the municipality, it has an established process for approval / disapproval of building plans and designs. There are formalized standards and codes used to review the building drawings. Municipal engineers monitor compliance. The engineers and technical team interviewed mention that the task of enforcing building code is challenging. They have come across numerous cases of violation of building code. There are legal sanctions, fines and potential dismantling of the building if the code is not met. However, there are no incentives in place for following the codes.

Risk assessments have not been undertaken for the municipality. A consortium of INGOs (Hellen Keller, Care Nepal and RTI) have helped prepare a hazard map for ward number 11 under the Su-aahara program (II). The map was not available for review to the survey team.

There is a small squatter settlement in Ward Number 3. These houses are considered 'people with intentions to grab public land' and the municipality does not see it as a major problem.

The municipality has established a system to record data on disaster losses. The technical department uses a register to hand write cash payments made to the families severely affected by disaster events. While this is a good start, it is not considered systematic as it does not capture the extent of damage and more importantly the hard copy register has a chance of being lost or perhaps damaged during a disaster event. The municipality has plans to transfer disaster data recording responsibility to respective wards.

As per the Vice Chairperson of the municipality, the level of Mardi River has increased in recent years due to the construction of a dam. The level of the river has risen more than the level of adjoining villages. The areas that are in high risks are: Dhital, Bhedabari Ward Number 6, Khoraka Mukh, Nayapul, Ward Number 8, Anantethati and Pathrebasti Ward Number 5 and Lamachaur Samibagar Ward Number 4. Shifting water source more than 4 kilometres upward could help in reducing the risk factor caused by this dam. Further, due to this dam restricts proper usage of natural resources and cultivable land. The rural municipality is in urgent need of support to help reduce this risk.

### **3.7.4 Preparedness for Emergency Response**

The municipality has an information in the process of establishing a 'disaster management section'. It has identified open spaces at Dhaulagiri Multiple Campus, Bal Mandir premises, Bangechaur and Shahid Smriti, Bal Udhyan, Birendra Aishwarya park.

The municipality has one fire engine. However, in the case of emergency, the movement of fire truck is impeded by low hanging electrical wires and narrow streets. Further, the hilly terrain with high slope, absence of all-weather road in all the areas and sharp bends on the road makes it difficult to manoeuvre the fire truck. There is only one fire truck driver. In his absence, or say for instance when the sole driver is sick or unable to drive, there is no option.

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<sup>26</sup> See Budget and Program for Baglung Municipality for FY 2018-2019. (line item number 40.2).

Open spaces have been identified, in partnership with the International Organization for Migration (IOM). These spaces are protected by fencing. The Municipality has expressed commitments to declare more open spaces for humanitarian purposes and a decision reflecting this commitment has been included in the Municipality Annual Plan for the FY 2018-2019.

The municipality has notified relevant authorities of Dhaulagiri Multiple Campus, Kalika Bhagwati Ghuthi (trust) and Bal Mandir who have given the land for open space not to plan any construction on the identified open spaces without prior approval from the Municipality.

The municipality has partnered with Prabhu Bank (a private bank) to beautify and conserve Shahid Smriti Park, an open space, in Bangechaur. Prabhu Bank has developed a master plan to develop the garden and in beautifying this park. The work on gardening has begun. The District Chamber of Commerce too provides support to the municipality on DRRM.

The municipality has trained human resources for camp coordination and camp management. The information officer has received a training organized by IOM. An emergency shelter has been constructed under the urban development plan of the GON, in Simle of Ward Number 3 of the municipality.

The municipality does not have a stockpile of emergency relief and response materials. The Nepal army has some stockpiling (its service area is not limited only to the municipality). Plan International too has stockpiled some non-food items such as tarpaulins. There are some light search and rescue and first aid items in items stored in select few schools.

There is no Municipal Emergency Management Centre established. However, there are trained Nepal army forces; and task forces created by NRCS to serve during times of emergency. As an emergency preparedness in the event of disaster, the Municipality has plans to build one helipad each in all wards with technical support from the Nepal Army. The primary objective of these helipad is to evacuate pregnant women and people with emergency health condition.

The private sector has raised funds, including from abroad, to help those affected by disasters. The local chamber of commerce has actively involved in post-disaster coordination meetings and actions.

The District Administration Office (DAO) is mandated to prepare a District Disaster and Preparedness Response Plan (DPRP). The Baglung District intends to develop its DPRP soon. The municipality too realizes that a Disaster Response Plan has to be prepared for the municipality. It has plans to prepare its Municipal Disaster Response Plan in 2019. .

### **3.7.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

There is no established warning system for any likelihood of disaster event. As everyone in the municipality has access to communication system such as FM radio, mobile and telephone it has potential to reach out in case of a disaster event.

In the event of disasters, the municipality engages in rescue and relief activities. In some cases, the municipality also provides cash assistance to those affected. There is no practice of risk transfer except for the compensation and social security handouts by the municipality.

There are no ongoing recovery and reconstruction initiative in the municipality.

### **3.7.6 Training and Capacity Building Needs**

In terms of the capacity to manage DRRM, the municipality has not conducted any trainings forward DRRM committees or community level. NRCS had organised community level trainings on DRRM in wards 1, 7, 8 and 11

but there has not been any follow up or subsequent training in other wards. Only a few staff have taken trainings on DRRM and climate change adaptation. The municipal organizational structure is still being finalised and thus not available to reflect on the sizing and nature of staffing. The Mayor of the municipality Mr. Janak Raj Paudel has said, "*There is a strong need to train elected representatives and municipal staff on DRRM. Our major issues are inadequate preparedness and response equipment, we do not have a DRRM plan.*" The organizational structure of the municipality is in the process of being finalized. The number of positions in the municipal organization has not been confirmed.

While there are some cases of staff from I/NGOs who have taken trainings and orientation on the legislative changes on DRRM, none of the municipal staff have taken trainings on DRRM policy, strategy and the Act and the broader legislative changes at the national level. Further, no one in the municipality have been trained on (i) risk assessment, (ii) on risk reduction, (iii) post disaster needs assessment.

There are no development partners or donors at present that provide technical or financial support to the municipality other than the IOM. A major urban infrastructure improvement project supported by the World Bank is in the pipeline. Other private sector that are active in DRRM are Chamber of Commerce and Prabhu Bank. Kalika Bhagwati Guthi and Dhaulagiri Multiple Campus are key active stakeholders.

## 3.8 Gandaki Province: Machhapuchhre Rural Municipality<sup>27</sup>

### 3.8.1 Introduction to Machhapuchhre Rural Municipality

Machhapuchhre Rural Municipality lies in Kaski district of Gandaki Province. The total population of the municipality is 21,868 (9,970 male and 11,898 female) living in 5,512 households. Major disaster risk in this rural municipality includes flood, landslides, earthquake, lightening and fire. Spring sources have been yielding decreased water flow impacting drinking water supply systems. The municipality was announced in March 2015. The municipality's altitude ranges from 1026 meters to 6998 meters – indicating a huge variation and a diverse ecology within the municipality.

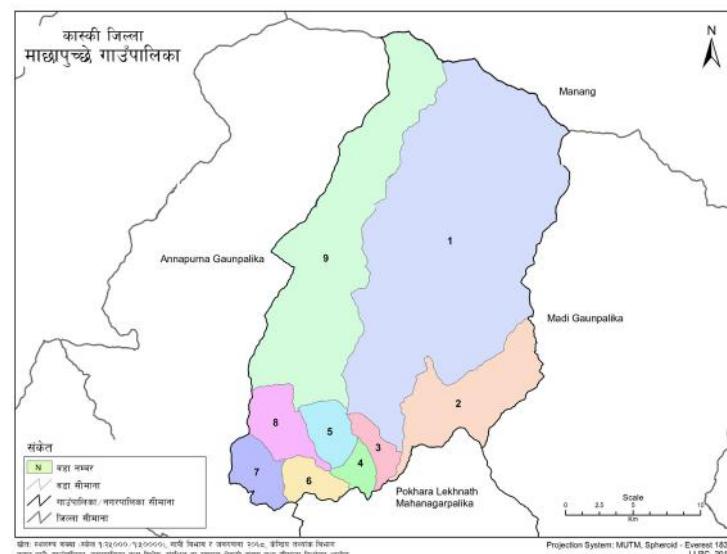


Figure 11: Map of Machhapuchhre Municipality (Source: MoFAGA)

The May 2012 Seti Gandaki floods has been the most devastating disaster event so far. Forty people died, 120 of them are missing (their bodies were not recovered) along with substantial damage and loss of homes, livestock, and farm lands. During the 2017 monsoon season, landslide damaged 25 houses, numerous other houses sustained partial damages along with loss of animals, land and property.

<sup>27</sup> This section is written based on the survey findings of Machhapuchhre Rural Municipality and review of program documents available in the municipality's web-site <http://machhapuchhremun.gov.np/>. The survey was undertaken by a team of two people comprising of Mr. Madhu Sharma and Ms. Subigya Ghimire on 25 and 26 September 2018.

### **3.8.2 Policy Regime on Disaster Risk Reduction and Management**

Machhapuchre Rural Municipality has drafted and endorsed its DRRM Law. The law will become effective once it is published in the notification Gazette. The municipality is currently in the process of drafting its regulations. The process of formulating the local DRRM Act and the rules and regulation has helped a drastic increase in the level of awareness on DRRM among elected leaders and staff.

The rural municipality has prepared its plan and program for fiscal year 2018-2019. The plan identifies earthquake risk as a priority. The plan states that “to make all the buildings and settlements within this municipality earthquake resilient, settlement development and building code implementation (*basti bikash tatha bhawan nirman samhita*) will be strictly followed while issuing building permits. Similarly, the plan also states that masons involved in constructions will be provided training in line with national building code implementation so that constructions can be carried out through these masons with adequate capacity.

### **3.8.3 Resilient Local Development Planning and Risk Reduction**

There are no disaster risk assessments undertaken for the municipality. In the past, there was floods in Ribhan, Ward Number 3 that required relocation of families to safer locations within Ribhan. This experience has helped get a real case understanding of the flood risk location within the municipality. Other small scale qualitative assessments included identification of areas with high degree of slope with landslide possibilities. However, these assessments have not been documented. However, there is no flood risk assessment undertaken that the municipality is aware of. Neither are vulnerability and capacity assessment done in the municipality. Risk Sensitive Land Use Plan (RSLUP) is a ‘distant dream’. The interview with technical staff <sup>28</sup> helped understand the municipal team on the use of RSLUP. They discussed and realized that such a tool is of high importance for Machhapuchhre Municipality. Obviously, there is no established process to screen or undertake sectoral risk assessment for development investments.

The municipality has an ongoing program on building code implementation. All new building structures are provided permits according to the building code and monitored. Staff from ward offices monitor the construction of new buildings in their respective wards and inform municipal engineer if they do not meet the building code standards. Visits to each building is done four times. If the building is found not to meet the code, the municipality does not permit connections to utilities such as electricity, water supply. However, there has not been such cases till date.

Machhapuchhre Municipality is in the process of establishing standards and procedures for local development and planning. Take for example, for road construction, the municipality has set certain standards like, 1.5 m for residential and 2 m for commercial buildings, width of the road varies in different wards which is in line with National building Code. The municipality has plans for implementation of national building code and is in the process of training masons. Among all kep development sectors, the Municipality’s priority is on drainage construction and upgrading of roads.

### **3.8.4 Preparedness for Emergency Response**

The municipality coordinates with the District Administration Office (DAO) and the Nepal Red Cross Society in case of major emergencies. During past events, it is through the NRCS and DAO, the affected families have

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<sup>28</sup> The municipal technical staff interviewed included Mr. Dipendra Ranabhat, Sub-engineer and Mr. Rajendra Gautam, Sub-engineer.

been compensated and were provided with relief materials and equipment. Kaski District has prepared Disaster Preparedness and Response Plan. The municipality does not have a copy of the plan.

There are no evacuation centres in the municipality. However, the municipality realizes it is a priority. There are no open spaces identified and designated for disaster purposes – the municipality does not think it is a priority as there are plenty of open spaces available.

Further, the municipality's plan states that, 'a disaster management fund <sup>29</sup> has been established in order to effectively manage the hazards. During construction of infrastructures, provisions will be made to check environmental issues like land erosion and forest degradation so that the natural ecosystem in the area is not disturbed.' Based on this plan, the municipality has set up a disaster management fund with NPR 1 million allocated from the municipal budget. It is intended to be used during times of disaster. If the fund is not spent within the fiscal year, it will be transferred for a subsequent year. There is an understanding that this fund will not be used for any other sector. The amount is not allocated for separate wards. Though the preparation of guidelines the operationalization of DM fund is in the final stages, the municipality feels that the use of funds has to be decided on the basis of needs for each future disaster events. DRRM committee needs to meet before any allocation is made. There is no stockpiling of emergency relief and response materials in the municipality except for a few first aid box and stretchers in one of the ward (Lahachowk, Ward no. - 4).

As per the Chairperson for Machhapuchhre Rural Municipality said, "The private sector is not much active in the municipality. However, during 2017 flood when 14-15 houses in ward number 5, a few private sectors – both from within and outside the municipality – came forward to financially support rescue and response management." The Chief Administration Officer, Mr. Acharya adds, "Private sector can help us in awareness raising, emergency storage, response, manpower etc at the time of disaster." Organizations that are active in the municipality are Sunaulo Ghumti and Community Support Group.

The municipality does not have a municipal emergency operations centre.

### **3.8.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

The survey with the engineers and DRRM focal person of the municipality mentions that there is no early warning system.<sup>30</sup> There is no practice of risk transfer except for the compensation and social security handouts by the municipality.

The recovery and reconstruction for May 2012 flood disaster has been completed. There is no data available on the total cost of the reconstruction as it was managed by the central government. The municipality supported the reconstruction of 13 households out of 25 households damaged by the 2017 monsoon landslide. There are no other recovery and reconstruction works ongoing. The municipality intends to plan and formulate policies for recovery and reconstruction.

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<sup>29</sup> The municipal annual program and budget calls it a '*prakop byabastapan kosh*' – translated as 'hazard management fund'.

<sup>30</sup> A flood early warning system had been set up by Practical Action in the Seti Gandaki river. It needs to be validated if the same flood early warning system serves Machhapuchhre Rural Municipality.

### **3.8.6 Training and Capacity Building Needs**

Since the local level election, there has been only 'one or two basic orientation trainings on DRRM, mainly focussed on emergency response. The municipality notes the followings regarding training and human resource capacity building:

- (i) The municipality's elected representatives and staff are unaware of the key legislative changes on DRRM. The Chairperson of Machhapuchre Rural Municipality Mr. Karna Bahadur Gurung and the Chief Administration Officer Mr. Lekhnath Acharya have expressed the need to undertake a comprehensive orientation on DRRM including training on the key legislative changes.
- (ii) There is no practice to record disaster related data. The municipality intends to develop capacity to record such data through proper technical trainings to the municipal staff including staff serving the ward offices.
- (iii) There is no provision of fire service. A comprehensive fire risk reduction and fighting training needs to be organised.
- (iv) Personnel trained on first aid and other life saving skills have migrated or left the community. Such a trend makes it a continuous challenge to build capacity and train new youths on DRRM.
- (v) There are no trained task forces within the municipality to undertake emergency response. And there are no human resources trained on camp coordination and camp management.
- (vi) Training on post disaster needs assessment and the preparation of disaster recovery plans.

## PROVINCE 5

Province 5 has four sub metropolitan cities, thirty-two urban municipalities and seventy-three rural municipalities. Tulsipur Sub Metropolitan City and Gulariya Urban Municipality have been selected to represent needs and capacity assessment in Province 5. The province comprises of tarai, hills, valleys and mountains. The select two municipalities represents urban settings in the tarai (flood plains) and inner dun valley. The following section describes the findings from Tulsipur Urban Municipality and Gulariya Urban Municipality.

### 3.9 Province 5: Tulsipur Sub Metropolitan City<sup>31</sup>

#### 3.9.1 Introduction to Tulsipur Sub Metropolitan City

Tulsipur is a sub metropolitan city in Dang District of Province Number 5 of Nepal. It was established in 1992 by merging the former Tulsipur and Amritpur Village development committees. Later in 2014, it was expanded and the Village development committees of Urahari, Tarigaun and Halwar were added. Later in 2014, it was expanded by adding Urahari, Tarigaun and Halwar VDCs. At present, it has been restructured by merging Fulwari, Duruwa, Manpur, Bijauri and Pawannagar VDCs and occupies an area of 384.63 square kilometres and has 19 wards. Its total population is 141528 and has a population density of 368 per square kilometre.<sup>32</sup>

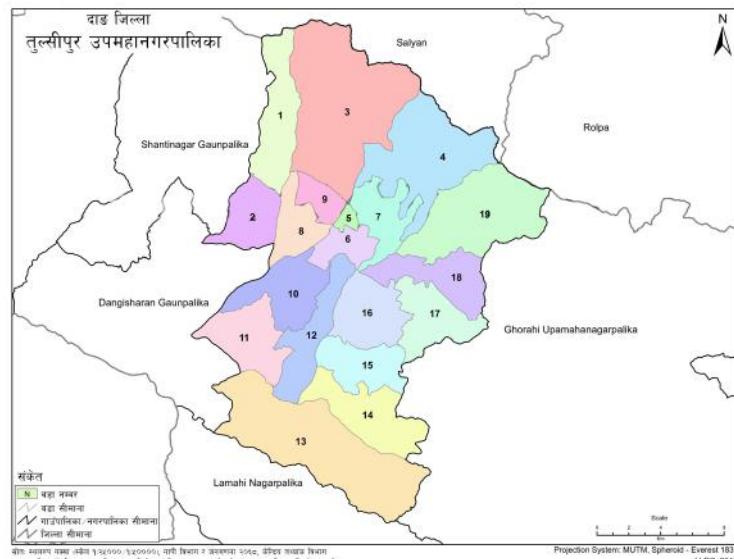


Figure 12: Map of Tulsipur Sub Metropolitan City (Source: MoFAGA)

Tulsipur Sub metropolitan City has prepared a detailed account of information and data recently as '*Tulsipur Nagarpalika ko Bastugat Bibaran*' based on a detailed survey undertaken in 2018. It provides disaggregated information for key development indicators including status on economy, remittance, migration and other questions such as water, sanitation, education, health, disability, and other information on infrastructure. Tulsipur's major disaster risk are floods, landslides, earthquake, lightening (thunderbolt), fire and occasional disease breakouts. Tulsipur experiences occasional droughts. During the 2018 monsoon season, not more than 40% of the area were able to undertake paddy plantation due to lack of adequate rainfall and water. Numerous spring sources are observed to yield decreasing amount of water and depth of water table in open dug well are found to be lowering at a fast pace.

Joint Secretary and Chief District Administration Officer said "*Tulsipur experiences floods and landslides as major disaster risks. We are limited by financial and technical capacity in terms of managing and reducing disaster risks. We welcome you all and need your support and advice. Tulsipur is a rapidly urbanizing municipality. We need to understand where high areas of risk are and if communities currently residing in those high-risk areas need to be relocated to safer places. Such initiatives of resettlement have to be integrated with its urban development plan.*"

<sup>31</sup> This section is written based on the survey findings of Tulsipur Municipality and review of program documents available in the municipality's web-site <http://www.tulsipurmun.gov.np/ne>. The survey was undertaken by a team of three people comprising of Mr. Indra Tamata, Mr. Binod Khatry, and Mr. Sudip Ghimire during 27-28 September. Anil Pokhrel, Sr. Risk and Adaptation Specialist undertook a validation visit during November 2018.

<sup>32</sup> As per census 2011 figures.

The northern areas of the municipality has a sloping hilly terrain. Landslides are key risks in those hilly areas. Particularly schools and public buildings such as health posts are at risk from earthquake and landslide. Some of these areas were part of the adjoining rural municipality which has now been restructured to be part of Tulsipur Municipality. The buildings are not up to the standard. They do not meet the building code requirement and are not safe from earthquake and landslides. Particularly the public buildings need to be strengthened or rebuilt.

Flooding is the highest risk in the municipality as it is situated on the flood plains of Babai River. Further, many small rivers and streams cause widespread damages to the infrastructure and cultivated lands during monsoon season. There is ongoing work on constructing embankments to protect the communities. The design and construction of these embankments are based on limited availability of funds and might not meet the design standards or safe practices. Such design needs to be reviewed and corrected. It requires both financial and technical support.

Tulsipur Sub Metropolitan city falls within the list of 12 smart cities proposed by the federal government. The Sub Metropolitan City organised an economic development summit in December 2018 to discuss and plan economic development of the municipality.<sup>33</sup> Four working papers were presented during the summit. They were focussed on the role of private sector and economic development issues. The summit also discussed disaster management issues and needs. Major investments on infrastructure are in the pipeline. One such investment is the four-laned road connecting Tulsipur and Ghorahi with a green belt.

### **3.9.2 Policy Regime on Disaster Risk Reduction and Management**

Tulsipur Sub Metropolitan City is working on drafting its local DRRM Act and intends to endorse in March 2019. Trainings on DRRM Act 2074, response and DRR assessment have helped the elected leaders and some municipal staff gain some level of awareness on the legislative changes on DRRM. The municipality has prepared a 'guideline for disaster management' and is in the process of endorsement by municipal council. It has recently endorsed 'Safe Shelter Guideline and building code'. Other Marketing Monitoring and Evaluation Guideline, Cooperative guideline, and other acts based on the model acts introduced by Federal Government have also been endorsed.

A DRRM Committee at the Sub Metropolitan level has been formed based under guidance of Disaster Management Guideline and Chairmanship of Mayor. Ward level Disaster and Climate Change Committees too have been formed but are yet to start action.

### **3.9.3 Resilient Local Development Planning and Risk Reduction**

Despite being generally aware on the legislative aspects of DRRM, there are no specific plans for resilient local development planning and risk reduction in the municipality. The municipality has no risk sensitive land use plan prepared. There are no mechanisms to screen risk or to undertake assessment for high risk investments or to make additional budgetary allocation for risk reduction in high risk projects.

More than 50 percent of the houses are '*kachhi homes*' – i.e. made out of mud mortar, tiles or CGI sheet roofing. 818 households are made of thatch. Only one third of the houses (3398) are *pakki* – or made with cement concrete. The *kachhi* homes are generally at risk from earthquakes and more importantly the thatched houses are at high risk of fire.

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<sup>33</sup> See <https://www.onlinekhabar.com/2018/12/730596> for a detailed news on Tulsipur Municipality's effort for economic summit. Also <http://www.tulsipurmun.gov.np/ne/content/तुलसीपुरले-आर्थिक-विकासमेलन-गर्ने>

Implementation of building code has begun in the municipality. The Municipality has been raising awareness among the people and in easing the process of building permits – mainly by describing the process for registration and permits. According to the technical persons interviewed, people have a tendency to build first and later come for ‘permits’ for their constructed houses to be enlisted and registered in the municipal record. The Municipality has a system of fine for people who intend to register their building after it has been constructed. The engineers and technical staff monitor the construction of buildings by making three visits in three different phases of construction.

### **3.9.4 Preparedness for Emergency Response**

The municipality has set up disaster management fund at the municipal level and at the ward levels. It has allocated NPR five million in its disaster management fund. However, there are no operational guidelines prepared for the use of such funds.

An older version of the Disaster preparedness and response plan exists. This is for the entire district. The municipality has felt the need to prepare a new DPRP. There has been a light search and rescue simulation exercise covering for clusters. A district level task force exists that is prepared and willing to support the sub metropolitan city in times of disaster.

Coordination and consultation on DRRM related planning and works among disaster management committees (formed at different local levels), relevant actors, and government bodies including DDMC is almost non-existent.

There is a fire engine and basic equipment for firefighting. However, the municipality does not have sufficient search and rescue equipment such as ropes, safety materials, evacuation centres and safe shelters etc.

As per the discussion with the DRRM focal person of the municipality, there are 46 open spaces and some of them are used by landless people in the district. They are not ‘designated’ as an open space for disaster purpose but are public land. There are no evacuation centres. 16 government schools have been identified as possible evacuation shelters.

Many poor families have their houses and land at disaster prone areas, which at many times local government have considered for their resettlement. But, the problem is intact as landless people and flow of huge number of immigrants from hill and other places is increasing every year.

### **3.9.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

Early warning system have been set up for three major rivers Babai, Ghuar and Patu. As per the interaction with DEOC and NRCS a USAID supported Early Warning System Project in Dang valley was implemented for two years. This project covered Tulsipur area. Practical Action and NRCS are implementing partners for the project. It is currently at an assessment phase. There is no practice of risk transfer except for the compensation and social security handouts by the municipality.

There are no ongoing recovery and reconstruction works in the sub metropolitan city. Resettlement has been a major concern, the DRRM focal person says "we have learnt from the past disasters that vulnerable and affected families should be resettled in safe areas but finding land and managing resettlement is a big challenge. Given the limited resource and capacity we have at the municipal level, we would like to request providing support for helping us identify high risk communities and in planning resettlement."

### 3.9.6 Training and Capacity Building Needs

The Mayor of the Municipality, Mr. Ghanshyam Pandey stresses the need for training to every elected representative including ward representatives. He said “*trainings on disaster management budgeting and expenditure is very essential*”. In addition to the municipal budgets, the wards are proactive to bring investments and programs through joint actions with I/NGOs. As per Mayor Mr. Pandey, logistic support to Sub Metropolitan city is another priority requirement.

Other priority DRRM related training and capacity building needs identified by the municipality are: (i) Disaster management guidelines, policy, law and planning, (ii) Financing for DRRM – including ways to secure funding from federal and provincial Government, (iii) DRR Management Guideline, and (iv) Risk and Hazard assessment.

The meeting with Sub Metropolitan staff highlighted the need for training on the preparation of Municipal DRRM Strategic Action Plan. They have mentioned the need to include both elected representatives and staffs of the Sub Metropolitan City. The meeting participants also informed the need for CBDRM training course to the community to help them understand Municipal Law. Such trainings to community would help undertake effective disaster response and in building ownership for the community level DRRM activities.

## 3.10 Province 5: Gulariya Municipality<sup>34</sup>

### 3.10.1 Introduction to Gulariya Municipality

Gulariya Municipality is noted for its recurrent flooding risk. The 2014 and 2017 monsoon floods has been the most recent large-scale flood disaster event in the municipality. Other disaster risks are droughts, hailstones, fire, wind storm, epidemics, and cold wave.<sup>35</sup> Earthquake also poses key risk mainly to the urban infrastructure and buildings.

Embankment along the Babai River and series of spurs have been constructed to protect the municipality from floods. As the embankment was not continuous, flood water during the 2017 monsoon floods entered from the end of the embankment and inundated most of the municipal area.

Around 14000 families (nearly 70,000 population, with 29399 male and 27833 female) live in 118.21 square kilometre of Gulariya. The LAPA study undertaken in 2017 has identified fourteen percent of the houses as most vulnerable, thirty percent highly vulnerable, another thirty percent moderately vulnerable and twenty six percent low vulnerable from climate change risks.

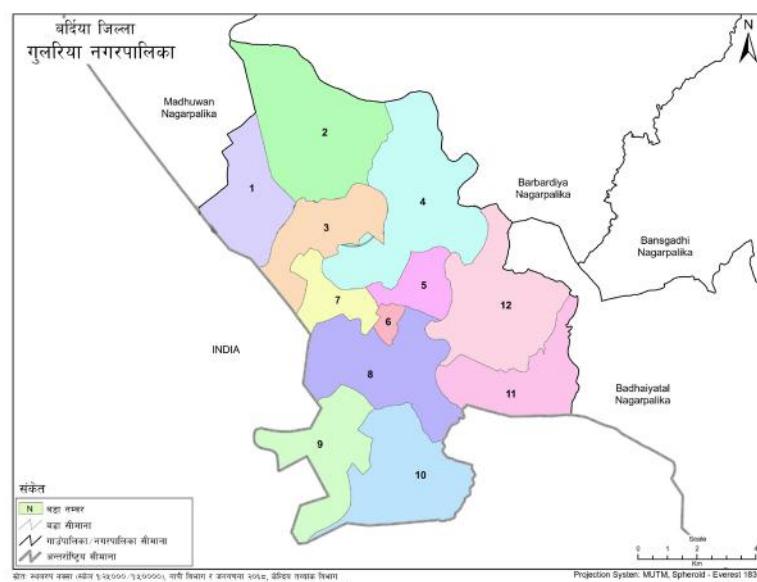


Figure 13: Map of Gulariya Municipality (Source: MoFAGA)

<sup>34</sup> This section is written based on the survey findings of Gulariya Municipality and review of program documents available in the municipality's website <http://gulariyamun.gov.np/en>. The survey was undertaken by a team of three people comprising of Mr. Indra Tamata, Mr. Binod Khatry, and Mr. Sudip Ghimire during 25-26 September. Anil Pokhrel, Sr. Risk and Adaptation Specialist undertook a validation visit during 6 October 2018.

<sup>35</sup> In the order of priority identified by the Local Adaptation Plan of Action (LAPA). The LAPA document also identifies snake bites as one of major risks but its order of priority is after cold wave.

Mathurahdwar VDC, Mohammadpur VDC and Khairapur VDC mere merged in 2015 to declare Gulariya Municipality. The municipality is located in the tarai, borders India in the south and is at a level of 145 meters from the seal level. The municipality lies in the doab between Babai River (east) and Saraju River (west). The land is flat and fertile making it easy for agriculture. Connectivity with the East-West Highway makes it further attractive and the city has been growing at a rapid pace.

During the conflict period, numerous settlers of hill origin had left and are returning back to their original places. There is a significant increase in population in ward numbers 8 and 12. This increasing trend is attributed to urbanization and the availability of facilities. There is also an increased investment to protect the municipality from recurring flood that enables resettling of these families.

### **3.10.2 Policy Regime on Disaster Risk Reduction and Management**

Given the repeated flood and fire impacts in the municipality, the elected representatives are aware on disaster response and relief concepts. The municipality has recently endorsed their 'Local Disaster Management Policy'. Mayor Mr. Yadav, during the interview with the survey team said, "we need equipment, infrastructures, river embankment, resettlement package and logistics supports rather than software packages such as committee formation, and orientation on laws and policies."

Numerous donors have ongoing support on DRRM for the municipality. Donors such as EU's ECHO, Unicef, UNDP, Caritas Nepal, Plan Nepal, Practical Action, Action AID, WFP have been engaging with the municipality and the District Administration Office. The private sector becomes active during times of disaster events, but remains inactive in 'normal times'.

### **3.10.3 Resilient Local Development Planning and Risk Reduction**

Municipality intends to prepare preparedness and resilience building plan. The Mayor is however sceptical whether the municipality will become resilient citing resources gaps. As per Mayor Mr. Yadav, "eighty percent disaster damage can be reduced if Babai River is controlled. It requires large scale investments to construct and complete the embankments. Disasters such as fire, cold wave, are secondary. Support to reduce these secondary risks would also be helpful. But the main problem is managing the flood risks emanating from Babai River."

Most families live in houses constructed using locally available construction materials such as thatched roof, wood, CGI sheets and mud-brick houses. It seems that there is no culture of safety considerations while constructing private houses. The municipality office provides advice for compliance for building construction, it asks for submitting designs, and if it meets the code and by-law requirements are endorsed and permitted to build. The municipality randomly visits few construction sites and suggests compliance, if required.

The sludge treatment plant was flooded during the 2017 monsoon floods. The treatment plant was constructed with the support of financial support of DFID and was managed by Practical Action.

**Need for sectoral flood risk assessment for critical infrastructures:** The experience of the flooded sludge treatment plant shows that procedures for assessing disaster risk for engineering structures has to be introduced – that allows understanding flood (or disaster risk) and designing structures that are resilient to subsequent disasters.

Risk information is not available locally within the municipality. While there is a flood hazard map prepared for the entire district, the municipal engineers interviewed feel the need to undertake a multi-hazard risk assessment to

support decision making on the municipal settlement and in making informed emergency preparedness decision. The municipality is selected within the list of select municipalities requiring to develop an Urban Improvement Development Plan. As per the engineers consulted, this plan will have provisions to undertake mapping including preparing of safe locations for future expansion of the city.

The municipality engages with vulnerable populations by identifying their settlements, their locations and their numbers. The most vulnerable peoples are invited in disaster related consultation meetings when and if such events organized in the district headquarters or at the municipal office. Generally, the municipality's engagement with vulnerable people starts prior to the flood season.

### **3.10.4 Preparedness for Emergency Response**

As per Mayor Mr. Muktinath Yadav, the municipality has a disaster preparedness and response plan. This document serves as the main basis for the preparedness and response activities. It is reviewed each year based on the experiences of response undertaken. The municipality has a DRR fund of around NPR 1.5 million. The resource required for this purpose as allocated by through the municipality's own budget. There are no guidelines prepared for operating the fund as of date.

There is a functional fire engine in the municipality. NRCS, Bardiya chapter has been working jointly with the Bardia District Administration Office in managing the disaster information system and in supporting the DAO for emergency response. NRCS has a trained human resource on camp coordination and camp management.

Through ECHO's support, prepositioning of disaster emergency equipment and materials has been done in a container placed within the DAO premises. It contains various emergency search and rescue equipment such as life safety vests, rubber boats, gloves, crow bars, head lamps, helmets, and sirens is provisioned within the DAO premises. It was also noted that there is a log book to register the flow of goods for emergency services.

One key success story in Bardiya District is the joint work between the District Administration Office (DAO) and the Nepal Red Cross Society. With the support of ECHO's funding (2017-2018) a provision exists to second NRCS staff at the DAO's emergency operations office. Joint team of DAP and NRCS work on assessing flood risks, establishing flood early warning system and for emergency response. The Nepal Red Cross has been recognized as a key partner for a structured disaster emergency response.

**Box 1: Case Study on the Success of Bardiya District for Emergency Preparedness**

### **3.10.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

There is a provision of flood Early Warning System (EWS) serving communities living along Babai River. During times of floods, communities and households are communicated using SMSs, microphone and siren at least six hours in advance. The flood EWS for Karnali River provides information to people in the southern Babai Basin during monsoon season. The municipality jointly with the DEOC and other relevant donors has plans to install flood EWS in another river basins too. During flooding periods, the search and rescue teams are activated. Provisions of relief distribution and safe shelter are also made. The municipality work with existing committees/groups prior, during and after disaster events. There are no risk transfer measures adopted. The municipality intends to promote mandatory insurance for all commercial livestock and agriculture.<sup>36</sup>

<sup>36</sup> This has been reflected in the Gulariya Municipality's annual budget and program. See: page 11, number 24 at [http://www.gulariyamun.gov.np/sites/gulariyamun.gov.np/files/दोसो%20नगरसभा%20निर्णयहरू\\_2.pdf](http://www.gulariyamun.gov.np/sites/gulariyamun.gov.np/files/दोसो%20नगरसभा%20निर्णयहरू_2.pdf).

The municipality had plans to resettle forty-one families affected by the 2017 floods. They intended to purchase private land from a local landowner. The municipality was unable to make payments to the landowner which delayed the resettlement. There were difficult negotiations between the landowner, Municipality and the District Administration Office including Nepal Red Cross which led to the resolution of the land dispute. The Municipality has been successful in resettling all forty-one houses and the initiative has been considered as a big success. If similar situations occur in the future, it will be a huge problem as private land will be excessively expensive, public land is hard to find and even if it is available the host community will not wish to accommodate if it is at a distant location. The issue of land complicates any recovery and resettlement efforts. There are a few families displaced by river bank cutting, the municipality intends to resettle them on unregistered (partil), but does not know how effective it would be.

### **3.10.6 Training and Capacity Building Needs**

The municipality's priority trainings and program are as follows:

- (i) Building code training to the general public,
- (ii) Orientation on DRRM acts, laws and policy,
- (iii) Codes and standards related to DRRM,
- (iv) Recovery and construction related training,
- (v) Training and funding support for the establishment and operationalizing of Local Emergency Operations Centre. As a part of its annual budget and program for 2018-2019 the municipality plans to continue providing trainings to mason on safe construction.

## KARNALI PROVINCE

Karnali Province has twenty-five urban municipalities and fifty-four rural municipalities. Birendranagar Urban Municipality and Kapurkot Rural Municipality have been selected to represent needs and capacity assessment in Karnali Province. The province comprises of hills, valleys and mountains. The select two municipalities represents urban settings in the mountain valley and hills. The following section describes the findings from Birendranagar Urban Municipality and Kapurkot Rural Municipality.

### 3.11 Karnali Province: Birendranagar Municipality<sup>37</sup>

#### 3.11.1 Introduction to Birendranagar Municipality

Birendranagar Municipality is considered to be the third-fastest growing city in Nepal. It is the capital of Karnali Province. The declaration as a provincial capital will induce further rapid population and density growth in the municipality.

Birendranagar faces disaster risk emanating from multiple hazard, almost on an annual basis. Managing flood risk is the biggest challenge. Encroachment of drainage and public land exacerbates flood impacts. The municipality jointly with Oxfam has identified vulnerable households in each ward. The total population of the municipality is 100,458. There are sixteen wards in the municipality. See Table 3 for a disaggregated population data for all the wards in the Municipality. Ward Number 11 and 12 are at highest risk from flooding. Highest population growth is observed in ward number 3.

The 2013 floods have been the most devastating disaster event. A total of six thousand people from 498 households have been severely affected. Their land and houses have been destroyed by the floods and many are still living in tents and temporary shelters in three locations. Apart from the NPR 50,000 financial grant, immediate supply of emergency relief materials and medical support there has been no follow-on support for their long-term recovery.

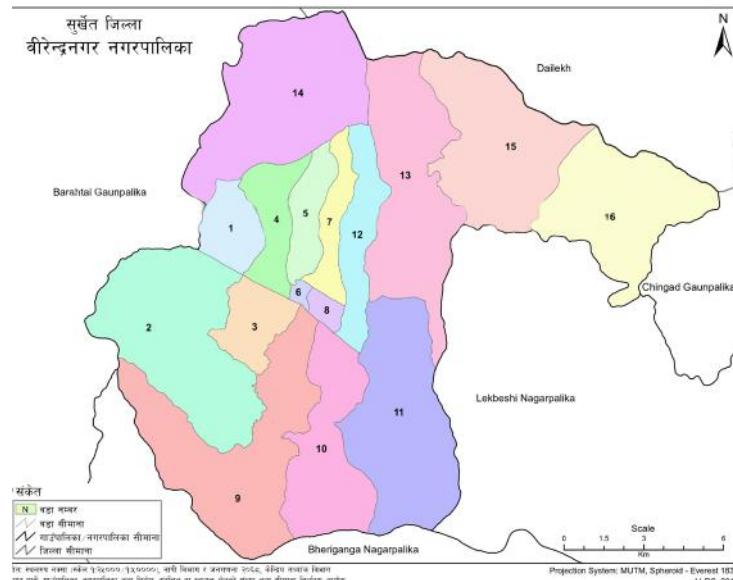


Figure 14: Map of Birendranagar Municipality (Source: MoFAGA)

<sup>37</sup> This section is written based on the survey findings of Birendranagar Municipality and review of program documents available in the municipality's web-site <http://www.birendranagarmun.gov.np/>. The survey was undertaken by a team of three people comprising of Ms. Tripura Oli, Mr. Krishna GC, and Ms. Srijala Adhikary during 24-25 September. Anil Pokhrel, Sr. Risk and Adaptation Specialist undertook a validation visit during December 2018.

**Table 11: Ward Wise Population of Birendranagar Municipality**

Ward No.	Nos. of Households	Total Population	Male Population	Female Population	Total Area [sq.km]	Population Density [person/km <sup>2</sup> ]
1	1519	6,554	3044	3510	6.1	1074.43
2	1843	8,057	3764	4293	29.2	275.92
3	2238	9,204	4570	4634	6.62	1390.33
4	1736	7,421	3613	3808	7.1	1045.21
5	1223	4,992	2368	2624	5.8	860.69
6	1767	7,598	3911	3687	0.6	12663.33
7	1977	6,848	3308	3540	5.2	1316.92
8	1883	6,358	3352	3006	1.4	4541.43
9	1575	7,227	3479	3748	28.82	250.76
10	1998	8,883	4254	4629	17.0	522.53
11	1487	7,085	3446	3639	26.7	265.36
12	1924	8,143	3800	4343	8.82	923.24
13	1107	5,348	2604	2744	25.9	206.49
14	685	3,050	1475	1575	28.96	105.32
15	333	1,679	840	839	24.61	68.22
16	415	2,011	943	1068	22.23	90.46
Total	23,710	100,458	48771	51687	245.06	409.93

### 3.11.2 Policy Regime on Disaster Risk Reduction and Management

Despite the levels of high risk in the municipalities, the level of awareness and knowledge on DRRM among public officials is low. DRRM – mainly within the district officials—is largely limited to response and relief. The coordination of the different district offices and the different sections within the municipality is low, and disaster management guidelines and policies are not being implemented effectively.

The municipality has a Disaster Management Committee headed by the Mayor. There are no DRM policies, legislations or strategic plans that have been prepared or endorsed by the municipality. The municipality is in the process of drafting its Local Disaster and climate Change Plan with support from ‘Urban Disaster Management Project’ funded by Swiss Red Cross and implemented by NRCS and EDS, Local NGO.

### 3.11.3 Resilient Local Development Planning and Risk Reduction

There is a good presence of NGOs/INGOs working in DRM. Currently, a pilot ‘Urban Disaster Risk Management Project’ is being implemented in Birendranagar Municipality which is funded by Swiss Red Cross and implemented by NRCS and a local NGO. The project focuses on delivering a comprehensive DRRM program focussing on 4 core dense wards of the municipality.

The project has built upon the detailed vulnerability and risk assessment for all wards of the municipality carried by Oxfam.

- The Urban DRM project covers all sixteen wards and has specific focus in six most vulnerable and core urban wards. Key project activities in the six core wards include capacity building and awareness raising of Ward Level Disaster Management Committee on DRR, establishment of Task Forces, emergency fund, Early Warning System (EWS) in the nikash area (outlet of Surkhet valley). The project also includes a component on solid waste management. It also has DRM activities in select sixteen schools.
- NRCS has plans to support the preparation of Disaster Preparedness and Response Plan (DPRP) for the municipality that includes identification of evacuation plan, routes and open space mapping.
- NSET-Nepal has ongoing program on training engineers and masons on National Building Code. It works in close coordination with the municipality.

### **3.11.4 Preparedness for Emergency Response**

A Disaster Management fund has been established with an initial seed money of 3 hundred thousand. It has provisions to draw portion of the land property tax. As of date, the DM fund has a total of NPR 1 million. In addition to this, there is another one hundred thousand set aside at each ward level. However, there is no DRRM fund utilization guidelines.

All 16 wards in the municipality have established DM committees and have DM fund created. Each community has on an average NPR one hundred thousand reserved for emergency situation. All wards have purchased some emergency response materials. The Swiss Red Cross has provided support for helping formulate the DM committees. It has also provided initial seed money for DM fund including matching fund for procuring emergency response equipment at the ward levels. The municipality also has plans for constructing a temporary safe shelter house for displaced population in times of disaster events.

The municipality is in the process of preparing a disaster response plan based on the District Administration Office's previous experiences. It jointly works with the District Administration Office, the Police and the Armed Police Force and Nepal Red Cross for disaster preparedness.

The municipality procured its first fire truck after the local level election. Within a time period of 1.5 years, there has been a total of 31 fire incidences.<sup>38</sup> Reaching the farthest community in the municipality requires driving for six hours and thus alternative means of firefighting – such as training local volunteers on the use of local materials, constructing dug out ponds for storing water is required. More number of high-rise buildings are being constructed in Birendranagar. Some of them are of 6 to 8 stories. The available fire engine's nozzle is adequate to reach only up to the second storey, thus making the case of firefighting complex. In past fire incidents, local drinking water tankers supplied water to the fire truck. The municipality is in the process of procuring one additional fire truck.

As Birendranagar Municipality is a planned town, it has significant open spaces, particularly in the central areas. However, there has been widespread encroaching of river and drainage systems by squatter settlers, such as in ward number 5 and 6. These wards have dense settlements and do not have adequate open spaces except for the main roads.

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<sup>38</sup> Based on the interaction carried out by A. Pokhrel with the Municipal Fire Department on 5 Jan 2019.

### 3.11.5 Early Warning System, Risk Transfer, Recovery and Reconstruction

Though there are no structured flood early warning system, the Department of Hydrology and Meteorology is installing a weather radar – first in the country. This radar system is expected to be functional from March 2019. The Municipality is not aware of the benefits of the radar they directly receive but assumes that they will be able to receive better weather forecasts for their region. A decision support system that integrates observations from the radar with hydro-met disaster risk information will be transformational for Birendranagar and the entire Karnali Province.

Though there are not any risk transfer mechanism(s) established – except from the compensation and the social security handouts- highly specialized weather forecast can serve as an excellent building block for designing and implementing a risk insurance scheme in the Birendranagar Municipality area.

Families affected by the 2014 floods have been settled in three ‘camps’ located at Womens’ Training Centre Campus (Mahila Prashikshyan Kendra), Girighat Khola, and near Chhinchu. As a part of the validation exercise, a distant observation of one of the temporary settlements at Women’s Training Centre Campus was done. There were no consultations with people living in tented camps done. Observation was done from a distance for not raising any expectations from the community. The responsibility on recovery has been a central role until recently– through the enactment of the Local Government Opeartion Act, 2017 and the National DRRM Act, 2017. A provincial committee has been set up on August 2018 to address the recovery needs for families impacted by the 2014 floods.



Pic 1 : Nepal's First Doppler Weather Radar, Birendranagar, Surkhet (pic. credit. Mr. Mahendra Bahadur Gurung, Jan 2019 )

### 3.11.6 Training and Capacity Building Needs

As per the Deputy Mayor, protecting communities in high risk locations –mainly along the flood plains– requires either constructing embankments or resettlement. While both options are expensive, resettlements are usually complex. Generally, it costs around eight million rupees to purchase a basic minimum size of housing plot. The land price is around five hundred thousand per meter and it requires 16 to 17 meters of land for constructing a basic house.

Resettlement of households from high risk locations is a complex social issue. It requires major investments as land price in Birendranagar is expensive and there is not enough public land for relocation.

Representatives and staff have not received any training on the legislation of DRRM. The municipality's elected representatives and the staff feel it is high time that structured training on risk assessment, developments on the legislation of DRRM, system digitization, need assessment, fire fighter training, support to the preparation of their local legislation and action plan including training on risk financing needs to be carried out as early as possible. Mayor of the municipality suggests combining ‘soft approaches’ with ‘hard approaches’ such as in actual risk reduction activities.

## 3.12 Karnali Province: Kapurkot Rural Municipality<sup>39</sup>

### 3.12.1 Introduction to Kapurkot Municipality

Kapurkot Rural Municipality has been formed by merging four village development committees, viz., Dhanwang, Rim, Sinwang and Garpa. It has a total area of 119.21 square kilometres and is divided into six wards. It has a total population of 18204, with 9486 women and 8718 men. Kapurkot is situated at an elevation of 1500 meters. It serves as a gateway to the Karnali Province and is surrounded with high hills and valleys.

Development indicators of the municipality shows that it falls behind many municipalities. The literacy rate is low (only 10,667 out of 18,204 people can read and write which is 58.59 percent). Only 75.14 percentage of households served with water supply and 98.36% have access to toilets. And, only 23.44 percent of households are served with electricity. Only 0.24 percent have access to telephone, but 57.12 percent have access to mobile phones and 0.27 percent have access to internet.

Kapurkot Rural Municipality is in the process of preparing its Municipal Profile. As an interim measure, the municipality has gathered disaggregated data from the 2011 census for its use in development planning.

A likely major disaster risk for Kapurkot Rural Municipality is a landslide (mass movement) in Kapurkot Bazar. Wide cracks have surfaced along the main highway in the central area of Kapurkot. Every year, groundwater seeps into the cracks that results in the subsidence of the land. The rate of subsidence is growing rapidly. Initially, it was only a few inches every year which now is experienced to be around 1 to 2 feet every year. More than half section of the highway connecting to other districts has subsided and continues to subside every year. The Kapurkot Bazar landslide poses a substantial disaster risk not only for Kapurkot Rural Municipality and Salyan District but for many other districts as the landslide would likely disrupt connectivity to these districts.



Figure 15: Map of Kapurkot Municipality (Source: MoFAGA)



Pic 2: Highway that runs through Kapurkot Municipality has a major creeping landslide. Seen here in a differential settlement along the highway. The cracks along the road are reported to be increasing every year. Pic: Survey Team.

<sup>39</sup> This section is written based on the survey findings of Kapurkot Rural Municipality and review of program documents available in the municipality's web-site <http://www.kapurkotmun.gov.np/>. The survey was undertaken by a team of three people comprising of Ms. Tripura Oli, Mr. Krishna GC, and Ms. Srijala Adhikary during 27-28 September.

### **3.12.2 Policy Regime on Disaster Risk Reduction and Management**

There has not been much awareness on the legislative changes within both the elected leadership and the staff within the municipality. There are other pressing priorities – similar to numerous municipalities in the region, the municipality has not prepared its local DRRM Act and is not in its immediate priority. However, it has prepared an ‘emergency fund’ utilization procedure based on the guideline prepared by MoFAGA.

### **3.12.3 Resilient Local Development Planning and Risk Reduction**

There have been no hazard assessment or risk assessment done for the municipality. Despite being on a high-risk setting, there is no risk sensitive land use plan prepared. The engineers and the DRRM focal person interviewed expressed that it would be a good planning tool to have it for the municipality, there are no immediate plans to prepare a RSLUP and that in future the municipality might plan one. There has not been a vulnerability and capacity assessment done for the municipality.

The landslide in Kapurkot Bazar poses a major disaster risk. Managing this extent of risk is beyond the technical and financial capacity of Kapurkot Rural Municipality. Till date, it has been assessed and to some extent managed by the Department of Water Induced Disaster Management and through some provincial support. Secondly, more than 80 percent of the houses have thatched roof, and thus have a high fire risk.

The municipality has no system and procedure to screen risk for development projects. There is no building code implementation program in the municipality. There are no projects or initiatives on DRRM and Climate Change Adaptation in the municipality.

Except for the Nepal Red Cross Society, there are no I/NGOs operational in Kapurkot Rural Municipality. Even NRCS District Sub branch committee, Kapurkot is not active. It does not have an office set up either. As per the Key Informant Interview (KII) undertaken by the surveyors, there is no active involvement of the ‘private sector’ for DRRM in Kapurkot Municipality.



Pic 3: Houses at risk from the Kapurkot Landslide  
Pic: Survey Team

### **3.12.4 Preparedness for Emergency Response**

An emergency fund has been created by the Municipality. NPR 1 million has been allocated from the municipal budget. No separate allocation has been made for wards. As per the Chief Administration Officer, a guideline has been developed for utilization of emergency fund in Kapurkot Rural Municipality. But he feels that the guideline needs further improvements to make it ‘a concrete operational guideline on fund management for emergencies including effective and timely response’.

### **3.12.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

There are no early warning system serving Kapurkot Rural Municipality. There are no mechanisms of risk transfer except for the compensation distributed to the households in times of disaster events and the social security funds received.

There are no ongoing recovery and reconstruction works in the municipality. There is no practice of risk transfer except for the compensation and social security handouts by the municipality.

### **3.12.6 Training and Capacity Building Needs**

Elected representatives and municipal staff have not received any training on DRM.

Chairperson of the municipality, Mr. Bhim Bahadur Sen stresses the need for training to every elected representative including the ward representatives. He has said "*trainings on disaster management budgeting and expenditure is very essential.*" He further said, "Kapurkot municipality does not have adequate resources needed to implement DRRM Act, thus, capacity training alone will not help, we will also need equipment and resources to implement the acquired knowledge." He further said, "trainings should also be undertaken for youths and community groups." The Chairperson also said that "*there is a need of training for youths and community people not only for the Municipal staffs and representative including for rapid response and post disaster response activities*".

Other priority DRRM related training and capacity building needs identified by the municipality are:

- (i) Capacity building on DRRM Act and in preparing DRRM guidelines, policy, law and its periodic plans that integrates DRR,
- (ii) How to bring financing for DRRM – including ways to secure funding from federal, provincial government and the private sector,
- (iii) Setting up of the DRM information centre – particularly on helping build knowledge on digitization, and
- (iv) Risk and Hazard assessment.

## SUDUR PASCHIM PROVINCE

Sudur Paschim Province has one sub metropolitan city, thirty-three urban municipalities and fifty-four rural municipalities. Jayaprithvi Urban Municipality and Dhangadhi Sub Metropolitan City have been selected to represent needs and capacity assessment in Sudur Paschim Province. The province comprises of tarai, hills, valleys and mountains. The select two municipalities represents urban settings in the tarai and the midhills. The following section describes the findings from Jayaprithvi Urban Municipality and Dhangadhi Sub Metropolitan City.

### 3.13 Sudur Paschim Province: Jayaprithvi Municipality

#### 3.13.1 Introduction to Jayaprithvi Municipality

Jayaprithvi Municipality is one of two urban municipalities in Bajhang District of Sudur Paschim Province. Chainpur, which is a part of this municipality also serves as district's headquarters. The total population of Jayaprithvi Municipality is 22,191 (10,655 male and 11,536 female) living in 4015 households. Jayaprithvi Municipality's Chainpur is located at an altitude of 915 meters from the sea level.

Seti river surrounds the municipality from three different sides. Major disaster risks in the municipality includes earthquake, floods, landslides and fire. Other disaster risks include occasional snow storm, hailstones, droughts, diarrhoea and other water borne diseases. Landslides lead to frequent road blocks every monsoon season and disconnects the municipality from other parts of the country.

In 1980 a major earthquake of 6.5 Magnitude hit far-western region of Nepal and affected Baitadi, Bajhang and Darchula districts. 125 people died, 248 seriously injured, 13,414 buildings destroyed and heavy loss of livestock were reported.<sup>40</sup>

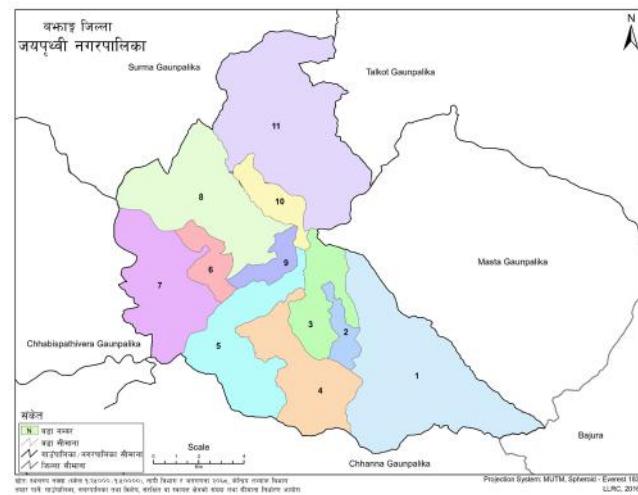


Figure 16: Map of Jayaprithvi Municipality (Source: MoFAGA)



Pic 4: High Risk of landslide at the west side of Chainpur, Jay Prithvi Municipality

#### 3.13.2 Policy Regime on Disaster Risk Reduction and Management

Municipal DRM Act for Jayaprithvi municipality has not been prepared. The municipality has a municipal policy 'Jayaprithvi Municipality Building Code-2072' endorsed on 6 October 2015. It follows the guidelines as provided by building bylaws 2072 entitled '*basti bikash sahari yojana tatha bhawan nirman sambandhi aadharbhut margadarshan*, 2072'. It covers National building code implementation, risk sensitive resource mapping, norms and standards for petrol pump operations, open spaces, environment threshold etc.

<sup>40</sup> See for a detailed account: <http://www.lebret-irfed.org/spip.php?article787>

### **3.13.3 Resilient Local Development Planning and Risk Reduction**

The municipality's annual budget and plan for fiscal year 2018-2019 has allocated NPR 3,530,000 for disaster risk reduction and management in different wards under the budget head of environment and disaster management. The municipality intends to work at ward level for making the local level resilient.

### **3.13.4 Preparedness for Emergency Response**

The Bhajang District Administration Office (DAO) has updated (5th annual edition) its District Disaster Preparedness and Response Plan (DPRP) for the fiscal year 2018-2019 (2075 B.S). Technical support to update the DPRP was provided by PAHAL, a USAID funded program.

The municipality has set aside NPR Five Hundred Fifty Thousand as disaster management fund in the fiscal year 2018-2019. An analysis of municipal budget shows that for fiscal year, ward wise disaster fund of NPR 1 Hundred Thousand has been set aside for ward no 8 alone. In addition, the municipality has set aside NPR 1 Hundred Thousand for the purchase of relief and response materials for disaster risk response in ward number 1 alone. 10 % budget has been allocated from each wards, however the allocated budget is not mobilized properly in preparedness and response. There are no ongoing works on identification, documentation and maintenance of open spaces for emergency use in the municipality.

### **3.13.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

There are six rain gauges installed to monitor rainfall and river flow in the area but a functional flood early warning system does not exist for Jayprithivi Rural Municipality.

Every year large number of livestock and crops are damaged by various weather-related hazards. There are no mechanisms of risk transfer except for the compensation distributed to the households in times of disaster events and the social security funds received. The municipality officials have stressed on the need of agriculture and livestock insurance for farmers to help them absorb disaster shocks.

There are no ongoing recovery and reconstruction works in the municipality. There is no practice of risk transfer except for the compensation and social security handouts by the municipality.

### **3.13.6 Training and Capacity Building Needs**

There have been no trainings conducted for municipal officials and elected representatives to provide orientation on the legislative changes on DRRM, disaster risk reduction, response and preparedness in municipal plan undertaken. However, the municipality realizes that such trainings are required and will be of help to make the municipality resilient. In addition to trainings and knowledge, disaster response requires Personal Protective Equipment (PPE) which is considered beyond the current Municipality budgetary allocation.

Training on building awareness on the key legislative changes for DRRM, risk assessment that includes multi hazards, exposure and vulnerability along with trainings for fire-fighting, and awareness/training session on disaster response are the municipality's interest areas.

As per the municipal officials, coordination among stakeholders on DRRM initiatives is almost non-existent. It affects mainstreaming of DRRM issues in regular development works and further retards the vision on building resilient communities and infrastructure in a high disaster risk municipality.

## 3.14 Sudur Paschim Province: Dhangadhi Sub Metropolitan City

### 3.14.1 Introduction to Dhangadhi Sub Metropolitan City

Dhangadhi is the main gateway to Sudur Paschim Province of Nepal. It serves as a temporary provincial headquarter. The town was established with a motto of 'commercial, industrial, and multi-cultural prosperous city' in 1976. It was declared a sub metropolitan city in 18 September 2015. Dhangadhi borders India along its southern border and is situated at an elevation of 109 meters from the sea level.

The total population of Dhangadhi Sub Metropolitan City is 147741 (73462 male and 74279 female) and covers an area of 261.75 square

kilometres. Its population density is 564 person per square kilometres. Wards 4, 6 and 18 are densely populated. Slums and squatters have settled in Ward Numbers 2, 5, 6, 7, 14 and 18.

Major government investment in Dhangadhi is on expanding and constructing a six-laned road connecting Attaria and Dhangadhi along with drainage improvements. In addition, the Division Office of Department of Urban Development and Building Construction intends to construct and upgrade around 42-km of road in different 19 places of the sub metropolis.<sup>41</sup> Likewise, some 15 big and small roads of the sub metropolis would be constructed and upgraded as part of the five-year Regional Urban Development Project to be implemented with the loan assistance from the Asian Development Bank (ADB).

Recurrent flooding is Dhangadhi Sub Metropolitan City's key disaster risk. Areas within the Sub Metropolitan City have experienced heavy loss of human life and property in the past few years caused by flooding. During the 2017 floods, the entire Sub Metropolitan City was marooned with flood waters. The nature of flooding results in land erosion and over the last decade more than 100 bighas of land has been eroded. The largest loss of life from a disaster has been from epidemics that took post 2017 floods. Fire, windstorm, drought, cold wave, and earthquake were the classified as second order risks.

### 3.14.2 Policy Regime on Disaster Risk Reduction and Management

Dhangadhi Sub Metropolitan City has prepared its local DRRM Act and it has been endorsed following close consultations with relevant stakeholders including the private sector in late 2018. Based on the act, Disaster Management Committees (DMC) at municipal and ward levels have been established and are functional.

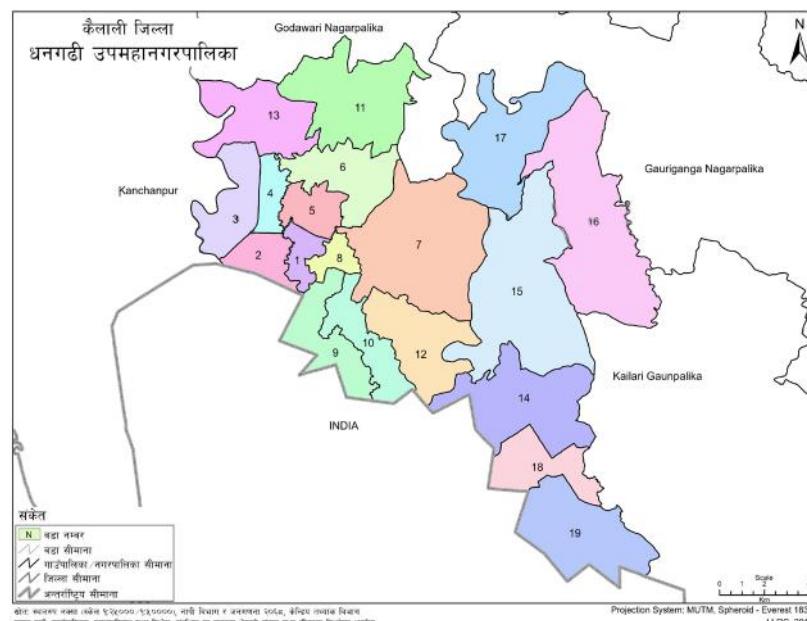


Figure 17: Map of Dhangadhi Municipality (Source: MoFAGA)

<sup>41</sup> It is part of a two-year Urban Development Project.

Similarly, a Disaster Management (DM) Fund has been established. The Sub Metropolitan City has prepared an Operational Guideline for managing the DM fund and to channelize resources during and after disaster events. This operational guideline has been prepared based on the model guideline prepared and shared by MoFAGA.

In 2018, numerous DRRM related programs, conference and workshops have taken place in Dhangadhi. One of such programs has been on orienting the new legislative changes on DRRM, targeting participants from majority of municipalities in the province. Albeit, the program was not targeted specifically for Dhangadhi, participants from the Dhangadhi Sub Metropolitan City such as the Mayor and some key staff have benefitted from the trainings and workshops.

In addition, there is a major urban DRR program 'Strengthening Urban Resilience and Engagement Program' (SURE) currently being implemented by NRCS in partnership with the British Red Cross Society with the funding support from DIFID.<sup>42</sup> This program is based on participatory-led approaches to engage urban populations. The program uses citizen voices of the target vulnerable group 'champions' to create bottom-up demand to local governments for improved disaster resilience. The program has helped in raising awareness on DRRM and has also helped to orient the key changes in the DRRM legislations at the local level.

Further, Forum for Awareness and Youth Activity (FAYA) Nepal is one of the leading local CBO working in this region. In the past, FAYA has implemented programs like, right based disaster risk management project in partnership with DANIDA/DCA (2008-2014), flood disaster response programs during the floods of 2007 and 2008 with different development partners like CARE Nepal, Action Aid, Caritas Nepal. It has also worked for post disaster support program in 2007 in support with CARE Nepal and Action Aid.

### **3.14.3 Resilient Local Development Planning and Risk Reduction**

There are no hazard maps or risk assessment undertaken for Dhangadhi Sub Metropolitan City.<sup>43</sup> The municipality has expressed strong intent to establish risk assessment system including processes for risk sensitive development growth.

Dhangadhi Sub Metropolitan City has initiated increasing investments in physical developments that contribute to reduce and manage disaster risk. These are initiatives such as construction of embankment and drainage systems.

The National Society for Earthquake Technologies-Nepal (NSET-Nepal) has been working jointly with the then Dhangadhi Municipality on Building Code Implementation since 2012. Between 2012 and 2015 there has been numerous trainings conducted by NSET related to the building code implementation including mason training, training to municipal engineers and orientation workshop on preparing the then Municipality's master plan on DRRM.

One of key success has been in the formulation Standards for Building Construction and Planning (*Bhawan nirman tatha yojana mapdanda, 2074*).<sup>44</sup> The law focuses on the implementation of National Building Code, standards to be maintained for operation of petrol pumps, risk sensitive land use planning. Following the 2015 Gorkha earthquakes the Sub Metropolitan City has further developed mechanisms and legislations to strengthen the National Building

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<sup>42</sup> The SURE programme currently is working in seven municipalities over a 5 years period (2016-2021). The programme is designed to improve the urban disaster resilience of municipal governments, the Nepal Red Cross Society (NRCS) and citizens, including specific vulnerable groups, across the seven targeted municipalities.

<sup>43</sup> The SURE program has supported the municipality in undertaking a Vulnerability and Capacity Assessment using an Urban Assessment (VCA) Guideline.

<sup>44</sup> These standards have been endorsed by the municipal parliament and is published as a local law in the municipal gazette (rajpatra).

Code. More importantly, it has shifted its focus from being relief centric to risk reduction. However, the Sub Metropolitan City still feels that the monitoring and compliance is still weak and needs improvement.

Other organizations with DRM programs in Dhangadhi are Lutheran World Federation (LWF), and World Vision International (WVI). Dhangadhi Sub Metropolitan City's annual plan and budget for fiscal year 2018-2019 has identified the followings:

- Disaster risk reduction and management in its budget and programs as a priority. Program wise, it has identified needs and provision of embankment with ecological protection measures in different wards to avoid riverbank cutting.
- Clearing human encroachments (huts, temporary shelters, and shops) built along the riverbanks and develop bicycle tracks and greenery along these river banks.
- Within the sub metropolitan territory, in order to manage disasters as well as for all other disaster management, Disaster Management Master Plan 2070 will be followed.

Dhangadhi Sub Metropolitan city is in the process of preparing its five-year Integrated Urban Development Plan. This is funded by the Department of Urban Development and Building Construction. The work on preparing the plan started in 2017 and is in its final stages.<sup>45</sup>

As per the Deputy Mayor, protecting communities in high risk locations –mainly along the flood plains– requires either constructing embankments or resettlement. While both options are expensive, resettlements are usually complex. Resettlement of households from high risk locations is a complex social issue. It requires major investments as land price in Dhangadhi is expensive and there is not enough public land for relocation.

### **3.14.4 Preparedness for Emergency Response**

A basic Disaster Management Information System (DMIS) exists at the CCI office. It also includes some information on DRRM and the system is linked with the District Emergency Operations Centre (DEOC). A committee is currently working on improving the DMIS and has plans to soon complete.

Dhangadhi Sub Metropolitan City is closely linked with Kailali DEOC and has access to DHM's flood forecast. However, the DECO's communication with the Metropolitan City is not effective in the absence of Municipal EOCs in Dhangadhi or other at-risk municipalities in the district.

Fire risk in the Sub Metropolitan City is much higher than its existing firefighting capacity and available resources. Firefighting system is basic with two fire engines, two drivers and seven fire man, working twenty-four seven. The firefighting team works in two shifts. Lack of sufficient personal protection equipment, trainings and absence of proper incentives are key challenges.

The Sub Metropolitan City has allocated 2 Million in the Disaster Management Fund for the Fiscal Year 2018-2019. Protecting open spaces and finding new open spaces in each ward is one of Dhangadhi Sub Metropolitan City's priority initiative for preparedness.

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<sup>45</sup> GEOC Consult jointly with GIDA private limited and Next Consult are service providers. Copy of the plan was not available to the survey team.

The British Red Cross and the Nepal Red Cross jointly have supported the municipality in preparing a mobility map of the municipality. This map helps understand how people move in the urban context and to inform SURE's urban engagement and accountability strategy; the study undertook mobility mapping. The mobility mapping recorded locations of individuals throughout an average 24-hour time period, including the travel time and modes of transportation used.

The response to the 2017 floods has been considered successful by both the political leaders and municipal staff. The approach of 'one window' system for distributing response aid has helped avoid duplication and to reach the unserved areas.

### **3.14.5 Early Warning System, Risk Transfer, Recovery and Reconstruction**

The first early warning system serving Dhangadhi Sub Metropolitan City was installed in 2008. There has been further improvements in the flood early warning system over the years. However, there are no mechanisms of risk transfer except for the compensation distributed to the households in times of disaster events and the social security funds received.

There are no ongoing recovery and reconstruction works in the municipality. There is no practice of risk transfer except for the compensation and social security handouts by the municipality.

### **3.14.6 Training and Capacity Building Needs**

Most representatives and staff have not received any training on the legislation of DRRM. Some few political representatives such as Mr. Santosh Mudvari, Ward Chairperson of Dhangadhi Sub Metropolitan City attended a training organised by ADPC in Chitwan.<sup>46</sup> Consultations with NRCS too highlighted the need for orientation on DRRM Act, policies, national strategy and action plan, municipal level emergency response plans and capacity building of sectoral agencies in DRR, including integrating DRRM into sectoral plans and policies.

As the understanding of disaster risk among urban communities is very low, consultations carried out with relevant experts in the Municipality highlighted the need of awareness raising campaigns to disseminate risk information that can help individual homes take action for risk reduction and preparedness for response.

The Municipality's elected representatives and the staff feel it is high time that structured training on risk assessment, developments on the legislation of DRRM, system digitization, need assessment, fire fighter training, support to the preparation of their local legislation and action plan including training on risk financing by carried out as early as possible.

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<sup>46</sup> The Nepal Preparedness Partnership (NPP) was organised in collaboration with MOHA. It included an intensive five-day Training of Trainers (ToT) on Preparedness for Emergency Response from 26–30 March, 2018. See: <https://app.adpc.net/news/preparing-nepal-effective-and-coordinated-emergency-response> for details.

## 4 Conclusion and Recommendations

Reviewing the findings from the assessment of DRRM capacities of all fourteen municipalities across Nepal, in relation to the implementation of DRRM Act, 2017; Local Government Operation Act, 2017 and in line with the provisions of the Constitution of Nepal, the following recommendations have been identified to build capacity of the municipal governments.

### **Priority Area 1: Knowledge on the concepts of DRRM and Disaster Risk Legislations at the Municipal Level**

- 1.1 Which municipalities have received orientation or training on the legislative changes? Where have these orientations taken place? Understanding of which municipalities have passed laws, regulations, guidelines and policies that relate to DRM and how were those developed**

#### **Findings:**

- Orientations on legislative changes have been limited to proposed provincial headquarters such as Biratnagar Metropolitan City, Dhangadhi Sub Metropolitan City and Birendranagar Municipality. Despite these orientations, only 2 municipalities have drafted and endorsed their local DRRM Act.
- The orientation workshops and trainings have been conducted at the 'provincial level' and incorporate wide number of actors in the province. These orientations and workshops are not specific to any municipalities and are either one-day or at most two-day events, not considered adequate for operationalizing it into the municipal context.
- The Act prepared and endorsed by Biratnagar Municipality does not reflect local risks and priorities. Only changes are made in the name of the model local DRRM Act prepared and shared by the MoFAGA. Similarly, only a couple of municipalities have prepared and endorsed their Disaster Management Fund Operational Guideline. A case in point is the Udayapurgadhi Rural Municipality. Similar to the case of preparation of DRRM law of Biratnagar Metropolitan City, there has been only changes to the name of the municipality in the draft 'Disaster Fund Operational Guideline'. The transformation from a relief and response guided legislative framework to that of 'disaster risk reduction and management' is not reflected in the way 'Disaster Fund' are structured at the municipal and ward levels. 'Disaster funds' are only understood to partially meet disaster response and emergency needs.
- Some municipalities with high level of I/NGO presence (such as Gulariya, Neelakantha, and Bhimeshwor) have received orientation and trainings on the legislative changes, but it has not been adequate to result in the actual drafting of the local laws, policies and guidelines

#### **Recommendations**

- Orientation on legislative changes to municipalities requires structuring and targeting to specific municipalities. Include all elected representatives, all municipal sectoral staff, Key I/NGOs working in the municipality, the private sector and the academic institutions.
- Technical Assistance (TA) support to be integrated with orientations on legislation to the municipalities for actual drafting of the municipal act, policy, guideline and strategic action plan.
- Training on integrating the issues of social inclusion, gender, PWD and poverty in the legislations.

**1.2 Extent of planned engagement and coordination with neighbouring municipalities (within the district or province) as well as with the DAO, province and federal level on DRM issues**

**Findings:**

- There is limited evidence on the interactions with the adjoining municipalities and provinces, particularly in areas where there are strong upstream – downstream impacts or disaster scenarios that would have a cascading effect in the neighbouring municipalities
- Few municipalities have strong contestations with the District Administration Offices, leading to non-engagement between the municipal leader and the DAO officials. There are exceptions too. Such as the case of Neelakhantha Municipality, where the District Administration Office (DAO), Dhading is in the process of capacity building and handover of the Disaster Risk Management roles to the local governments. A two-day workshop was organised for the elected mayors, chairpersons and appointed chief administrative officers in the local governments on DRR.

**Recommendations**

- Horizontal engagements are to be guided by an understanding of risk, particularly by the upstream-downstream linkages or through the cascading effect (such as in the case of epidemics, vector borne diseases, flooding etc). This requires orientation on planned engagement and coordination with neighbouring municipalities as well as with the provincial government and federal ministries and departments.
- Vertical engagements require understanding the roles and responsibilities of each of the authority. Example establishing relations how municipal laws and actions contribute to achieving the provincial risk reduction and eventually national targets. Provincial government's role in identification of high risk and moderate risk municipalities, identification of 'low hanging fruits' for achieving the national DRRM targets, providing support to the respective municipalities for their legislations based on their levels of risk.

**Priority Area 2: Understanding of Disaster Risk and Economic and well-being losses**

**2.1 Risk Assessment at the municipal level, preparation of Risk Sensitive Land Use Planning and using risk information for designing 'carrots and sticks'**

**Findings:**

- Non-existent evidence on undertaking risk assessment, or preparing of Risk Sensitive Land Use Plan, and in using risk information for designing 'carrots and sticks'.
- The concept of 'risk assessment' and 'RSLUP' are like déjà vu to all municipalities. Interestingly, risk assessments have not been undertaken even in high earthquake and landslide risk municipalities (such as Bhimeshwor or Gulariya). Hazard assessment for some wards are done (eg. For the case of Neelakantha, but results are not available within the municipality for subsequent update or use for sectoral assessments.

**Recommendations**

- Orientation and training on the concepts and types of risk assessment, RSLUP and how actionable decisions can be made using effective risk assessment approaches for not only for disaster risk reduction and management as a stand-alone sector but is also critical to building resilience of the development sector and of the municipality.
- Orientation on how the National DRRM Strategic Action Plan 2018-2030 envisions risk assessment.

## **2.2 Risk screening of development projects at the municipal level**

### **Findings:**

- Non-existent in all fourteen municipalities. Exceptions include ADB investment projects on roads and drainage (e.g Biratnagar, Dhangadhi).

### **Recommendations:**

- Orientation and training on use of simple tools like risk screening to understand risk and make decisions accordingly.

## **2.3 Risk Assessment for sectoral investments**

### **Findings:**

- Non-existent in all fourteen municipalities.

### **Recommendations:**

- Orientation and training on case examples of using sectoral risk assessment (e.g the use of risk assessment for WASH sector in Panauti).

## **2.4 Investments for risk reduction (e.g building code implementation, retro fitting, fire risk management)**

### **Findings:**

- Majority of municipalities have begun implementation and enforcement of building code programme. Those that have not done till date have realized and are interested to implement and enforce.

### **Recommendations:**

- Orientation and cross-municipal exchanges.

## **2.5 To know if and how the municipalities engage with vulnerable populations in relation to DRRM issues**

### **Findings:**

- Engagement with vulnerable populations takes time and effort. With an exception of Dhangadhi and Gulariya there is limited evidence of municipal engagements with the most at-risk vulnerable populations. There are limited posts within the government system earmarked specifically for DRRM activities (e.g the DRRM focal person). These activities are also overseen by staff members who were reshuffled from other existing posts, a majority of whom have already are overburdened. For instance, most DRRM focal person would also have an additional, near or more than full time TOR.

### **Recommendations:**

- Orienting the municipal leadership and the Chief Administration Officers on the need of a full time DRRM person and assigning the person for the role of engagement with most at risk vulnerable populations, setting up disaster loss and damage data base, etc.
- Train municipal leadership and staff on the use of existing municipal and federal data bases used for social security and municipality profile can be used for vulnerability (e.g elderly, persons with disabilities, children, dalits, single women and dalit, poorest), or squatter settlers and thus understanding disaster risks.

**2.6 To know if and how the municipalities experience disaster related displacements and how municipalities are managing disaster related displacements.**

**Findings:**

- In two municipalities it was observed that families were displaced due to disasters. In the case of landslide and flood related disasters measures were taken to resettle the households within the community. However, in case of drying of water sources, families have tendency to go for seasonal migration or when the situation further degrades families are displaced permanently. It was observed that there are no systems to track seasonal and permanent displacements induced by disasters.

**Recommendations:**

- Orientation on the trend of disaster related displacement and establishing systems to track to understand disaster displacements.

**Priority Area 3: Promotion of Public and Private Investment for Resilient Development**

**Findings:**

- In the absence of risk information and comprehensive understanding of disaster risks budgetary allocation on DRRM has been focused mainly on setting up of Disaster Response funds.
- Though budgetary allocation for fiscal year 2018-2019 shows an increased allocation compared to the fiscal year 2017-2018, budgeting for risk reduction including disaster response is done on an adhoc basis.
- There are no systems to track budgetary allocation for DRRM in sectoral development.
- There have been no scoping of joint DRRM work with the private sector at the municipal levels.

**Recommendations:**

- Scoping examples of local resource generation for risk reduction at municipal levels.
- Sharing of best-case examples of joint actions with private sector for risk reduction and building resilience.
- Orientation on various disaster risk reduction examples along with risk transfer instruments and early warning systems.

**Priority Area 4: Enhancing Disaster Preparedness for Effective Response, Recovery, and Reconstruction using ‘build back better’ techniques.**

**4.1 Budgeting for emergency preparedness, response capacity at the municipal level**

**Findings:**

- Knowledge and capacity is better on relief and rescue operations compared to risk reduction and understanding risk. However, this is mainly limited to emergency personnel (such as staff within NRCS) and the security forces (Armed Police Force, Nepal Army and Nepal Police). These institutions are well-equipped to handle emergencies, based on the country's prior experience with large scale relief operations during the 2015 earthquake and the 2017 floods.
- Emergency response is ad-hoc, budget not guided by level of risk, is flat-for-all-wards .
- Open spaces, camp coordination and camp management, evacuation routes planning and marking are non-existent in all municipalities with an exception of Baglung and Neelakantha municipalities.
- Training and positioning of Light Search and Rescue teams non-existent.

**Recommendations:**

- Training on the formation of volunteer bureau for immediate mobilization for search, rescue and relief operation during disaster,
- Orienting on the need to mobilize local community and volunteers for temporary rehabilitation and construction of learning centre for the citizens of disaster affected areas,
- Training on the classification of open spaces, marking of evacuation routes (safe passage)
- Training on camp coordination and camp management

**4.2 Early warning systems**

**Findings:**

- Non-existent except in Gulariya, Bhimeshwor and Tulsipur. Unaware on Seti Flood EWS (for Machapuchhre)

**Recommendations:**

- Training to relevant authorities, communication campaign, on the four components of EWS
- Training on the use of a multi-hazard early warning system
- Cross municipal visits
- Orientation on global best practice on effective and functional municipal emergency operations centre.

**4.3 Risk transfer**

**Findings:**

- Non-existent in all fourteen municipalities (with an exception of cattle insurance in two municipalities), apart from compensation and social-security pay outs.

**Recommendations:**

- Training on various approaches of risk transfer, including that of using disaster risk insurance.
- Orientation on various insurance products for crop and livestock insurance. (e.g the case of Bhakundebesi Pasu Bima Sahakari)

**4.4 Recovery and Reconstruction**

**Findings:**

- Recovery and reconstruction is an unfinished business (example the case of Birendranagar), partial success (case of Bhimeshwor)
- Need to integrate the issues of gender, single women, elderly, PWDs, dalit and the poorest

**Recommendations:**

- Training on the needs of establishing municipal disaster damage and loss data systems.
- Municipalities have requested the need for organizing simulations for key disaster risks to identify capacities, gaps and needs for hazard specific response.
- Orienting the use of disaster information management systems for disaster response
- Trainings and awareness raising on firefighting, disaster response.
- Orientation on the role of federal, provincial and municipal government on preparedness for response.
- Cross visits among municipalities.
- Training on the need of integrating the issues of gender, single women, elderly, PWDs, dalit and the poorest.

## Annex A

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## Annex B

### Questionnaire 1: Questions for Information Officer and Disaster Risk Reduction and Management Focal Person

#### Questions for Information Officer

##### **Needs and Capacity Assessment of Select Rural and Urban Municipalities in Nepal:**

*Opportunities for Building Capacities of Municipal Governments for Disaster Risk Reduction and Management*

*Introduction: Namastey, I/we am/are ..... From International Organization for Migration- UN Migration Agency. Currently IOM with support from USAID/OFDA is working on all the 7 provinces for building the capacity of security forces on camp coordination and camp management. Likewise, IOM also is working for mapping of open spaces in various municipalities of province 4 to be used in after math of disaster events. Along with this IOM also works to support Government of Nepal (GoN) in providing technical support for implementation of Disaster Risk Reduction and Management Act 2017.*

*Under the above mentioned project on technical support to GON, this particular assessment aim to identify capacity and needs of municipalities (Rural/urban) in relation to Disaster Risk Reduction and Management and will support to further strengthen the capacity of municipal authorities. After the assessment report would be prepared and share with central, provincial and local government. All the information provided during the assessment would be solely used for the purpose of providing overview on the current scenario of DRRM in selected municipalities and will be kept confidential.*

*Note for enumerators: Please hand over the letter from PSC/Ministry after introduction is finished with the municipal authorities.*

#### PART A: QUESTIONS TO BE ANSWERED USING BACKGROUND RESEARCH AND VALIDATED DURING THE MUNICIPLAITY VISIT

Date of Municipal Visit	
Venue of Meeting	
Name of Municipality	
Name of Survey team members	1.      XXXX

**Section 1: BACKGROUND: DEMOGRAPHICS, GEOGRAPHICAL BOUNDARIES (Identify the latest source of information. Mention the information and date when those surveys were carried out. Use secondary information, if available with source/citation. For disaggregated population data, refer to the MoFAGA portal: <http://www.MoFAGA.gov.np>)**

- 1.1 Please specify what were the previous wards/VDCs merged while forming present rural and urban municipality?

S.N	Old VDCs'	Current ward in rural/ urban municipalities

Source:

1.2 Please provide a detail on adjoining rural and urban municipalities?

Directions	Rural/ Urban Municipalities
East	
West	
North	
South	

Source:

1.3 Please provide ward-wise population data in the table below:

Ward #	Male	Female	LGBTIQ (lesbian gay, bisexual, transgender, intersex and questioning)	Number of Households
1				

Source:

1.5 Population growth rate and its trend in rural/urban municipality: (Obtain this information through secondary sources such as CBS 2011 survey. Enumerators to explore during interviews with key informants if there are areas/wards that are having rapid population growth. Please try to find the reasons why there has been a spurt on the growth or sudden explosion)

- XXX
- XXX

1.6 Literacy rate in percentage :.....( source, date)

1.7 Percentage of households served with water supply and sanitation: ..... (source, date)

1.8 Percentage of households served with electricity :.....(source, date)

1.9 Percentage of households served with telecommunication service: ..... (Source, date)

1.10 Percentage of households with access to financial services (bank account, savings and credit etc) :.....  
(Source, date)

1.11 Financial income and expenditure of the municipality in the last 3 years:

Fiscal year	Income Amount/Budget amount	Expenditure Amount
2074-2075		
2073-2074		
2072-2073		

## 2.1 Hazard Information

2.1.1 Has your municipality (including new wards or previous VDCs) prepared hazard maps for flood, fire, earthquake, landslides etc.? If No proceed to section 2.3

- Yes/ No

2.1.2 If yes, please provide the information in the table below with name of the organization that helped prepare it and date of preparation.

Wards	Maps Prepared	Supporting Organization	Date of preparation	Remarks
1				

**2.3 Exposed Assets (exposed assets refers to the environment, physical infrastructures with in our surrounding that are likely to be affected by disasters)**

- a. Number of public Schools:
- b. Number of Private Schools :
- c. Number of Hospitals:

S.N	Name of Hospital	Number of beds	Services available

- d. Number of government health facilities( health posts and Primary Health Care Centre):.....
- e. Number of Ambulances:.....
- f. Number of other Public Buildings excluding government schools and hospital) .....
- g. Number of Birthing Centers:.....

2.3.1 Has your municipality undertaken GIS Mapping with features like roads, household information's? if no then proceed to section 2.4

2.3.2 Is there a geo-referenced disaggregated data on the number of house typologies (kachha, semi pakka, pakka etc)?

Obtain those data sets if available.

Typologies	Number of Houses
RCC building	
Semi Pakka	
Mud wall house	

**2.4 Vulnerability (Obtain secondary data on most vulnerable population that includes the followings):**

2.4.1 Persons with disabilities and their category

Ward no	Type of disability								
	Profound - red card holder (Purna Asakta)		Severe – blue card holder (ati asakta)		Moderate- yellow card holder ( <b>madhyam asakta</b> )		Mild- white card holder (samanya asakta)		
	M	F	M	F	M	F	M	F	
1									
Total									

Source:

## 2.4.2 Children and Elderly population (for each ward, obtain the following information)

Ward no	Age	Female	Male	Orphan Children	Total
1	0-4				
	5-9				
	65-69				
	70+				
2	0-4				
	5-9				
	65-69				
	70+				

## 2.4.3 Single women (\*madhesi or pahadi dalit)

Ward Number	Number of single women (age 50-59)	Number of single women (age >60)

2.4.4 Internally Displaced Persons (IDPs) (*Obtain details of each settlement along with the number of households*)

Name of settlement	Tole, ward number	Number of household	Details on the reason of IDP (e.g families displaced by floods, displacement due to unsuitable land, landslides or after earthquakes)	Male	Female	Remarks( Please mention the tentative idea on cast and ethnicity of the population residing as IDPs

*Mention the challenges in getting these data sets. Particularly identify if they are not recognized in any of the government/municipal records. Any sensitivities that needs to be noted while documenting these households. Also make sure that there are no false expectations that IOM or municipality will provide any subsequent support to these settlements.*

## 2.4.5 Extremely poor and food insecure people from remote areas ( information to be obtained from secondary data) Please mention the number of families with food insecurity using the following criteria.

- Number of families with sufficient food for more than six months but less than 12 months 'Poor':
- Number of families with sufficient food for less than six months of the year from their land, business or occupations 'extremely poor':

## 2.4.6 Social Protection Program details

Ward no	Senior citizen			Single women			Profound disability			Severe disability			Child protection			Dalit		
	F	M	Amount (NRs.)	F	M	Amount (NRs.)	F	M	Amount (NRs.)	F	M	Amount (NRs.)	F	M	Amount (NRs.)	F	M	Amount (NRs.)

*Source: Municipality*

**2.4.7 Squatters and slums: their numbers, name of settlement, size and location**

Name of squatter settlement	Tole, ward number	Number of households	Details on the squatter
			e.g in a government land along the flood plains of xxx river

*Mention the challenges in getting these data sets. Particularly identify if they are not recognized in any of the government/municipal records. Any sensitivities that needs to be noted while documenting these households. Also make sure that there are no false expectations that IOM or municipality will provide any subsequent support to these settlements.*

## **SECTION 2: THE RISK LANDSCAPE: HAZARDS, VULNERABILITY AND EXPOSURE**

### **Information on past disaster (At least for last 30 years, since 1988)**

List out key disaster events that have occurred in the past. Include major casualties, damage and loss

Year	Description of disaster event	Deaths	Damage and loss figures in property and agriculture (or qualitative information, if data not available)

- 2.1.1 Is there any system or means on how historical and current disaster related data is recorded, updated and disseminated at rural/urban municipalities? If No then proceed to 2.1.3.  
- Yes or No
- 2.1.2 If yes, please explain how disaster related data are recorded, managed, updated and dissemination at municipal levels?
- 2.1.3 How do you think that disaster related data can be recorded, managed and updated at municipal level in a better way?

### **5.3 Preparedness for emergency response**

- 5.3.1 Do you have provision of emergency fire services in the municipality? What are they?
- 5.3.2 Do you have open space and evacuation centers identified or established?
- 5.3.3 Are their trained task forces within the municipality to undertake emergency response? Please specify the taskforce present?
- 5.3.4 Are there procedures for evacuation, assigning roles and responsibilities? If No proceed to another section.
- 5.3.5 Do you have stockpiled Light Search and Rescue /First Aid items in your municipality?
- 5.3.6 Do you have trained human resources in Camp coordination and camp Management ?
- 5.3.7 Are there any safe shelter/ evacuation building in your municipality?
- 5.3.8 Is there Established Early Warning System in the Municipality?
- 5.3.9 Has the municipality established a Municipal Emergency Management Centre or in the process of establishing one? If not process....
- 5.3.10 Does your municipality have stockpiling of emergency relief materials? If yes, please mention the ward where they are stock piled?
- 5.3.11 Does it require that all endangered people be evacuated without discrimination? How has it been doing?..
- 5.3.12 Does it require that the rights and dignity of evacuated persons be respected in situations of compulsory evacuation? How has it been doing?

## SECTION 6: MUNICIPAL CAPACITY TO MANAGE DRRM

Questions	Tick Yes	No
6.1 Are there trainings on DRRM for ward DRM committees or community level Conducted?		
6.2 Is there a plan /Strategy 'increasing the DM fund' at the ward level and municipal designed and planned?		
6.3 Is there Local Emergency Operations Centre established ?		
6.4 Among the filled positions, identify if they have taken any previous trainings on DRRM and Climate Change Adaptation		
6.5 Are there staff who have taken trainings on DRRM policy, strategy and act?		
6.6 Are there staff who have taken trainings on Disaster Risk Assessment?		
6.7 Are there staff who have taken trainings on Disaster Risk Reduction?		
6.8 Are there staff who have taken trainings on Post Disaster Needs Assessment?		
6.9 Are there staff who have taken trainings on DRRM policy, strategy and act?		
6.10 Are there staff who have taken trainings on Disaster Risk Assessment?		
6.11 Are there any other relevant trainings on DRR for municipal staffs		
Please specify the trainings:		

Are there procedures in place to take into account legal disputes with regard to land titles and property at the municipal level?

### PART B: DOCUMENTS TO BE SEARCHED AND COLLECTED

*If these documents are not available, identify their preparation status, name and contact of consultants/consulting firm assigned to prepare. Obtain digital copies if hard copies are not available. Request for draft if it can be shared.*

- Municipality profile
- District Profile of the respective district
- Urban Integrated Development Plan (or Smart City Development Plan, if applicable in the case of urban municipality)
- Current fiscal year's budget and annual work plan of the municipality
- LDRMP of the chosen municipality (along with LDRMPs of municipalities or VDCs that were merged)
- Latest District Disaster Preparedness and Response Plan (this can be obtained through District Administration Offices)
- Please acquire policies, by laws or documents prepared by municipalities related to DRRM
- Please obtain the copy of hazard and risks maps if prepared or available
- Obtain copies of sectoral risk assessment if possible.
- If it is an urban municipality, check if it falls within the list of municipalities where Urban Improvement Development Plan is being prepared? Or, if it falls within the 12 'Smart Cities' list?
- Obtain the municipality's organizational structure
- Within the municipal organizational structure identify which are filled positions? Which positions are vacant?

## Annex C

### Questionnaire 2: Questions for Mayor, Deputy Mayor and Chief Administration Officer

#### Questions for mayor, Deputy Mayor and Chief Executive Officer

- 1) Is municipality engaged with vulnerable population in relation to DRM issues? If no please proceed to 2.4.11
- 2) If yes, please explain how the municipalities engage with vulnerable populations in relation to DRM issues.  
Are there any networks that represent the above vulnerable groups?
- 3) Are these networks supported by municipal funds?
- 4) If not what would be the approaches of municipalities for engaging themselves with vulnerable population or groups. Please suggest 3-4 possible approaches of engagement.
- 5) What role(s) can private sector play on DRRM in the municipality? Are there such private sector actors that are active? Name them.
- 6) How is engagement and coordination done with federal ministries including the National Emergency Operations Centre, MoHA, MoFAGA, Ministry of Urban Development, Ministry of Education, Ministry of Health for DRRM?
- 7) How is engagement and coordination done with provincial ministries level including the Provincial Emergency Operations Centre, MoFAGA, Ministry of Infrastructure Development; Ministry of Internal Affairs and Law , Ministry of Education, Ministry of Health and others??
- 8) Have you ever coordinated response with DAO? If yes please explain what was the process? If no then
- 9) Have you ever coordinated with District Coordination Committee from DRRM related works? If yes please explain what was the process?

#### DISASTER RISK REDUCTION AND MANAGEMENT INTERVENTIONS: WHAT IS HAPPENING? WHAT IS MISSING?

##### Policy and strategy of the municipality :

- 1) Identify if the municipalities have passed any laws, regulations, policies that relate to DRM especially after they were elected? If yes, what are the documents? If no then proceed to 5.1.3
- 2) Is the municipal DRM law/ policy well-tailored to your municipality's hazard risk profile and governance capacity?
- 3) Are roles and responsibility for DRM among municipal authorities clearly established in municipal law/ policy?
- 4) Are there any decision or legal guarantees for the provision of shelter in case of displacement due to disasters?
- 5) Are there preparedness arrangements to reduce legal issues with regard to housing, land and property irregularities and disputes?
- 6) How does the municipal authority or law and policy will deal with issues relating to persons who are registered elsewhere (eg. renters)?
- 7) How was/were the above were developed? Example, with technical support from xxx agency (ies), directly by the municipality team following a model or template etc.

- 8) Do gender-specific needs or considerations exist in the municipal DRM law/policy, including gender-sensitive needs assessments, standards for planning and construction of post-disaster accommodation and other arrangements for displaced communities?
- 9) Did your municipality already formed Local Disaster and climate resilient committee at municipal and ward level? If yes, how was it formed? Briefly explain the process.
- 10) Have they set up disaster management funds at the municipal level and at the ward levels? What is the amount? Are there clear guidelines for the use of such funds?
- 11) What is the makeup of the funding sources for DRM at the municipal level? Has the municipality received resources from provincial and federal government,
- 12) Is there a provision for higher amount of resource allocation for high risk wards?
- 13) If it is an urban municipality, check if it falls within the list of municipalities where Urban Improvement Development Plan is being prepared? Or, if it falls within the 12 'Smart Cities' list?
- 14) Is there a Disaster preparedness response plan for the municipality?
- 15) Is training for public officials and relevant professionals promoted for (i) DRR (ii) Response and Preparedness in municipal plan?
- 16) Does the municipality's law/policy provide for trainings, drills and simulations for people likely to be involved in responding to disasters?
- 17) What have we learned from the past DRRM efforts?
- 18) What are priority training and capacity building needs identified by the municipality?
- 19) Identify if the municipality has ongoing or planned programs for building capacity of municipal staff for DRM?

#### **Risk Reduction Strategies**

- 20) How is the municipality implementing and enforcing building code?
- 21) Who and how is this monitored? How frequently are these monitored?
- 22) Who/ how ensure compliance with building codes?
- 23) Are incentives / legal sanctions established, where appropriate, in cases of non-compliance leading to unsafe buildings or developments at municipal level?
- 24) Are there any disaster insurance and/ or risk finance mechanisms available or implemented and how has this been established in municipal level development activities or risk reduction activities?
- 25) What does the municipality intend to do for better preparedness and community resilience for next 4 years?
- 26) What aspects of policy and operational support from provincial, federal and international level can better support the Municipality in DRRM and longer-term development?

## Annex D

### Questionnaire 3: Questions for Nepal Red Cross Society Focal Person, I/NGOs

#### Questions for NRCS focal Person, NGO workers, INGOs

##### 1. Information on past disaster (At least for last 30 years, since 1988)

List out key disaster events that have occurred in the past. Include major casualties, damage and loss

Year	Description of disaster event	Deaths	Damage and loss figures in property and agriculture (or qualitative information, if data not available)

2. Has your municipality (including new wards or previous VDCs) prepared hazard maps for flood, fire, earthquake, landslides etc.? If No proceed to section 4  
 - Yes/ No

3. If yes, please provide the information in the table below with name of the organization that helped prepare it and date of preparation.

Wards	Maps Prepared	Supporting Organization	Date of preparation	Remarks
1				

4. Who are key NGOs currently working on DRRM in the municipality?  
 5. Who are the key INGOs currently working on DRRM in the municipality?  
 6. Who is the DLSA for the district?  
 7. What role(s) can private sector play on DRRM in the municipality? Are there such private sector actors that are active? Name them.

#### Coordination mechanism with government

8. Have you ever coordinated response with DAO? If yes please explain what was the process? If no then  
 9. Have you ever coordinated with District Coordination Committee from DRRM related works? If yes please explain what was the process?  
 10. Please share your good practices of DRR&M  
 11. What were the lesson learnt and major issue and challenge's responding to the DRRM and response?  
 12. What have we learned from the past DRRM efforts ?  
 13. Do you have provision of emergency fire services in the municipality? What are they ?  
 14. Do you have open space and evacuation centers identified or established? How they are protected?  
 15. Are their trained task forces with in the municipality to undertake emergency response? Please specify the taskforce present?  
 16. Do you have stockpiled Light Search and Rescue /First Aid items in your municipality?  
 17. Do you have trained human resources in Camp coordination and camp Management ?  
 18. Are there any safe shelter/ evacuation building in your municipality?  
 19. Is there Established Early Warning System in the Municipality?  
 20. Does your municipality have stockpiling of emergency relief materials? If yes, please mention the ward where they are stock piled?  
 21. Has the municipality established a Municipal Emergency Operation Centre or in the process of establishing one? if not process....

22. Are there procedures for evacuation, assigning roles and responsibilities?
23. Does it require that the rights and dignity of evacuated persons be respected in situations of compulsory evacuation? How has it been doing?

## MUNICIPAL CAPACITY TO MANAGE DRRM

Questions	Tick Yes	No
6.1 Are there trainings on DRRM for ward DRM committees or community level Conducted?		
6.2 Is there a plan /Strategy 'increasing the DM fund' at the ward level and municipal designed and planned?		
6.3 Is there Local Emergency Operations Centre established ?		
6.4 Among the filled positions, identify if they have taken any previous trainings on DRRM and Climate Change Adaptation		
6.5 Are there staff who have taken trainings on DRRM policy, strategy and act?		
6.6 Are there staff who have taken trainings on Disaster Risk Assessment?		
6.7 Are there staff who have taken trainings on Disaster Risk Reduction?		
6.8 Are there staff who have taken trainings on Post Disaster Needs Assessment?		
6.9 Are there staff who have taken trainings on DRRM policy, strategy and act?		
6.10 Are there staff who have taken trainings on Disaster Risk Assessment?		
6.11 Are there any other relevant trainings on DRR for municipal staffs		
Please specify the trainings:		

Are there procedures in place to take into account legal disputes with regard to land titles and property at the municipal level?

## PART B: DOCUMENTS TO BE SEARCHED AND COLLECTED

*If these documents are not available, identify their preparation status, name and contact of consultants/consulting firm assigned to prepare. Obtain digital copies if hard copies are not available. Request for draft if it can be shared.*

- Municipality profile
- District Profile of the respective district
- Urban Integrated Development Plan (or Smart City Development Plan, if applicable in the case of urban municipality)
- Current fiscal year's budget and annual work plan of the municipality
- LDRMP of the chosen municipality (along with LDRMPs of municipalities or VDCs that were merged)
- Latest District Disaster Preparedness and Response Plan (this can be obtained through District Administration Offices)
- Please acquire policies, by laws or documents prepared by municipalities related to DRRM
- Please obtain the copy of hazard and risks maps if prepared or available
- Obtain copies of sectoral risk assessment if possible.
- If it is an urban municipality, check if it falls within the list of municipalities where Urban Improvement Development Plan is being prepared? Or, if it falls within the 12 'Smart Cities' list?
- Obtain the municipality's organizational structure
- Within the municipal organizational structure identify which are filled positions? Which positions are vacant?

## Annex E

### Questionnaire 4: Questions for Engineers or Sectoral Technical Team

#### Questions for Engineers

1. Has your municipality prepared Risk Sensitive Land Use Plan (RSLUP)? If yes, please share the experiences.
2. If No, then what is the plan?
3. Has municipality done the risk assessment done for disaster risk or climate change? Yes or No If yes, when was the last risk assessment done? If no the proceed to section B
4. What is the type (e.g Vulnerability and Capacity Assessment (VCA) or a semi-quantitative or a detailed quantitative)
5. What has been the experience from these assessment(s), mainly focusing on how has it been of help in decision making?
6. How is the risk information shared? Data? Website?
7. Does the municipality have online map for wider public/residents for the municipality to access?
8. Is risk information on open source formats available? Yes or No
9. How is risk information included in development planning, budgetary allocation and construction?

#### Sectoral Risk Assessment

1. Does the municipality have sectoral risk assessment done in the past? E.g risk assessment for drinking water supply sector (or for any system), sanitation, irrigation system, electricity or communication? List out the sectors if they have risk assessments done. Who helped do it? When?

Sector	Risk Assessment	Document published /Draft	Supporting Organization	Date of Assessment

#### Disaster Risk Screening System

2. Is there a risk screening system for development projects (such as water supply, roads, irrigation system, school, health)?
3. Are there any project initiated/ budgeted based on risk for DRR and Climate Change ?If yes, please specify the project interventions:
4. Has your municipality enforced/implemented Building codes and Land Use Plan policy? Has it been monitored?
5. Who and how is this monitored? How frequently are these monitored?
6. Are incentives / legal sanctions established, where appropriate, in cases of non -compliance leading to unsafe buildings or developments at municipal level?

#### Only applicable for Dhading and Dolakha

7. what is the state of reconstruction and recovery of private shelters and other public infrastructures?
8. What percentage of public buildings are accessible by persons with disabilities?
9. Have there been efforts on linking DRR with climate change adaptation, livelihoods in the recovery programs?
10. Are there experiences of undertaking retrofitting of schools or public infrastructures?

11. Are there any disaster risk insurance program being implemented in the municipality?
12. Are there procedures in place to take into account legal disputes with regard to land titles and property at the municipal level?

#### **PART B: DOCUMENTS TO BE SEARCHED AND COLLECTED**

*If these documents are not available, identify their preparation status, name and contact of consultants/consulting firm assigned to prepare. Obtain digital copies if hard copies are not available. Request for draft if it can be shared.*

- Municipality profile
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- If it is an urban municipality, check if it falls within the list of municipalities where Urban Improvement Development Plan is being prepared? Or, if it falls within the 12 'Smart Cities' list?
- Obtain the municipality's organizational structure
- Within the municipal organizational structure identify which are filled positions? Which positions are vacant?

## Annex F

### Two days 'Basic Concept on DRRM' training schedule.

#### Program Agenda For

#### **Enumerators Training for Collection of Baseline Information on Disaster Risk Management and Post Disaster Recovery of Selected Municipalities'**

Date: 6th & 7th of September, 2018

Description	Time	Responsible
<b>Day I – 6th September (Thursday)</b>		
Tea and Registration	8:30 – 9:00	IOM
Introduction and Objective Sharing	9:00 – 9:30	Ruchi, IOM
Brief Introduction to Disaster Risk Reduction and Management & Overview of DRRM in Nepal	9:30 – 10:15	Anil, Plan8
Tea	10:15 – 10:30	Anil, Plan8
Questionnaire Brainstorming/Drafting	10:30 – 11:00	Anil, Plan8
Session 1: Nepal's Federal Structure: Urban and rural municipalities, their demographics, boundaries geography		
Session 2: Municipal Risk Landscape: Hazard, Exposure, Vulnerability and Risk Assessment	11:00 – 12:30	Anil, Plan8
Lunch	12:30 – 13:30	IOM
Airing of Talk of the Town: Interaction with Gulariya Municipality episode	13:30- 14:00	IOM & Anil, Plan8
Session 3: Initial Municipal Political Economy Analysis for DRRM	14:00 – 14:30	Anil, Plan8
Session 4: Key actors and institutions: Government, Non-Government, Development Partners, Private Sector, I/NGOs	14:30 – 15:15	Anil, Plan8
Tea/Coffee Break	15:15 – 15:30	
Session 5: DRRM Interventions - Municipal policy, strategies on DRRM - Risk reduction interventions (including risk financing, insurance, early warning system)	15:30 – 17:00	Anil, Plan8
Wrap up (day 1)		IOM
<b>Day II – 7th September (Friday)</b>		
Tea and Registration	8:30 – 9:00	IOM
Session 5: DRRM Interventions (contd.) - Preparedness for emergency response - Recovery experiences and pending recovery needs	9:00 – 10:00	Anil, Plan8
Session 6: Municipal Capacity to manage DRRM	10:00 – 11:00	
Questionnaire Finalization (Discussion/Group Work)	11:00 – 12:00	Plan8/IOM
Lunch	12:00 – 13:00	
Research, Research methodology and design	13:00 - 14:00	IOM
Tools/Techniques and Communication skills	14:00 – 15:00	IOM
Tea/Coffee break	15:00 – 15:15	IOM
Reflection and Wrap up	15:15 – 17:00	Anil/IOM

## Annex G

### Schedule of the refresher training

#### Program Agenda

#### **Collection of Baseline Information on Disaster Risk Management and Post Disaster Recovery of Selected Municipalities**

#### **Refresher Training for Enumerators**

Date: 23rd September, 2018

Description	Time	Responsible
Tea and Registration	8:30 – 9:00	IOM
Welcome and Objectives Sharing	9:00 – 9:10	Jitendra Bohara/Ruchi Thapa, IOM
Opening Remarks	9:10-9:20	Paul Norton-COM, IOM
Session 1: Redefining the Terminologies	9:20 – 10:15	Anil Pokhrel, Plan8
Tea	10:15 – 10:30	
Session 1: Redefining the Terminologies (Contd..)	10:30 – 11:00	Anil Pokhrel, Plan8
Session 2: Run through the questionnaire	11:00 – 12:30	IOM & Anil Pokhrel, Plan8
Lunch	12:30 – 13:30	IOM
Session 2: Run through the questionnaire	13:30- 14:30	IOM & Anil Pokhrel, Plan8
Session 3: Role Play	14:30 – 15:30	Anil Pokhrel, Plan8
Tea/Coffee Break	15:30 – 15:45	Anil Pokhrel, Plan8
Session 4: Logistics Preparation-Team Plan	15:45-16:45	IOM
Wrap up (day 1)	16:45-17:00	IOM





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