POPULATION MOBILITY AND PUBLIC HEALTH RISK MAPPING

COVID-19 PREPAREDNESS AND RESPONSE PLAN IN NEPAL (2020)

Sudurpashchim Province

Province 1/3

INTRODUCTION

The Coronavirus disease (COVID-19), firstly detected in China in November 2019, has spread throughout the globe to the scale of a pandemic, declared by the World Health Organization (WHO). In Nepal, the first case of COVID-19 was reported in January 2020. As of 4 November 2020, the total number of confirmed cases in Nepal stands at 179,614, and 1,004 deaths.[1] The Government of Nepal (GoN) has taken several steps to control transmission and mitigate the impact of COVID-19 on the society. Among them, the Population Mobility Mapping (PMM), was selected by the Ministry of Health and Population (MoHP) as part of the national COVID-19 Response and Preparedness Plan. The project covers 3 provinces (*Sudurpashchim Province, Lumbini Province,* and *Province 1)* for a total of 9 municipalities (*Dhangadhi, Bheemdatta, Dasharathchanda, Nepalgunj, Krishna-nagar, Siddharthanagar, Biratnagar, Mechinagar,* and *Suryodaya*) and was rolled out together with the implementing partner, the Nepal Red Cross Society (NRCS).

POPULATION MOBILITY MAPPING

The PMM was developed through an adaptation of IOM's Displacement Tracking Matrix (DTM) and has been implemented as the response and preparedness to several outbreaks, such as the Ebola Virus Disease (EVD). The aim of the PMM is to understand the dynamics of human mobility and identify the most vulnerable, priority locations within and outside the border. The findings would enable the Government, communities and various actors to prevent the introduction or to limit the spread of infectious diseases and other public health threats, directly affected by human mobility.

[1] *https://covid19.who.int/?gclid=EAIaIQobChMIpu2y9aym6wIVjx0rCh2zNgN6EAAYASAAEgI1zvD_BwE*

OBJECTIVES

PMM has four main objectives:

1. Identify travellers' profiles and mobility patterns with health related impacts.
2. Identify vulnerable places where travellers or mobile populations gather and interact with each other or with local communities, which are at risk of both contracting and spreading infectious diseases and other health threats.
3. Identify priority sites with limited capacities to prepare and respond to public health emergencies.
4. Identify priority public health actions and resource allocations, in order to develop action plans aimed at strengthening public health emergency preparedness and response capacities.

PRELIMINARY ACTIVITIES

4 Trainings
- IOM Kathmandu
- Sudurpashchim Province
- Lumbini Province
- Province 1

Oriented staff
- 18 IOM staff
- 45 NRCS staff

FIELDWORK

9 weeks:
14/08/2020 - 18/10/2020

9 municipalities:
3 in each province

Population:
over 700,000 (census 2011)

Face-to-face interviews:
over 800 individual interviews and focus group discussions

DISCUSSION OF RESULTS - SUDUPARSHCHIM PROVINCE

PHASE I *(9 days)*

The Population Mobility Mapping Exercises saw the participation of **key informants (KIs)** who are knowledgeable of population mobility, from 5 categories; 1) government representatives, 2) agency (specifically NGOs/ INGOs) representatives, 3) community workers, 4) drivers, and 5) vendors.

15 Focus group discussions (FGDs) | 75 KIs

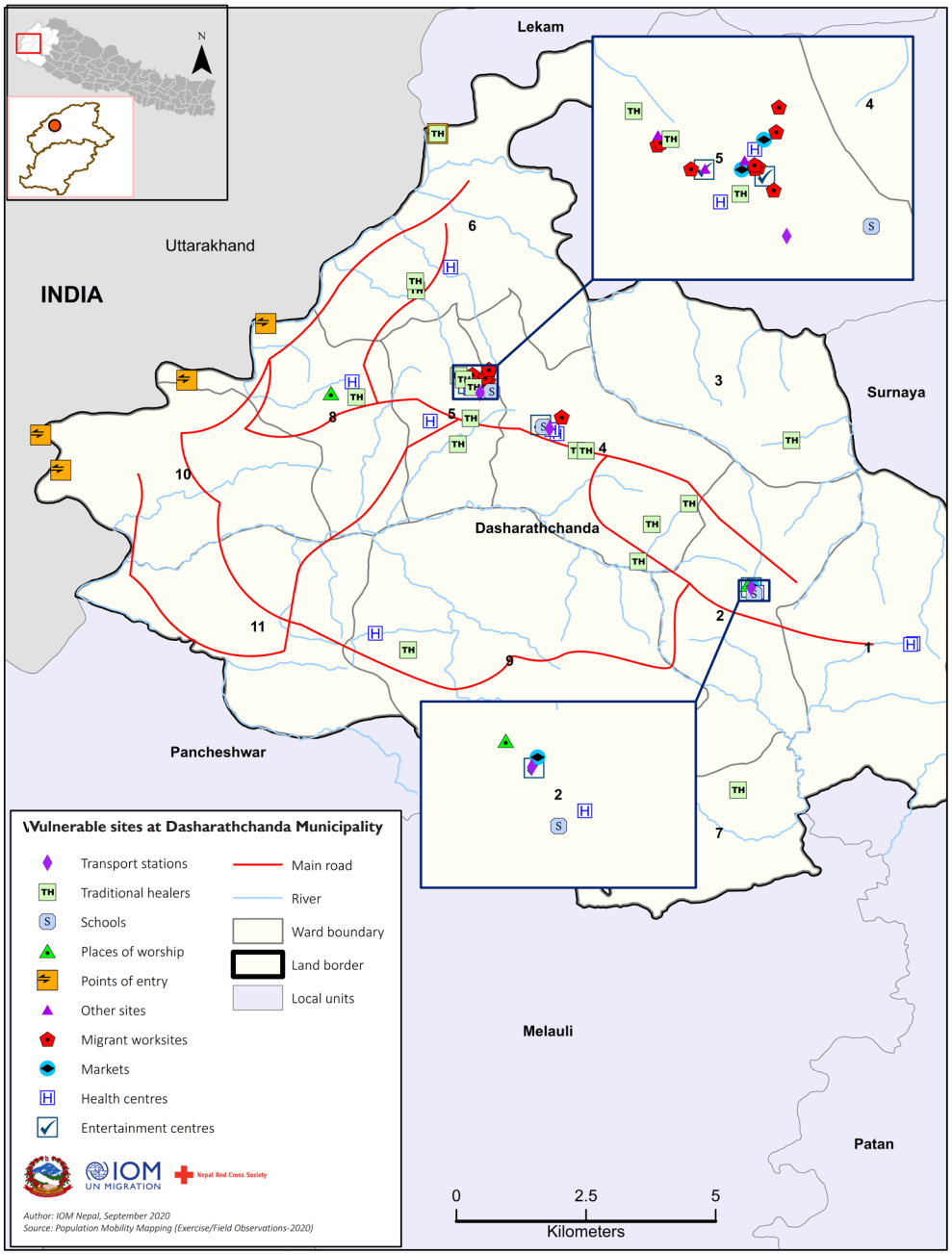
The discussions were facilitated in Nepali, though the information was entered in English. Prior to the start of the FGDs, KIs were informed about IOM's mandate, the scope of the project, and the partnership with GoN and NRCS. All participants were asked to sign a consent form. The information was collected using two main tools – the note taker's guide and a map of the municipality – and was then inserted into the matrix software (Excel) to analyse the priority locations.

PHASE II *(10 days)*

A total of **185 sites** with high population mobility were selected for further assessment involving questionnaires to KIs on site.

- 185 interviews with KIs
- 16 Entertainment centres
- 19 Points of entry (POEs)
- 21 Market centres
- 28 Health centres
- 27 Migrant worksites
- 31 Traditional healers
- 19 Transport stations
- 11 Schools and colleges
- 13 Places of worship

Based on the data gathered with KoBo Collect on population movement and the GPS coordinates of vulnerable sites present in each municipality, several maps were created using GIS software (see example of map on the right).

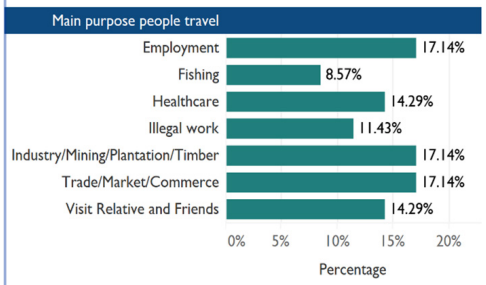


KEY FINDINGS

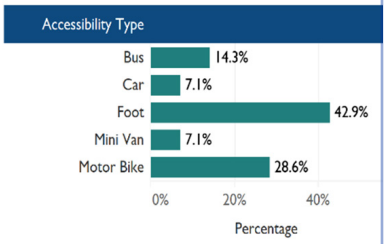
In this section, some key findings are presented according to municipality.

Dhanghadi Sub-Metropolitan City

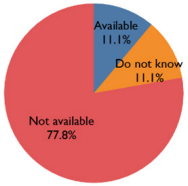
Main purpose people travel across the POEs



Mode of transport to access the POEs

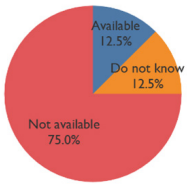


Availability of special equipment to address health issues of PHEIC



Presence of IHR Focal point in corresponding country

Presence of IHR Focal point at POE



Type of practices and the main reason people go to the traditional healer's compound

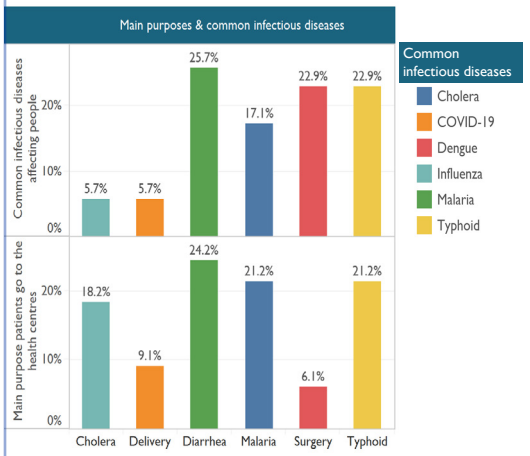
Type of Practices	Name of Diseases	Practices by percentage	Diseases patients seek by percentage
Divination	Fever	36.4%	27.3%
Disease cure	Snake bite	18.2%	9.1%
Protection	Skin diseases	13.6%	13.6%
Mental Cure	Diarrhea	13.6%	22.7%
Love Password (Mohani)	Headache	9.1%	18.2%
Exorcism	Lower abdominal pain	9.1%	9.1%

0% 10% 20% 30% 40% (Practices by percentage)

0% 10% 20% 30% (Diseases patients seek by percentage)

Bheemdatta Municipality

Major reasons people visit the health centres and common infectious diseases



Main purpose visitors coming from India

Main purpose	
Treating patient	53.3%
Visiting patient	33.3%
Visiting a Health Worker	6.7%
Material and Infrastructure maintenance	6.7%

Legend 6.7% 53.3%

Legend 3.70% 29.63%

Method of waste disposal at the health centres

Method of waste disposal	
Waste bins available	29.6%
Burning pit	25.9%
Incinerator	22.2%
Waste bins regularly emptied	18.5%
Placenta pit	3.7%

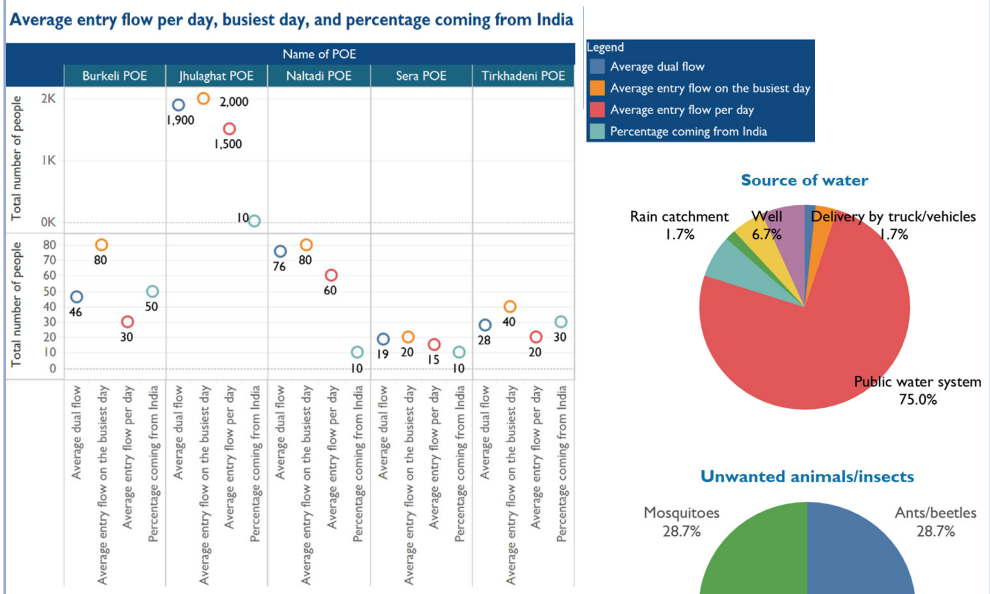
Type of activity and accommodation at the migrant worksite

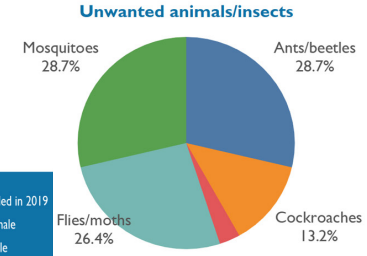
Type of activity	Type of accommodation	Type of activities by percentage	Type of accommodation by percentage
Factory	Tent	45.5%	10.5%
Timber logging	Thatch	18.2%	10.5%
Agriculture	Tapoline	18.2%	10.5%
Mining	Zinc	9.1%	36.8%
Fishing	Concrete	9.1%	31.6%

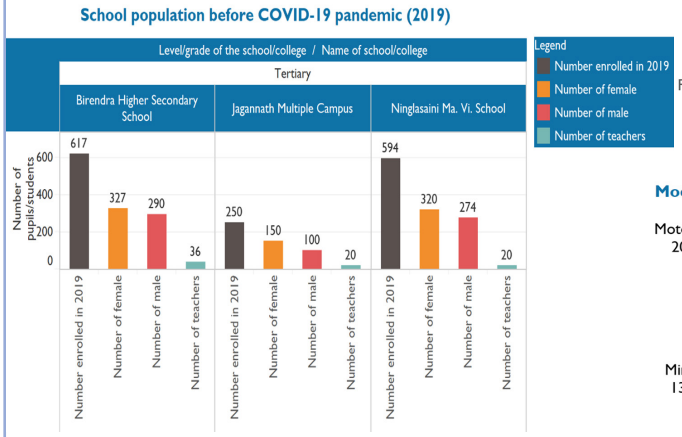
0% 20% 40% (Type of activities by percentage)

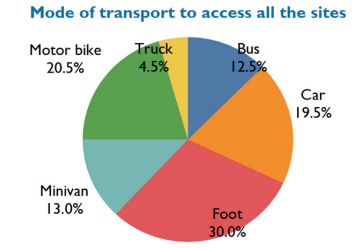
0% 10% 20% 30% 40% (Type of accommodation by percentage)

Dasharathchanda Municipality









CHALLENGES

1. Discrepancies in names of locations due to the information provided by KIs and lack of official names of various sites, including POEs.
2. Inaccessibility of some sites by vehicle due to the rough geographical terrain, worsened by heavy rains during monsoon season. Long distances were often covered by foot by the enumerators, despite high weather temperatures.
3. Restricted movement and lockdown created difficulties in reaching KIs and urged for continuous coordination to utilize time efficiently and arrange dispatchment of enumerators to the priority sites.
4. Enforcement of Standard Operating Procedures (SOPs) and reminders for Infection and Prevention Control (IPC) measures required constant efforts of the field team throughout the activities.

RECOMMENDATIONS

1. Establish health screening stations at POEs and all other priority locations. Body temperature checking should be advised at sites with high population mobility.
2. Set up mechanisms to record people's movement, especially their origin and destination. This is indispensable to trace affected cases, in the event of an outbreak.
3. Strengthen IPC and Water, Sanitation and Hygiene (WASH).
4. Invest in capacity building of health infrastructure. This is especially the case for health posts, often located in remote areas and hardly accessible, even by foot.
5. Focus on risk communication and community engagement. The community should be involved in health-related activities and awareness should be raised on the importance of good sanitary conditions.
6. Develop a health working group for Nepal and corresponding countries at formal POEs for both IHR and PHEIC focal points. This will allow for a better management of travellers' movement, especially for tracking purposes.
7. Conduct leadership training for all traditional healers in order to enhance their health practices, and adhere to SOPs within their communities, especially in hostile communities where people rely on them for health and other issues.

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