NEPAL

EXECUTIVE SUMMARY

COUNTRY-WIDE ANALYSIS OF PRE-POSITIONED RELIEF ITEMS

November 2020

INTRODUCTION

Pre-positioning relief items in disaster prone countries or regions is a common mechanism adopted by many humanitarian organisations to increase their readiness in delivering assistance.

Despite this preparedness measure being widely implemented, and due to many different strategic approaches or capacities, there is an alarming lack of coordination within and across organisations, both at national and regional levels, as to which relief items to pre-position, where and in which quantities.

A range of studies have recently demonstrated the needs to invest in preparedness activities[1] whilst also enhancing effective collaboration through a better access to pooled resources[2].

WHAT IS ESUPS?

The Emergency Supply Pre-Positioning Strategies (ESUPS) Working Group was created in 2016 by a group of stakeholders interested in improving the definition of more efficient and effective prepositioning strategies of relief items at national and regional levels to ensure a minimum of duplication or gaps and reduce times and costs of responses.

ESUPS IN NEPAL

In September 2019, ESUPS engaged with Nepal as one of the countries selected for implementation. This decision was aligned with the Logistics Cluster Preparedness unit's selection of countries to ensure a coordination mechanism would be in place to work on the support ESUPS could offer.

With the support of the Nepal Log Cluster coordinator, the Welthungerhilfe office and OCHA, ESUPS initiated a data collection process about stock levels and other required logistics information to trigger an analysis. ESUPS also organised a first visit in country to present its project as well as some specific elements such as its STOCKHOLM platform and its analytics mathematical model developed by Penn State University in collaboration with the MIT. This visit took place in March 2020 and was followed by a few more information requests and clarifications.

This report presents the findings of our analysis of the current pre-positioned stock in Nepal.

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[2] Action Contre la Faim: Supply Chain Expenditures & Preparedness Investment Opportunities in the Humanitarian Context

[3] Strength in Numbers by Reseau Logistique Humanitaire

EXECUTIVE SUMMARY

The information provided in this document are divided in two parts: an **ASSESSMENT** of the current stocks pre-positioned in Nepal, looking at the quantities and locations, and a set of **RECOMMENDATIONS** per item, to help decision-makers in country re-allocate those stocks to be more time and cost efficient at times of disasters. Both the assessment and recommendations are made on a collective approach.

This document does not recommend pre-positioning strategies at individual agency level, the very purpose of the ESUPS project being to foster collaborative approaches such as loan-borrowing. However, should those recommendations move towards implementation, it is expected that individual agencies could draw their own pre-positioning strategy from this overall approach, now considering in country partners and other players capacities and strategies.

Here are the main findings and recommendations identified by the ESUPS analytics tools. Please note that those recommendations provide guidance towards a more optimum national coordinated pre-positioning model and not a definite solution.

Many local specific factors could not be considered, and like for any mathematical model, assumptions were made. That context-specific information needs to be discussed and factored in at country level.

The findings contained in this report are to be looked at in complement of the Analytics tool provided alongside this document. This allows the user to look at each detailed location about the availability of stock per Cluster/Per items/ and per warehouse location.

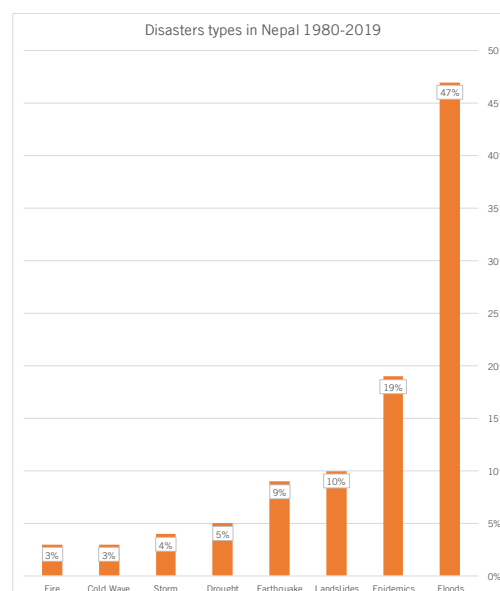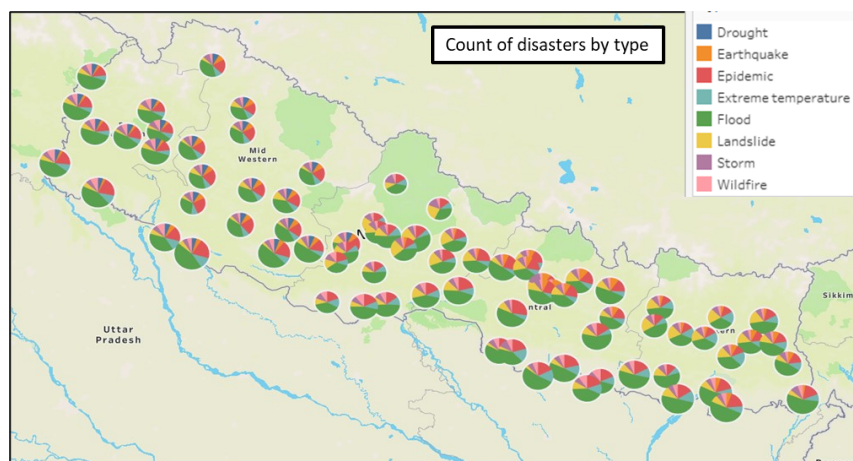# ANALYTICS METHODOLOGY—STEP 1: ANALYSE HISTORY OF DISASTERS IN NEPAL

- Since 1980, Nepal was affected by 112 disasters, 102 of which affected more than 100 people. That is 91% of disasters affecting more than 100 people

- 90% of disasters in Nepal affected less than 250,000 people
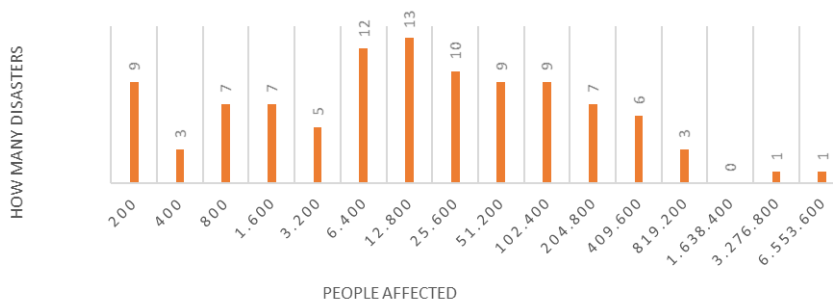
- When looking at the disasters by the number of affected people, the most vulnerable area is the Kathmandu area, simply due to the concentration of people in this area as well as the impact of the 2015 Earthquakes. We can also see that when focusing on the middle size disasters they are all in the South of the country. That could be explained by the fact that many of those disasters are floods, which are a consequence of water flowing down (and south) from the mountains range.
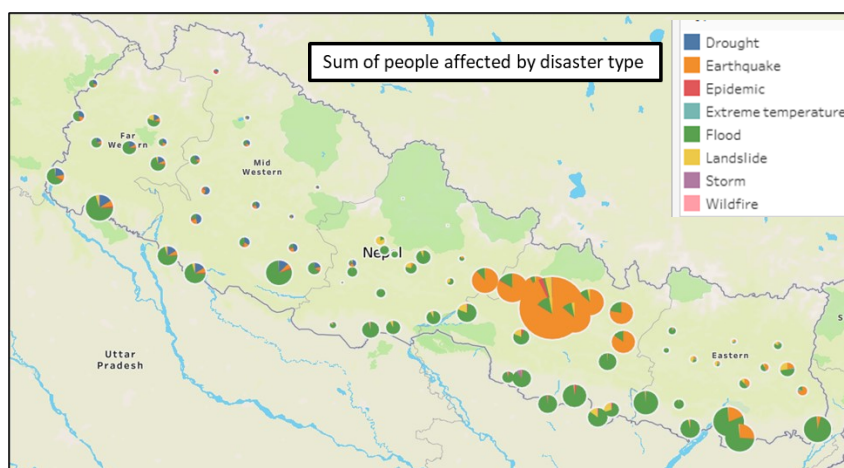
- Focusing on disaster type, floods, epidemics and landslides are predominant and quite evenly distributed across the country.

ANALYTICS METHODOLOGY—STEP 2: COLLECT PRE-POSITIONED STOCK AND LOGISTICS DATA

ESUPS has created a platform aimed at capturing existing stock situation in country. The STOCK of Humanitarian Organisation Logistics Mapping (STOCKHOLM) platform is now partially available after the first development phase and was used to enter the Nepal Stocks collected. The data collection was coordinated in country by the Logistics Cluster Coordinator and his team.

| ITEM GROUP	QUANTITY	RATIO
SHELTER TOOL KITS	3057	100 %
SLEEPING MATS	4981	100 %
SOLAR LIGHTS	2206	100 %
TARPAULIN	77498	100 %
TENTS	637	100 %
WATER CONTAINERS	22900	100 %
WATER DISTRIBUTION & STORAGE	151	100 %
WATER PURIFICATION TABLETS	182699	100 %

ANALYTICS METHODOLOGY—STEP 3: ANALYSE DATA THROUGH THE MATHEMATICAL MODEL

With those two sets of data (history of disasters and existing pre-positioned stock situation), ESUPS, through its mathematical model could trigger the analysis.

The model provides an **optimised average response time and costs over all scenarios.** This means that based on the model recommendation, sometimes users may lose a bit in terms of time and/or cost, but that on average they will collectively come out ahead and save time and cost.

The ESUPS model works at a national and collective level. This analysis does not provide any agency-specific information but rather look at the situation for each item independently of who owns it. This is the core principle of the ESUPS project: support and encourage collaboration and coordination to maximise cost and time efficiency. There are currently 4 Clusters reporting on 20 core Relief items as per summary table.
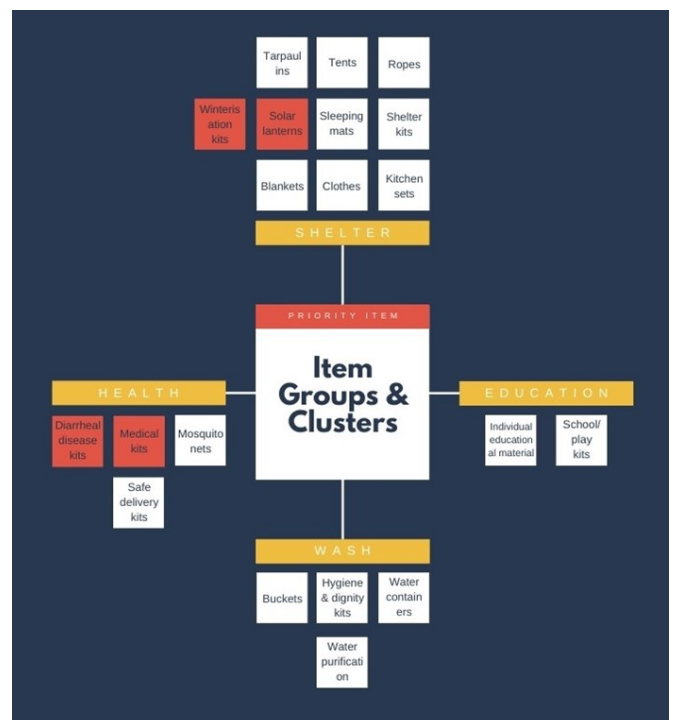
OVERALL ASSESSMENT

1 Based on the current pre-positioned stock in country, the present actors collectively have an **average capacity across all 20 items** studied to cover **72% of disasters** in country without international assistance. This means all items combined are stored in sufficient quantities to support disasters affecting an average of **50,082 people or less**. To increase this percentage, the Nepal responders will have to increase the overall quantities of stocks.

AVERAGE CAPACITY
Based on currently pre-positioned items

disasters not covered 28%

disasters covered 72%
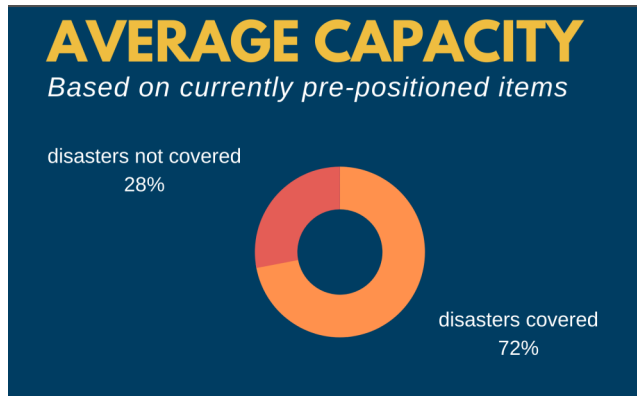
6/20 ITEMS

stored in sufficient quantities:
clothes, diarrheal disease kits, hygiene & dignity kits, medical kits, tarpaulins, water purification tablets

2 Should the Nepal responders decide collectively to be able to **support 85%** of disasters in country without international assistance, **only 6 items out of 20 are currently stocked in sufficient quantities at the national level** (not necessarily in the right location).

SAVINGS
13% TIME **20%** COST

3 Total potential savings if the proposed coordinated pre-positioning strategy is implemented

4 In terms of priority, the most important items to look at in order to make a significant time and cost impact are **Medical kits, Diarrheal Disease kits, Solar Lanterns and Winterization kits**. Although many of those are pre-positioned in sufficient quantities (see above), the locations where they are pre-positioned are the furthest from an optimum situation.

5 The least priorities are **Blankets, Mosquito Nets and Water Purification tablets**. This means that, although those are not pre-positioned in enough quantities (except the Water purification tablets), they are relatively well pre-positioned at a geographic level.

PRIORITY

HIGH Medical kits, Diarrheal Disease kits, Solar lanterns, Winterization kits.

LOW Blankets, Mosquito nets, Water purification tablets.

OVERSTOCKED

Warehouses: Kathmandu, Janakpur and Nepalgunj.
Provinces: Prov-5 and Province-3.

UNDERSTOCKED

Warehouses: Bharatpur, Hetauda and Inaruwa.
Provinces: Prov-1 and Sudhur Paschim.

6 In terms of location, the warehouses that are the further from an optimal stock's contents are:
   a. Bharatpur, Hetauda and Inaruwa for the warehouses that are currently understocked
   b. Kathmandu, Janakpur and Nepalgunj for the warehouses currently overstocked.

At a larger provincial scale, the 2 most understocked provinces are Prov-1 and Sudhur Paschim while the 2 most overstocked provinces are Prov-5 and Province -3.

RECOMMENDATIONS PER ITEM

At the Nepal partners request, ESUPS provided a collective per item analysis providing information as to which locations were overstocked or understocked and how items could be moved between warehouses to save time and costs during responses.

The tool designed and used to run those analysis is available to all Nepal partners to adjust the variables and run new analysis as per their needs.

Besides is one example of such an analysis. All 20 items analysis are available in the full report.

BUCKETS
Assessment rating

Quantities

good

Locations (based on 85% goal)

average

Potential time and cost savings

TIME: 12%

COST: 16%

QUANTITIES	LOCATIONS

The current pre-positioned stock of buckets across the country allows Nepal responders to cover **83% of disasters** across the country without international assistance.

- to cover 75% of disasters: the current overall quantity (38,527 units) is sufficient
- to cover 85% of disasters: increase current overall quantity (38,527 units) by a ratio of 1.80 to reach 69,282 units

Although stored in enough quantities across the country, the overall geographical balance of where buckets are currently stored can be improved.

On the basis of the existing stock of buckets (38,527), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED			
	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	24,476	3,104	**21,372**
Janakpur	3,853	437	**3,416**
Bhimdatta	1,799	446	**1,353**
UNDERSTOCKED			
Bharatpur	NONE	8,751	
Hetauda	164	7,942	
Inaruwa	NONE	5,111	

CONTACTS

WFP staff handling COVID related medical supplies received from UAE AID fund at the Humanitarian Staging Area in Kathmandu. Credit: Sher Ghimire

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