



ESUPS

EMERGENCY SUPPLY PRE-POSITIONING STRATEGY



USAID

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NEPAL

COUNTRY-WIDE ANALYSIS OF PRE-POSITIONED RELIEF ITEMS

November 2020



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For a world without hunger



Save the Children



BritishRedCross



UNHRD

Humanitarian Response Dept



100
1919-2019



International Organization for Migration (IOM)
The UN Migration Agency



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PennState



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AKNOWLEDGMENTS

ESUPS would like to recognise and thank the following organisations, agencies and individuals that participated in this study:

- Action Against Hunger Nepal
- Action Aid Nepal
- Care Nepal
- Humanity & Inclusion Nepal
- Mrs Rajali Mahrjan (Researcher)
- OCHA Nepal
- Jason Acimovic (Penn State University)
- Plan International
- Rural Reconstruction Nepal
- Save the Children Nepal
- The International Federation of Red Cross & Red Crescent Societies
- The Lutheran World Federation
- Nepal Humanitarian Country Team
- Nepal Ministry of Home Affairs
- Nepal Red Cross Society
- UNFPA Nepal
- UNICEF Nepal
- United Mission to Nepal
- Welthungerhilfe Nepal
- WFP Nepal Logistics Cluster
- WHO
- World Vision Nepal

INTRODUCTION

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 as a preparedness measure. It is composed of Member States, Red Cross/Crescent Movement, NGOs, Academics, UN Agencies, and Regional Organisations that work in logistics preparedness and pre-positioning at strategic and operational levels. ESUPS is governed by a Steering Group (SG) chaired by Welthungerhilfe and includes **Action Against Hunger, The British Red Cross, The International Federation of the Red Cross and Red Crescent Societies (IFRC), The International Organization for Migration (IOM), Save the Children, USAID/OFDA, Pennsylvania State University (PSU), PLAN International** and the UNHRD.

OUR VISION

To support the definition of coordinated and coherent national and regional pre-positioning strategies, maximising time and cost efficiency of dispatch through further developed usage of the coordination mechanisms of data sharing, loan-borrowing, and limitations in branding. ESUPS works on the improvement of predictability and relevance of pre-positioned emergency supplies to ensure that the humanitarian community has the right items in the right quantities pre-positioned in the right places, with a minimum of duplication or gaps, and to ensure their timely and efficient dispatch and replenishment.

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.

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.



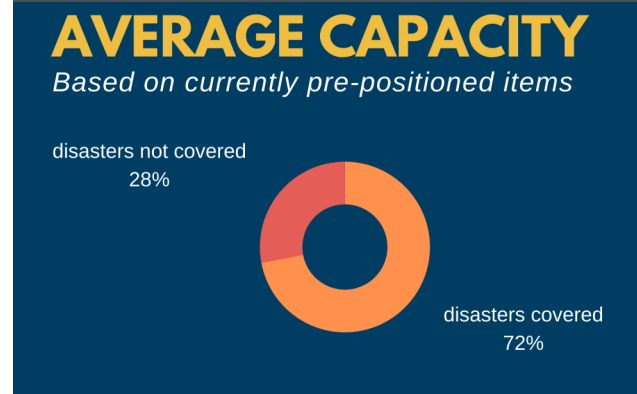
Here are the main findings and recommendations identified by the ESUPS analytics tools. Please note that **those recommendations provide guidance towards a more optimum national coordinated pre-positioning model and not a definite solution.**

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.

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.



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.

PRIORITY

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

LOW Blankets, Mosquito nets, Water purification tablets.

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.

↑ 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:

- Bharatpur, Hetauda and Inaruwa for the warehouses that are currently understocked
- 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.

ANALYTICS METHODOLOGY

DATA COLLECTION → DATA ANALYSIS → RESULTS

DISASTER HISTORY: types, frequency, intensity, locations, impacts

EXISTING STOCK: collect, computerise, display

LOGISTICS INFO: driving time, driving distances, weights, volumes, costs, number of people served per item

MATHEMATICAL MODEL

$$V^W(X) \equiv \min_y \sum_k p^k \sum_{i \in I^W, r} \tau_{i,j^k,r} y_{ir}^k$$

$$\sum_{i \in I^W, r} y_{ir}^k = d^k \quad \forall k$$

$$\sum_r y_{ir}^k \leq X_i \quad \forall i \in I, k$$

$$y_{ir}^k \geq 0 \quad \forall i, k, r$$

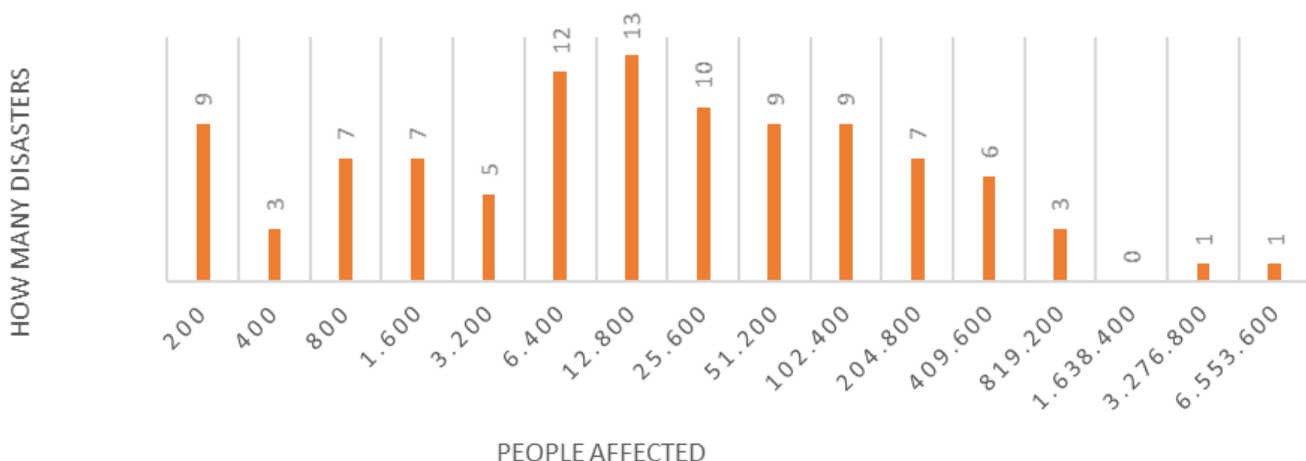
ASSESSMENT
of existing pre-positioned stocks in the country

RECOMMENDATIONS
toward a more optimum (cost & time) coordinated pre-positioning strategy

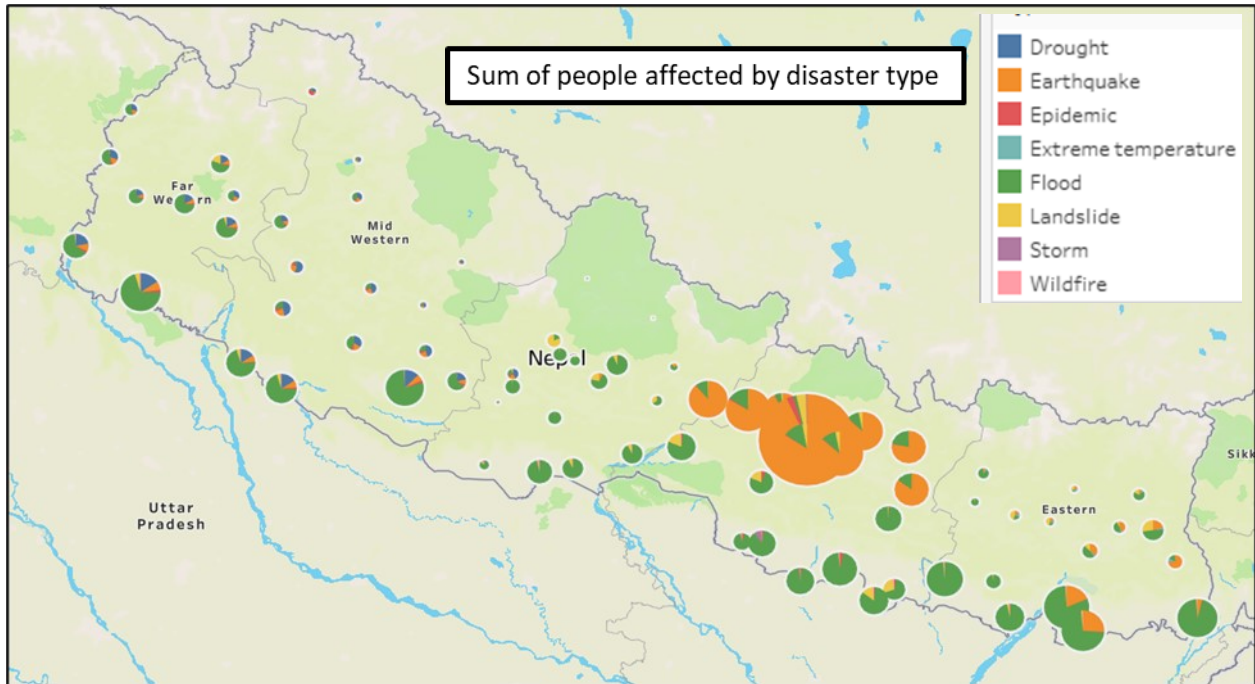
STEP 1: ANALYSE HISTORY OF DISASTERS IN NEPAL

The first phase consisted in analysing how, where, and what type of disasters affects Nepal. To find out, ESUPS analysed the last 40 years of disasters (1980- 2019) through the [EM-DAT database](#), provided by the [Centre for Research on the Epidemiology of Disasters](#) (CRED).

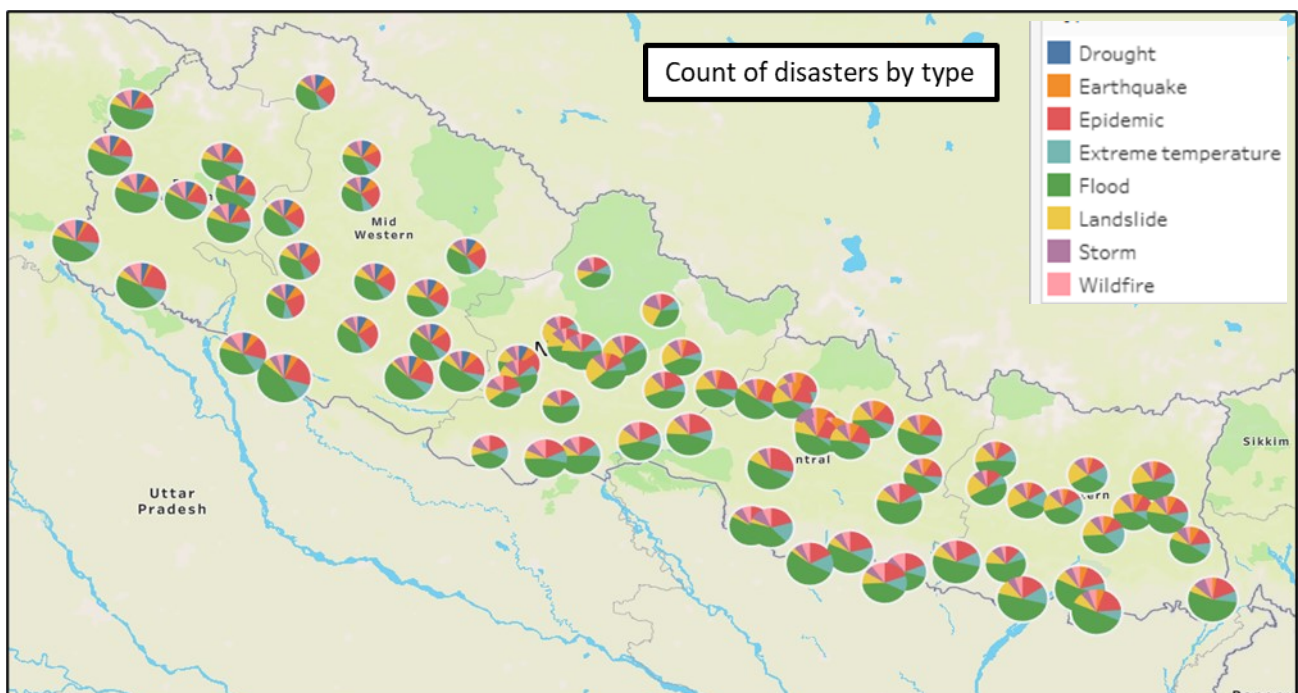
- Since 1980, Nepal was affected by 112 disasters, 102 of which affected more than 100 people. That is 91% of disasters affecting more than 100 people
- 90% of disasters in Nepal affected less than 250,000 people

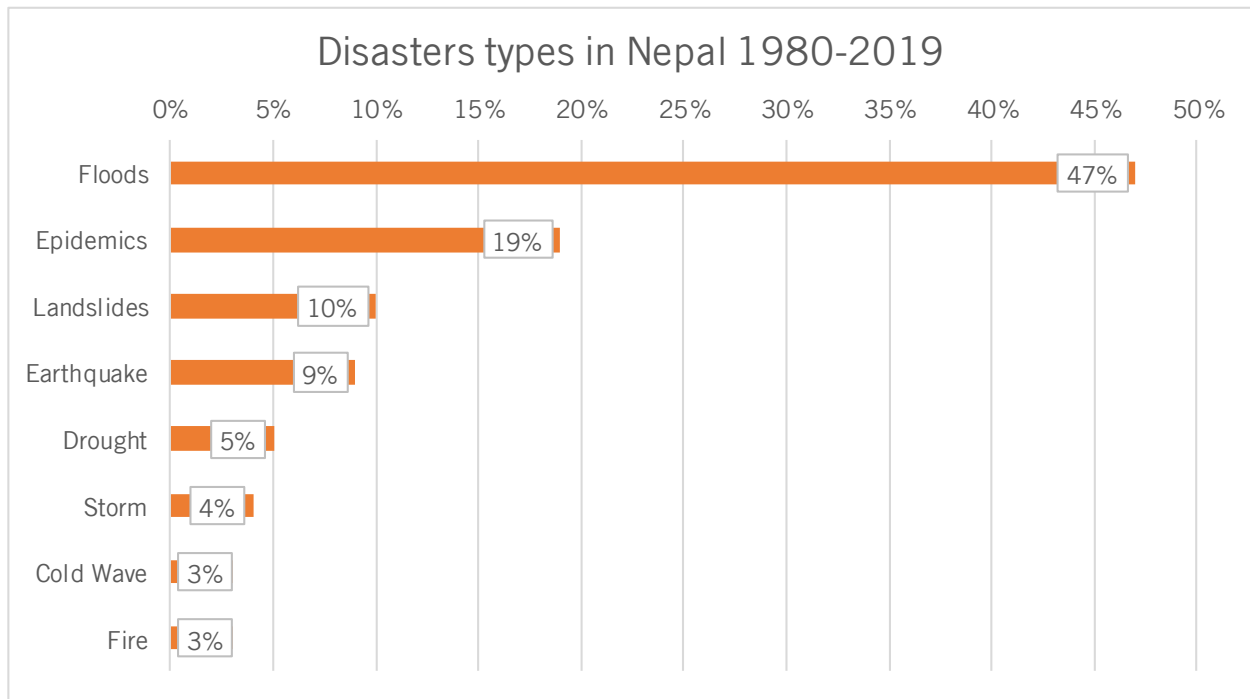


- When looking at the disasters by the number of affected people, the most vulnerable area is the Kathmandu area, simply due to the concentration of people in this area as well as the impact of the 2015 Earthquakes. We can also see that when focusing on the middle size disasters they are all in the South 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.



- However, when changing the focus to the disaster type we can clearly see that floods, epidemics and landslides are predominant and quite evenly distributed across the country.





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.

The stock data collection exercise consists of important points that needed to be implemented and followed:

- Abide by the Item-Groups defined with the technical clusters, aimed at standardising the nomenclature of Non-Food Items (NFI) to facilitate the aggregation and analysis of data. While this leaves the liberty to the users to call the items as relevant as wanted for their organisation, it requires each item to be registered under an existing

Item Group. Each Item Group belongs to one Cluster for now. Further development may facilitate having one Item group belong to multiple Clusters.

- Spelling mistakes or differences prevented aggregation of data, and a manual cleaning process was required to standardise stocks location and spelling, allowing the compilation and filtering of data.
- Other logistics information was required and provided through the Nepal Log Cluster and partners: driving time & distances, weights, volumes, costs, number of people served per item, etc....

This initial stock data collection was done through an Excel template so that the ESUPS team could enter those data into the platform and therefore avoid the users to have to do this initial, and heavy work themselves.

From now all users in Nepal can register to access the STOCKHOLM platform and from there, access, update or modify any of their own stock information.

The data collection process and the initial findings presentation during the March 2020 visit, highlighted a few issues and challenges:

- Stock collection: what works (Nepal Log Cluster as focal point, data clarifications, etc.) and what could work better (buy-in from partners, coordination commitment, misunderstanding on the stock ownership and access question). On the STOCKHOLM platform questions around access, roles of different partners, and next step were also discussed. Regarding the cleaning of the database, it was also clarify to: stick to the items groups per cluster, regroup locations, etc.. In that last regards, minor adjustments have been made to match the stocks locations, the Em-Dat data and the google Maps’.

As such and because of their very close proximity the following locations name were modified:

Butwal	➔	Siddhartnagar
Bairahawa	➔	Siddhartnagar
Udaypur	➔	Gaigat
Panchtar	➔	Phidim
Lamjung	➔	Besisahar
Mahendranagar	➔	Bhimdatta
Doti	➔	Dipayal
Kohalpur	➔	Nepalgunj

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.

Before heading into the findings, themselves, here are a few important points to clarify to understand what the model offers and how it works:

ASSUMPTIONS: Like any other mathematical model, the ESUPS one rests on technical solutions and assumptions. It is impossible for any model to capture all context specifics information and, in order to build a model that can provide guidance, assumptions need to be made. In the case of this model, the following assumptions were made:

- * It did not consider disasters affecting less than 100 people
- * It assumes that every people “affected” (as per Em-DAT information) are in need of Relief Items
- * The number of people served per item is based on the SPHERE Standards and practitioners experience
- * No damage occurred to main axes and warehouses themselves
- * It does not consider the private sector and therefore replenishment capacities
- * The absorption capacity at distribution point
- * No domestic air transport was considered, only road transport

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.

It is imperative that all recommendations are looked at considering the local context specificities that could not be included in the model. For instance, if the model recommends increasing the stock levels of tents by 55

times it does not mean it is physically feasible, but rather demonstrates that as per the actual situation the country is not ready enough on a tent level.

Finally, 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.

ANALYSIS RESULTS

The below results are presented at two levels:

1. A national overview of the current situation. This first part assesses the current national pre-positioned strategy in terms of quantities of NFI and their location.
2. A second part, more detailed, and through criteria decided by the users, provides an assessment and recommendations towards a more optimum and coordinated pre-positioning strategy, at Cluster and individual relief items level.

Among the information provided are:

- An overall color-coded rating on both the quantities and locations of a Relief Item.
- Two lines of details on the Quantities and the Locations explaining the overall rating.
- A graph visualising the understocked and overstocked locations.

- Details about which warehouses are overstocked and where their surplus could be sent.
- Details about which warehouses are understocked and where additional stock could come from.
- Potential time and cost savings, should the recommendations be implemented.

It is important to be reminded that the model provides an overall assessment and recommendations based on the data collected and on necessary assumptions. The recommendations should then be considered as such, and not as definitive answers, and should be discussed considering the local contextual factors that were not integrated in the model.

ASSESSMENT



Some Relief Items, despite being registered under one common Item Group, are too different to be analysed. For instance, the Female Friendly Space, as explained by UNFPA, can literally be any space, such as an open classroom, any available structure, or tents where the contents of the spaces depend on how the space is used and so there is no such thing as a ready-made set to be analysed.

The recommendations are based on a set percentage of 85% disasters the country wants to be able to support independently, and without the need to request any international assistance. This percentage can be changed by the users at any point.

The Overall Rating provides 3 levels of color coding:

Good (70% - 100%)	Not many improvements needed
Average (50% - 70%)	Some changes are required
Improve (0% - 50%)	Important changes needed

- Based on the current pre-positioned stock in country, the present actors collectively have **20 Items over 20 in sufficient quantities** to cover a bit over **33%** of disasters in country.
- Should the Nepal responders decide 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):
 - * Clothes (Shelter)
 - * Diarrheal Disease kits (Health)
 - * Hygiene and dignity kits (Protection)
 - * Medical kits (Health)
 - * Tarpaulins (Shelter)
 - * Water Purification tablets (Wash)
- 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 Winterisation 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.
- 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. In terms of location, the warehouses that are the further from an optimal stock's contents are:
 - * Bharatpur, Hetauda and Inaruwa for the warehouses that are currently under-stocked
 - * 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.
- The average cost and time savings, for implementing the recommendations across all 20 Relief Items looked at, could reach respectively 20% and 13%.

RECOMMENDATIONS PER ITEM

The tool provided allows the users to run their own analysis by following a step by step process:

- Select a cluster
- Select a Relief Item
- Select a location
- Select a percentage of disasters desired to be supported nationally without the need for international assistance. For the below per item analysis, this rate has been set at 85%. The user can change that at any moment.

On the basis of this selection the system will then indicate four possible answers:

- 1) There is not enough stock in the selected location and there is not enough across the country. It requires additional procurement (Colour code Red).
- 2) There is not enough stock in the selected location, but there is enough across the country to balance the stocks in an optimum way (Colour code Orange) => the system will then indicate which other warehouses stock can be moved from.

- 3) There is too much stock in the selected location, but overall, not enough across the country and it is possible to improve optimisation by moving stocks from the selected location to the places where there is a need. (Colour code Yellow) => the system will then indicate where stock can be moved to.
- 4) There is enough stock in the selected warehouse and overall, too much across the country. (Colour code Green) => the system will then indicate where stock can be moved to.

In addition to this summary analysis, it will also be possible to access the complementary tabs, allowing to get details on all items.

While this analysis tool is currently on an Excel format, it will be encoded in the STOCKHOLM platform in its second phase development to make it more accessible and user-friendly.

SHELTER CLUSTER

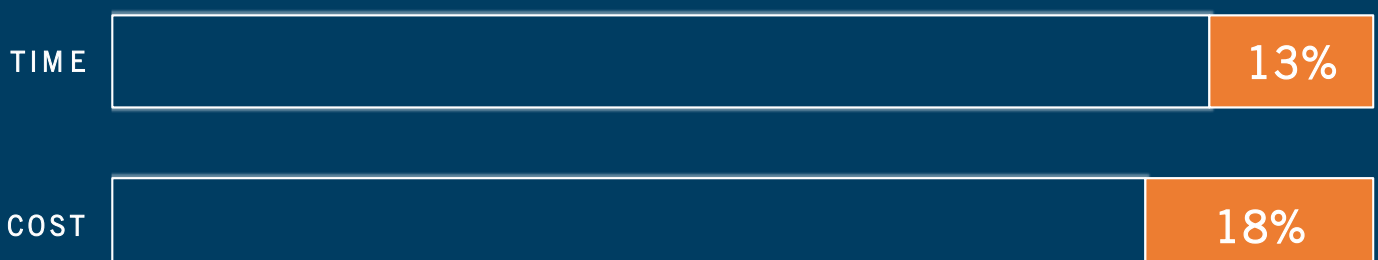


OVERVIEW

10 ITEMS

- BLANKETS
- CLOTHES
- KITCHEN SETS
- SHELTER KITS
- SLEEPING MATS
- SOLAR LANTERNS
- TARPAULINS
- TENTS
- ROPES
- WINTERISATION KITS

AVERAGE SHELTER SAVINGS





BLANKETS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 5%

COST: 6%

QUANTITIES

The current pre-positioned stock of blankets across the country allows Nepal responders to cover **68% of disasters** across the country without international assistance.

- to cover 75% of disasters: increase current overall quantity (63,087 units) by a ratio of 1.55 to reach 97,730 units
- to cover 85% of disasters: increase current overall quantity (63,087 units) by a ratio of 4.58 to reach 288,674 units

LOCATIONS

Although not stored in enough quantities across the country, the overall geographical balance of where blankets are currently stored is relatively good.

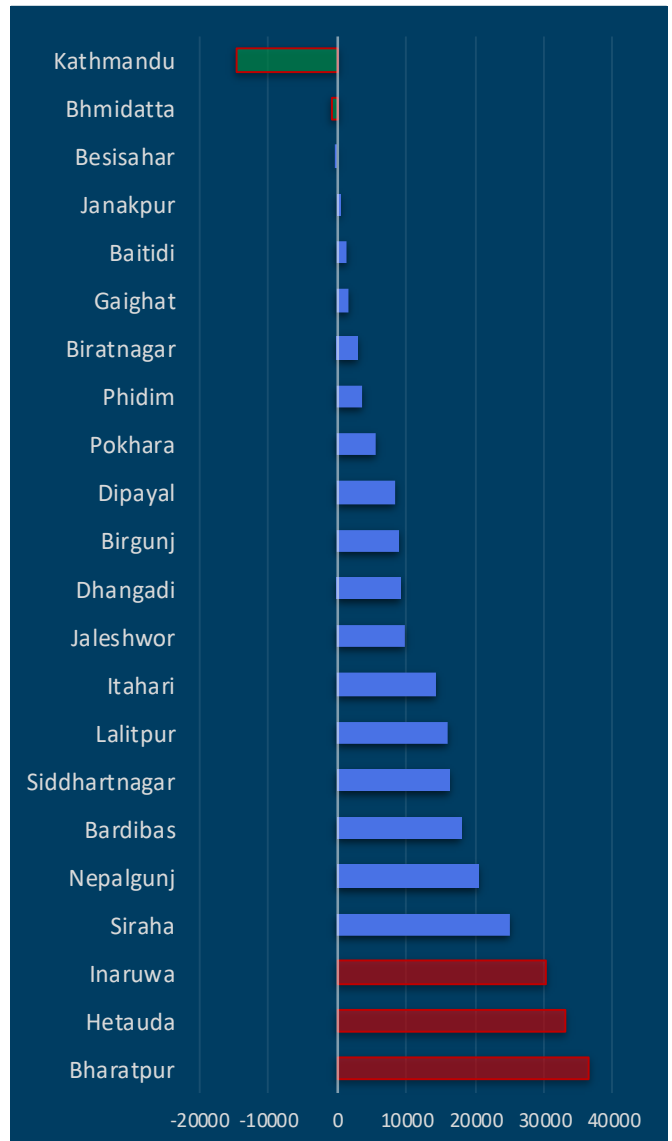
On the basis of the existing stock of blankets (63,087), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	27,509	12,933	14,576
Bhimdatta	2,752	1,860	892

UNDERSTOCKED

Bharatpur	NONE	36,462
Hetauda	NONE	33,093
Inaruwa	NONE	30,408





CLOTHES

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 11%

COST: 19%

QUANTITIES

The current pre-positioned stock of clothes across the country allows Nepal responders to cover **94% of disasters** across the country without international assistance.

- to cover 75% of disasters: the current overall quantity (429,013 units) is sufficient
- to cover 85% of disasters: the current overall quantity (429,013 units) is sufficient

LOCATIONS

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

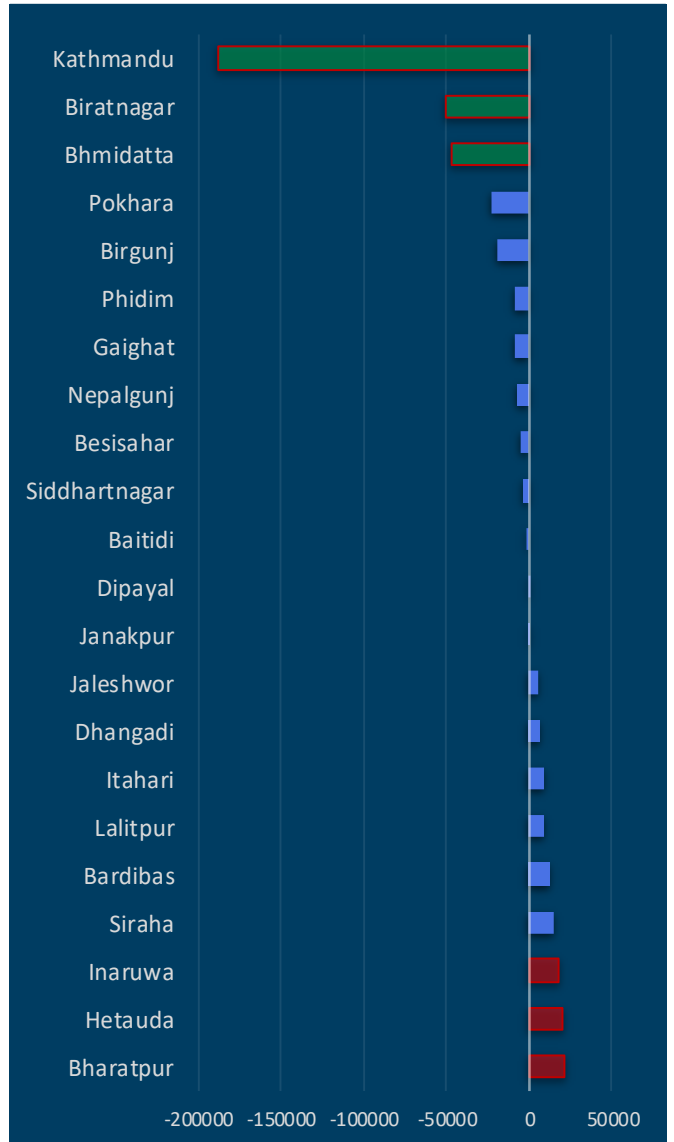
On the basis of the existing stock of clothes (429,013), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	196,236	7,760	188,476
Biratnagar	56,733	6,087	50,646
Bhimdatta	47,895	1,116	46,779

UNDERSTOCKED

Bharatpur	NONE	21,877
Hetauda	NONE	19,856
Inaruwa	NONE	18,245





KITCHEN SETS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 11%

COST: 14%

QUANTITIES

The current pre-positioned stock of kitchen sets across the country allows Nepal responders to cover **64% of disasters** across the country without international assistance.

- to cover 75% of disasters: increase current overall quantity (5,110 units) by a ratio of 2.67 to reach 11,728 units
- to cover 85% of disasters: increase current overall quantity (5,110 units) by a ratio of 6.78 to reach 34,641 units

LOCATIONS

Besides not being stored in enough quantities across the country, the overall geographical balance of where kitchen sets are currently stored can be improved.

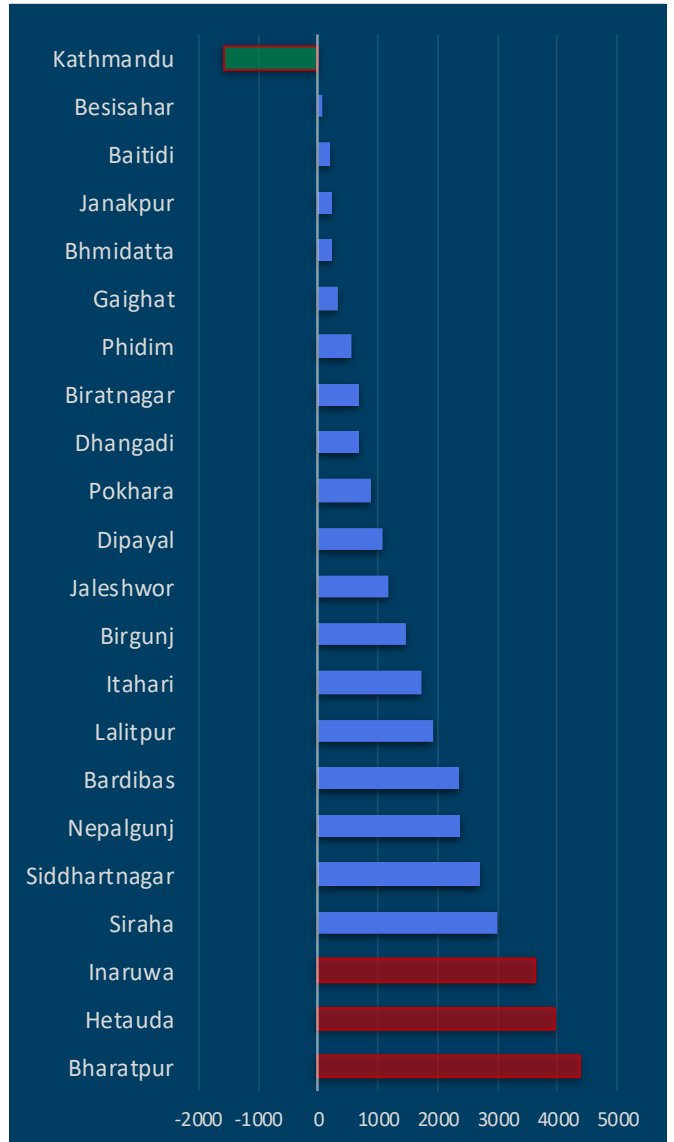
On the basis of the existing stock of kitchen sets (5,110), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	3,125	1,552	1,573

UNDERSTOCKED

Bharatpur	NONE	4,375	
Hetauda	NONE	3,971	
Inaruwa	NONE	3,649	





SHELTER KITS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 11%

COST: 14%

QUANTITIES

The current pre-positioned stock of shelter kits across the country allows Nepal responders to cover **67% of disasters** across the country without international assistance.

- to cover 75% of disasters: increase current overall quantity (6,574 units) by a ratio of 1.78 to reach 11,728 units
- to cover 85% of disasters: increase current overall quantity (6,574 units) by a ratio of 5.27 to reach 34,641 units

LOCATIONS

Besides not being stored in enough quantities across the country, the overall geographical balance of where shelter kits are currently stored can be improved.

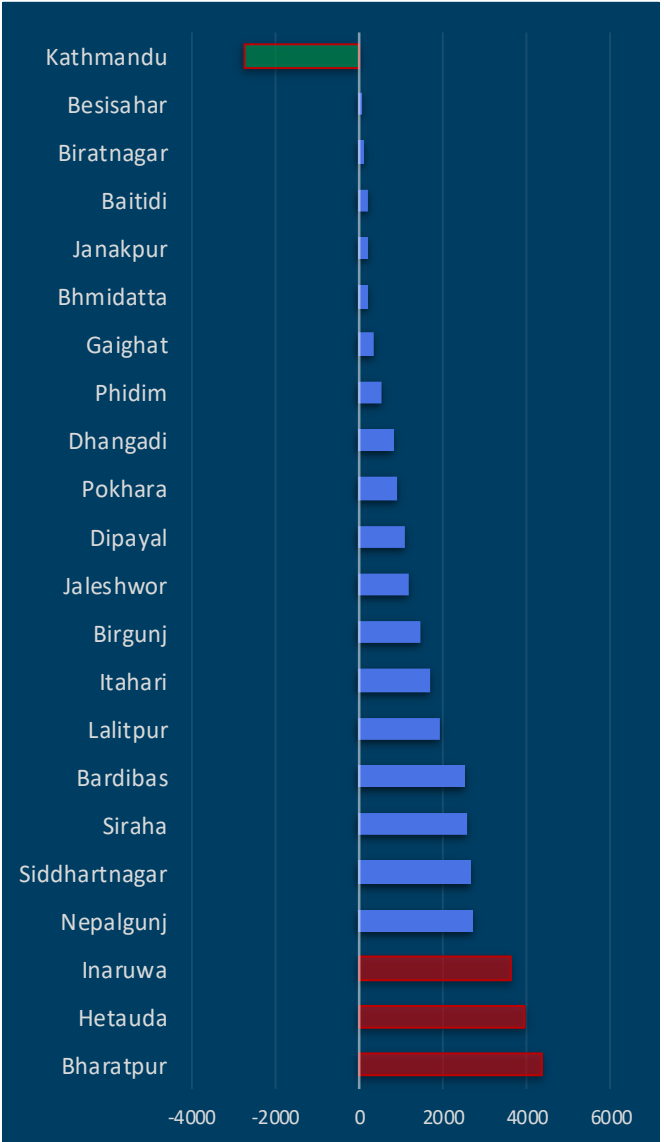
On the basis of the existing stock of shelter kits (6,574), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	4,291	1,552	2,739

UNDERSTOCKED

Bharatpur	NONE	4,375	
Hetauda	NONE	3,971	
Inaruwa	NONE	3,649	

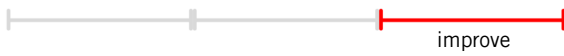




SLEEPING MATS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 11%

COST: 15%

QUANTITIES

The current pre-positioned stock of sleeping mats across the country allows Nepal responders to cover **38% of disasters** across the country without international assistance.

- to cover 75% of disasters: increase current overall quantity (4,981 units) by a ratio of 11.77 to reach 58,638 units
- to cover 85% of disasters: increase current overall quantity (4,981 units) by a ratio of 34.77 to reach 173,205 units

LOCATIONS

Besides not being stored in enough quantities across the country, the overall geographical balance of where sleeping mats are currently stored can be improved.

On the basis of the existing stock of sleeping mats (4,981), 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.

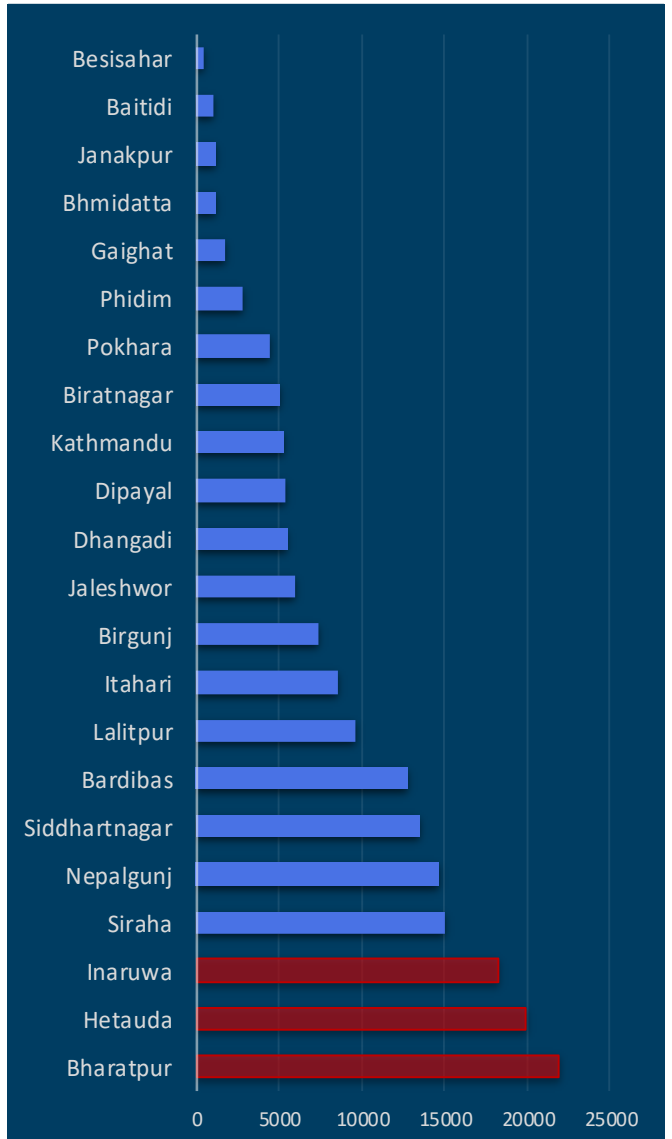
OVERSTOCKED

CURRENT STOCK OPTIMAL STOCK CAN BE MOVED

NO LOCATION CURRENTLY OVERSTOCKED

UNDERSTOCKED

Bharatpur	NONE	21,877
Hetauda	NONE	19,856
Inaruwa	NONE	18,245





SOLAR LANTERNS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 21%

COST: 36%

QUANTITIES

The current pre-positioned stock of solar lanterns across the country allows Nepal responders to cover **53% of disasters** across the country without international assistance.

- to cover 75% of disasters: increase current overall quantity (2,206 units) by a ratio of 5.32 to reach 11,728 units
- to cover 85% of disasters: increase current overall quantity (2,206 units) by a ratio of 15.70 to reach 34,641 units

LOCATIONS

Besides not being stored in enough quantities across the country, the overall geographical balance of where solar lanterns are currently stored can be improved.

On the basis of the existing stock of solar lanterns (2,206), 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.

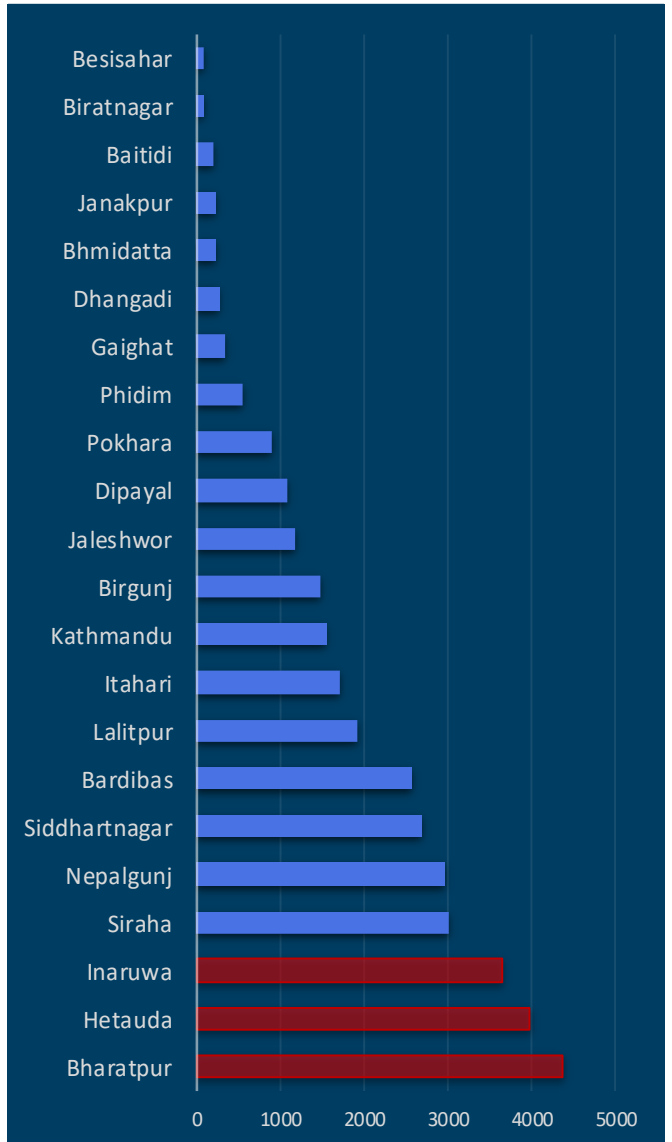
OVERSTOCKED

CURRENT STOCK OPTIMAL STOCK CAN BE MOVED

NO LOCATION CURRENTLY OVERSTOCKED

UNDERSTOCKED

Bharatpur	NONE	4,375
Hetauda	NONE	3,971
Inaruwa	NONE	3,649





TARPAULINS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 10%

COST: 13%

QUANTITIES

The current pre-positioned stock of tarpaulins across the country allows Nepal responders to cover **88% of disasters** across the country without international assistance.

- to cover 75% of disasters: the current overall quantity (77,498 units) is sufficient
- to cover 85% of disasters: the current overall quantity (77,498 units) is sufficient

LOCATIONS

Besides being stored in enough quantities across the country, the overall geographical balance of where tarpaulins are currently stored is relatively good.

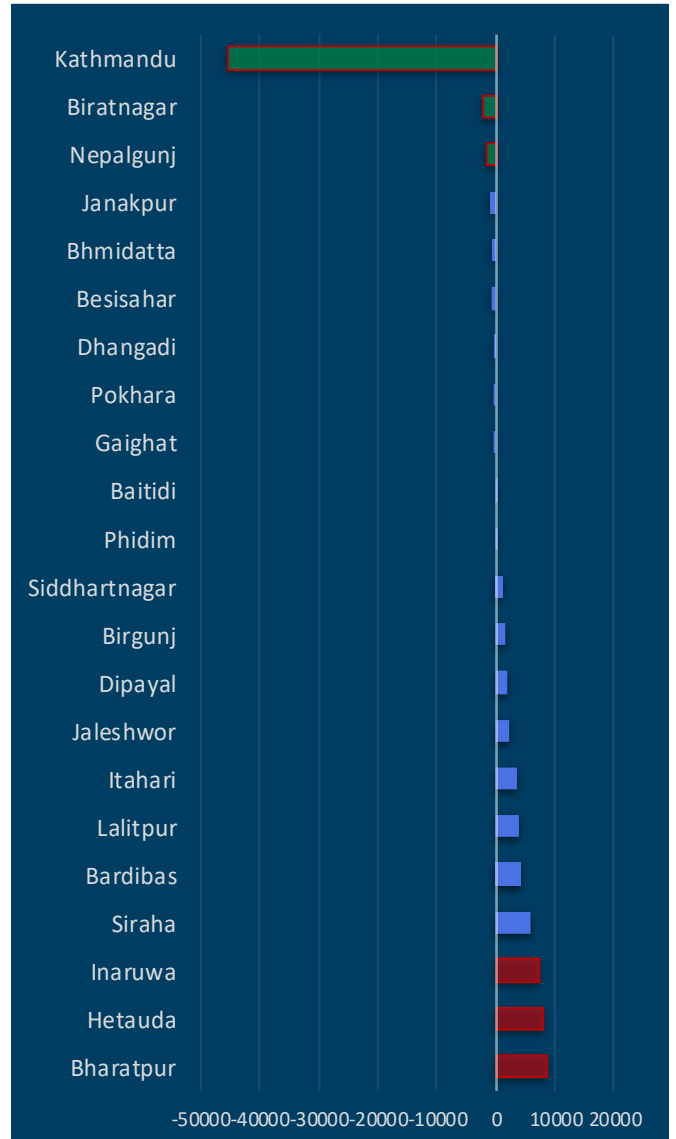
On the basis of the existing stock of tarpaulins (77,498), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	48,594	3,104	45,490
Biratnagar	4,553	2,435	2,118
Bhimdatta	7,335	5,950	1,385

UNDERSTOCKED

Bharatpur	NONE	8,751
Hetauda	NONE	7,942
Inaruwa	NONE	7,298

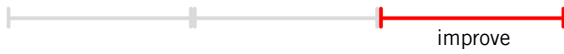




TENTS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 13%

COST: 16%

QUANTITIES

The current pre-positioned stock of tents across the country allows Nepal responders to cover **33% of disasters** across the country without international assistance.

- to cover 75% of disasters: increase current overall quantity (678 units) by a ratio of 17.30 to reach 11,728 units
- to cover 85% of disasters: increase current overall quantity (678 units) by a ratio of 51.09 to reach 34,641 units

LOCATIONS

Besides not being stored in enough quantities across the country, the overall geographical balance of where tents are currently stored can be improved.

On the basis of the existing stock of tents (678), 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.

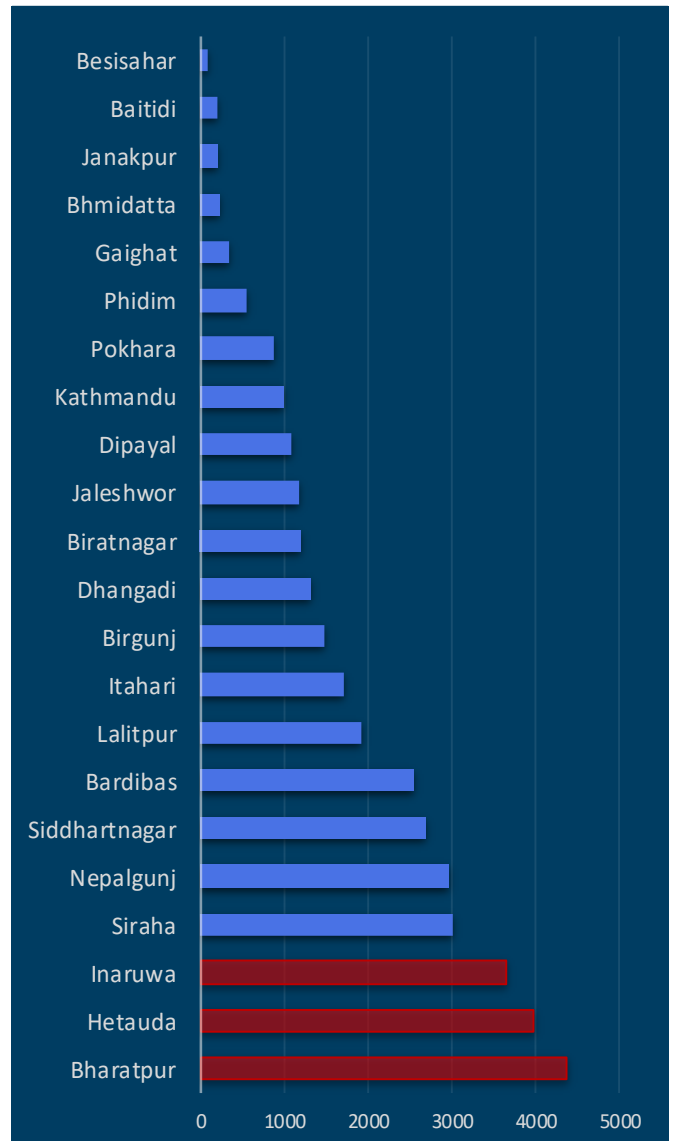
OVERSTOCKED

CURRENT STOCK OPTIMAL STOCK CAN BE MOVED

NO LOCATION CURRENTLY OVERSTOCKED

UNDERSTOCKED

Bharatpur	NONE	4,375
Hetauda	NONE	3,971
Inaruwa	NONE	3,649





ROPES

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 12%

COST: 17%

QUANTITIES

The current pre-positioned stock of ropes across the country allows Nepal responders to cover **65% of disasters** across the country without international assistance.

- to cover 75% of disasters: increase current overall quantity (5,438 units) by a ratio of 2.16 to reach 11,728 units
- to cover 85% of disasters: increase current overall quantity (5,438 units) by a ratio of 6.37 to reach 34,641 units

LOCATIONS

Besides not being stored in enough quantities across the country, the overall geographical balance of where ropes are currently stored can be improved.

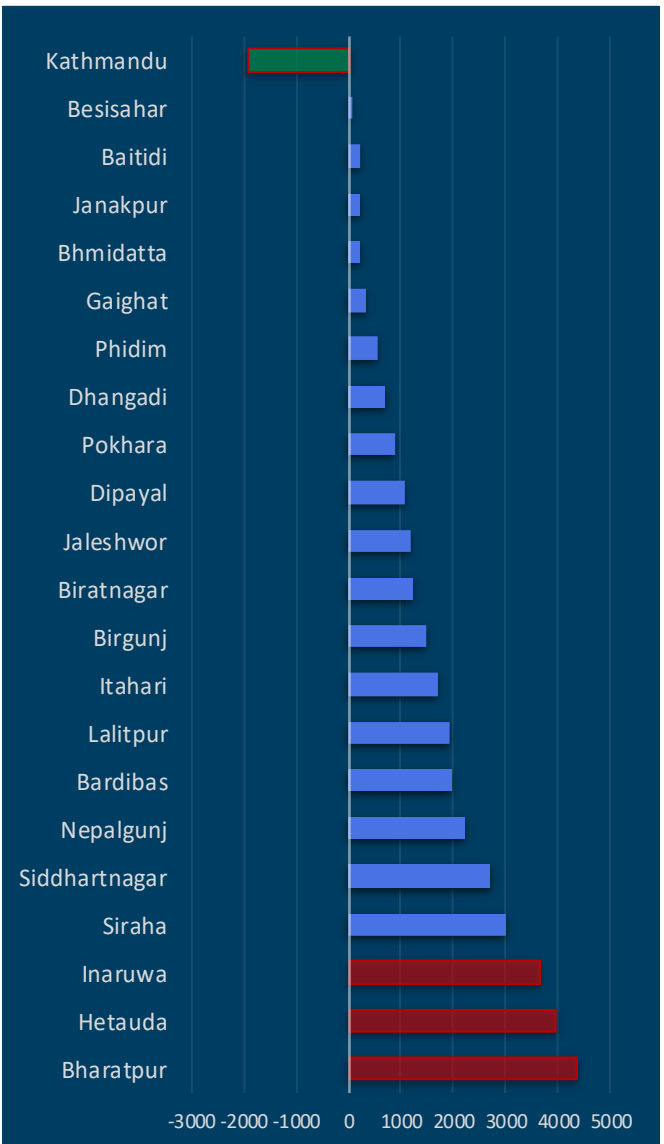
On the basis of the existing stock of ropes (5,438), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	3,460	1,552	1,908

UNDERSTOCKED

Bharatpur	NONE	4,375	
Hetauda	NONE	3,971	
Inaruwa	NONE	3,649	





WINTERISATION KITS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 21%

COST: 28%

QUANTITIES

The current pre-positioned stock of winterisation kits across the country allows Nepal responders to cover **50% of disasters** across the country without international assistance.

- to cover 75% of disasters: increase current overall quantity (1,770 units) by a ratio of 6.63 to reach 11,728 units
- to cover 85% of disasters: increase current overall quantity (1,770 units) by a ratio of 19.57 to reach 34,641 units

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	1,770	1,552	218

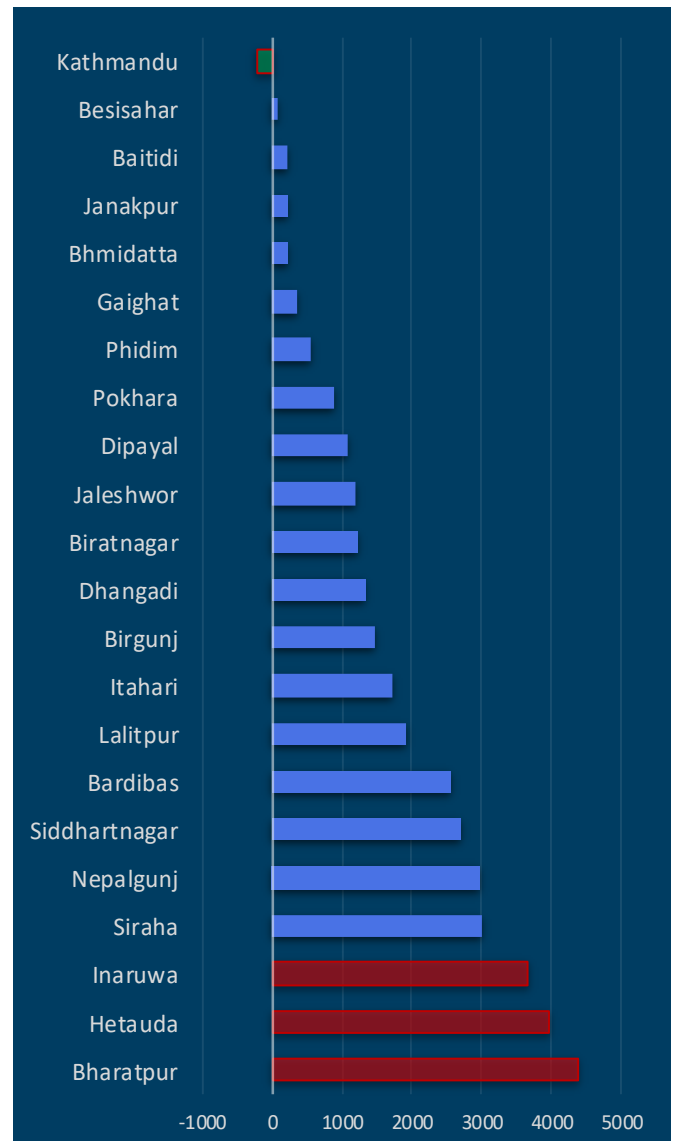
UNDERSTOCKED

Bharatpur	NONE	4,375
Hetauda	NONE	3,971
Inaruwa	NONE	3,649

LOCATIONS

Besides not being stored in enough quantities across the country, the overall geographical balance of where winterisation kits are currently stored can be improved.

On the basis of the existing stock of winterisation kits (1,770), 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.



WASH CLUSTER

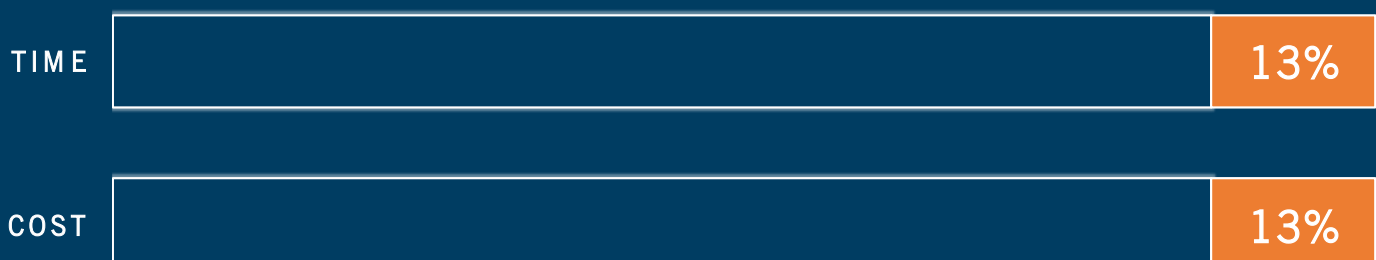


OVERVIEW

4 ITEMS

- BUCKETS
- HYGIENE & DIGNITY KITS
- WATER CONTAINERS
- WATER PURIFICATION TABLETS

AVERAGE WASH SAVINGS





BUCKETS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 12%

COST: 16%

QUANTITIES

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

LOCATIONS

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

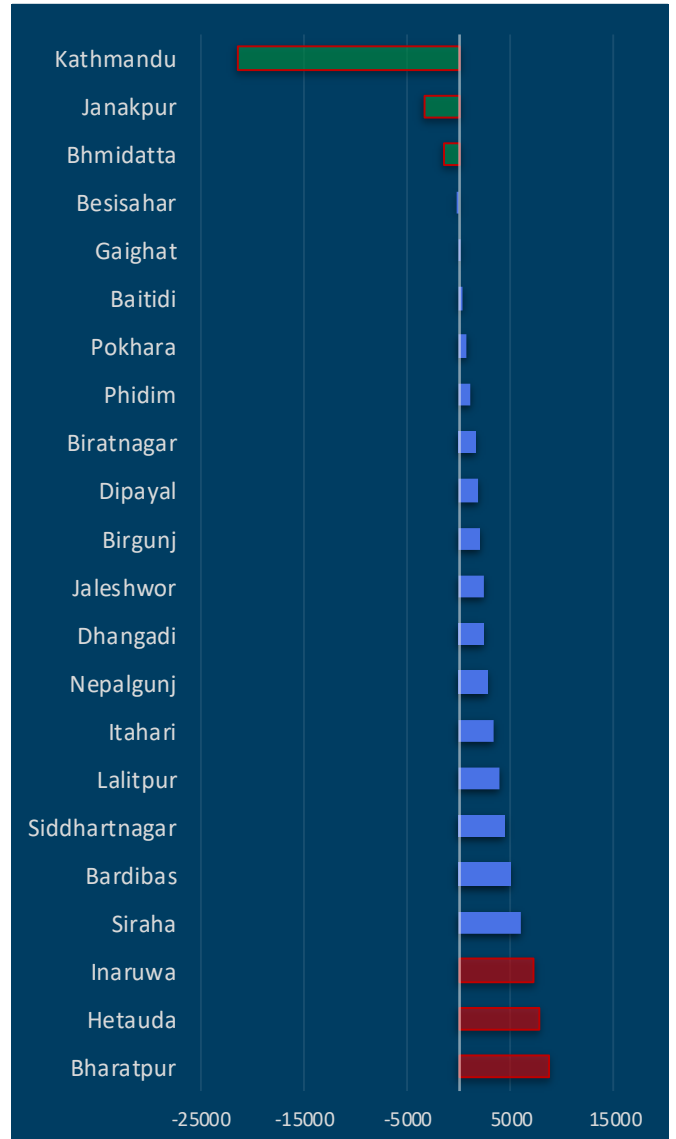
On the basis of the existing stock of buckets (38,527), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

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	





HYGIENE & DIGNITY KITS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 17%

COST: 25%

QUANTITIES

The current pre-positioned stock of hygiene & dignity kits across the country allows Nepal responders to cover **93% of disasters** across the country without international assistance.

- to cover 75% of disasters: the current overall quantity (57,482 units) is sufficient
- to cover 85% of disasters: the current overall quantity (57,482 units) is sufficient

LOCATIONS

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

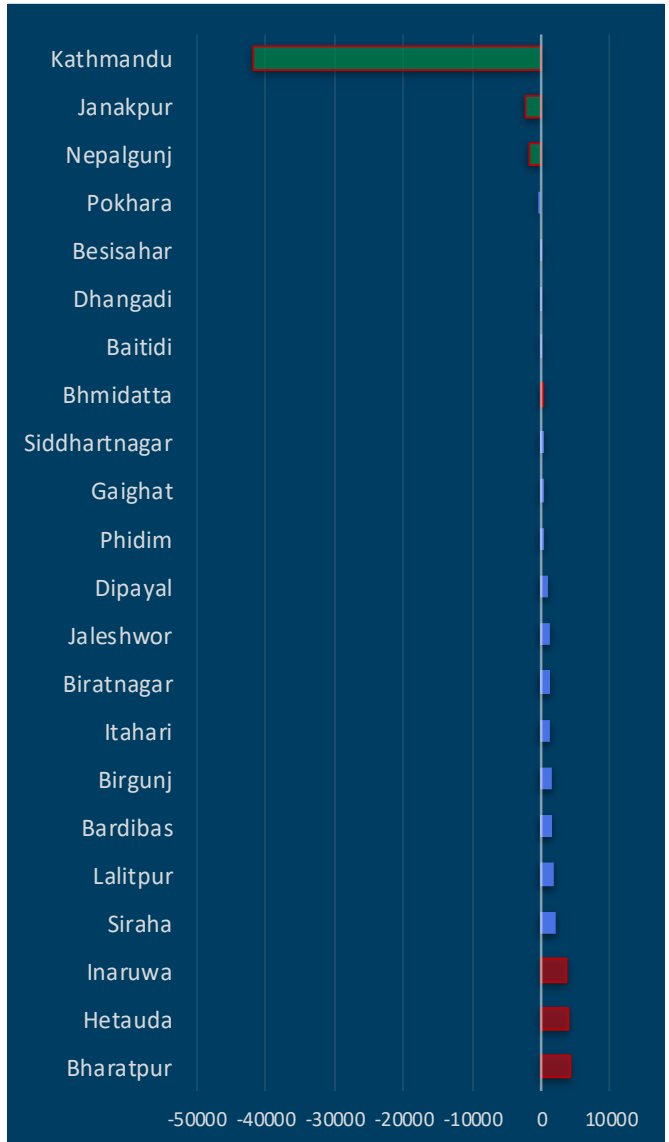
On the basis of the existing stock of hygiene & dignity kits (57,482), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	43,431	1,552	41,879
Janakpur	2,490	219	2,271
Nepalgunj	4,522	2,975	1,547

UNDERSTOCKED

Bharatpur	NONE	4,375	
Hetauda	100	3,971	
Inaruwa	NONE	3,649	





WATER CONTAINERS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 13%

COST: 18%

QUANTITIES

The current pre-positioned stock of water containers across the country allows Nepal responders to cover **74% of disasters** across the country without international assistance.

- to cover 75% of disasters: increase current overall quantity (22,900 units) by a ratio of 1.02 to reach 23,456 units
- to cover 85% of disasters: increase current overall quantity (22,900 units) by a ratio of 3.03 to reach 69,282 units

LOCATIONS

Besides not being stored in enough quantities across the country, the overall geographical balance of where water containers are currently stored can be improved.

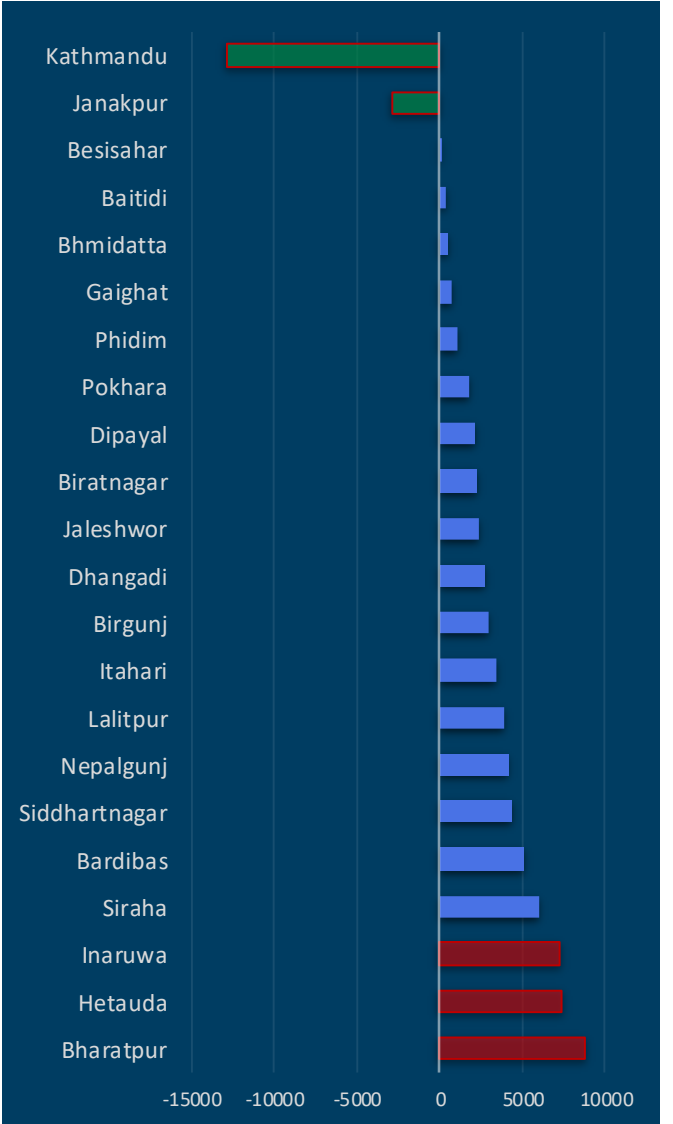
On the basis of the existing stock of water containers (22,900), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	16,026	3,104	12,922
Janakpur	3,260	437	2,823

UNDERSTOCKED

Bharatpur	NONE	8,751
Hetauda	589	7,942
Inaruwa	NONE	7,298





WATER PURIFICATION TABLETS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 10%

COST: 16%

QUANTITIES

The current pre-positioned stock of water purification tablets across the country allows Nepal responders to cover **86% of disasters** across the country without international assistance.

- to cover 75% of disasters: the current overall quantity (182,699 units) is sufficient
- to cover 85% of disasters: the current overall quantity (182,699 units) is sufficient

LOCATIONS

Besides being stored in enough quantities across the country, the overall geographical balance of where water purification tablets are currently stored is relatively good.

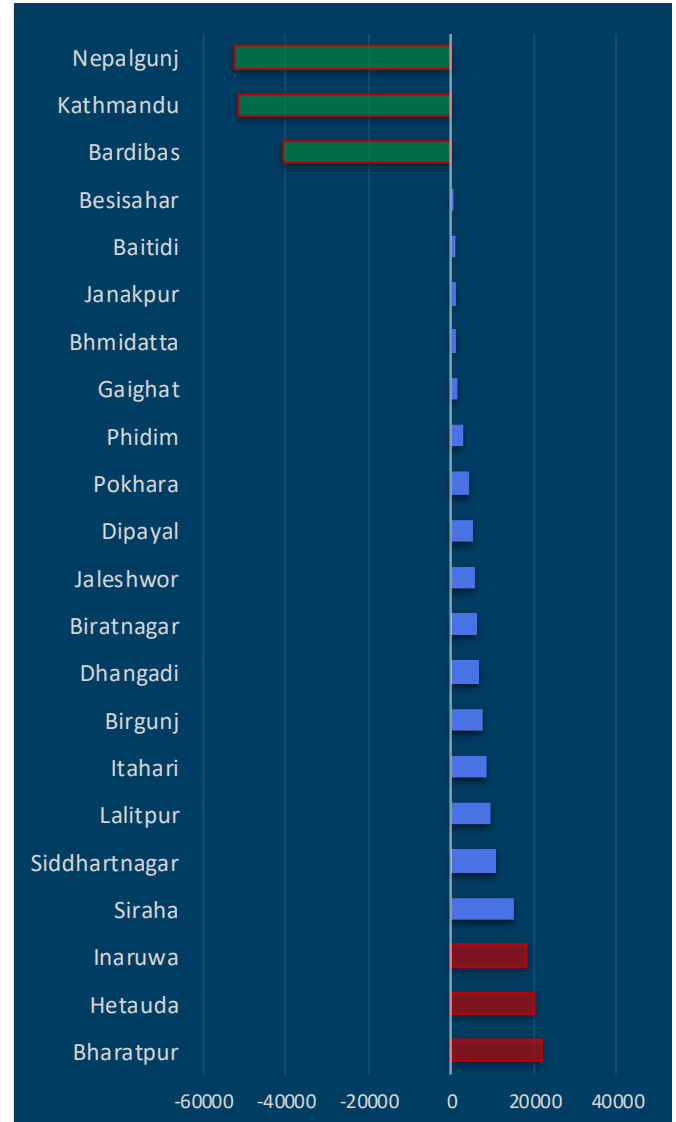
On the basis of the existing stock of water purification tablets (182,699), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	16,026	3,104	12,922
Janakpur	3,260	437	2,823
Bardibas	53,450	12,778	40,672

UNDERSTOCKED

Bharatpur	NONE	21,877
Hetauda	NONE	19,856
Inaruwa	NONE	18,245



HEALTH CLUSTER

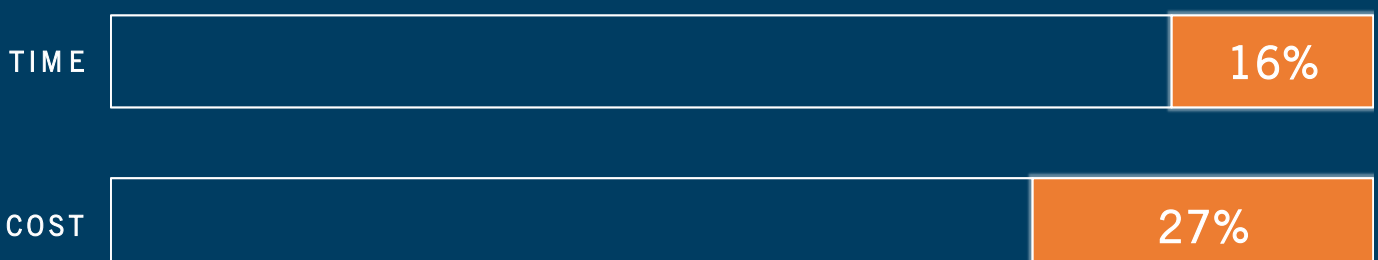


OVERVIEW

4 ITEMS

- DIARRHEAL DISEASE KITS
- MEDICAL KITS
- MOSQUITO NETS
- SAFE DELIVERY KITS

AVERAGE HEALTH SAVINGS

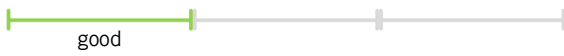




DIARRHEAL DISEASE KITS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 21%

COST: 50%

QUANTITIES

The current pre-positioned stock of diarrheal disease kits across the country allows Nepal responders to cover **98% of disasters** across the country without international assistance.

- to cover 75% of disasters: the current overall quantity (11,670 units) is sufficient
- to cover 85% of disasters: the current overall quantity (11,670 units) is sufficient

LOCATIONS

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

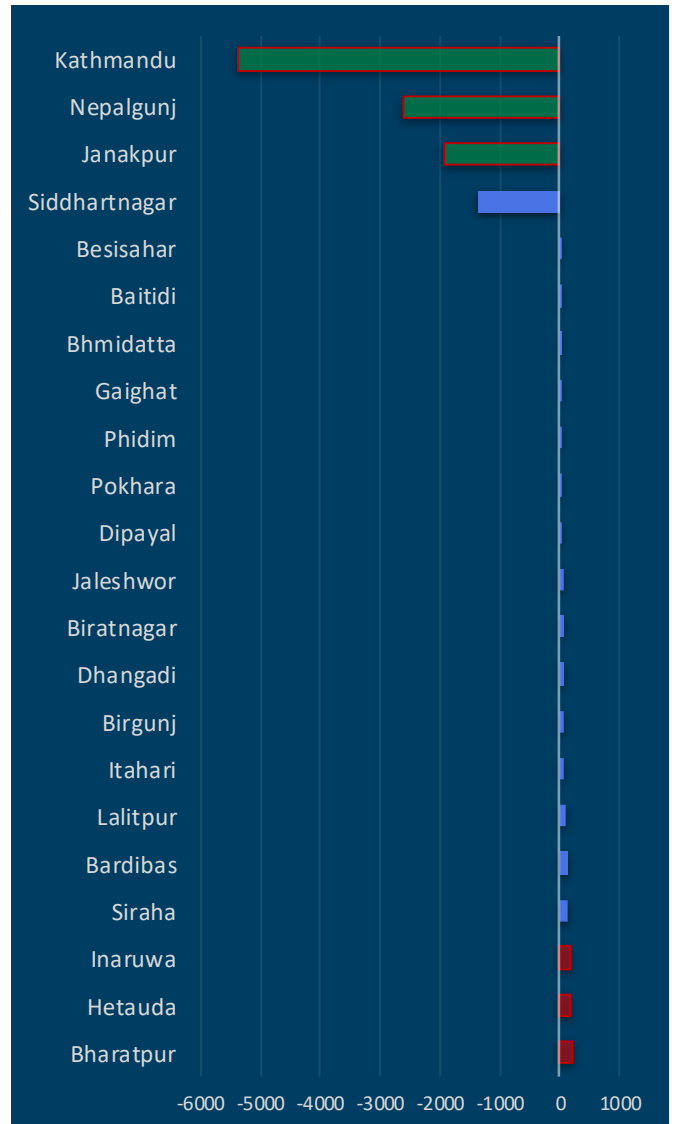
On the basis of the existing stock of diarrheal disease kits (11,670), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	5,470	78	5,392
Nepalgunj	2,748	149	2,599
Janakpur	1,952	11	1,941

UNDERSTOCKED

Bharatpur	NONE	219	
Hetauda	NONE	199	
Inaruwa	NONE	182	

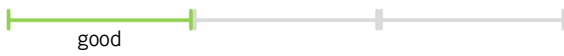




MEDICAL KITS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 21%

COST: 30%

QUANTITIES

The current pre-positioned stock of medical kits across the country allows Nepal responders to cover **85% of disasters** across the country without international assistance.

- to cover 75% of disasters: the current overall quantity (51 units) is sufficient
- to cover 85% of disasters: the current overall quantity (51 units) is sufficient

LOCATIONS

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

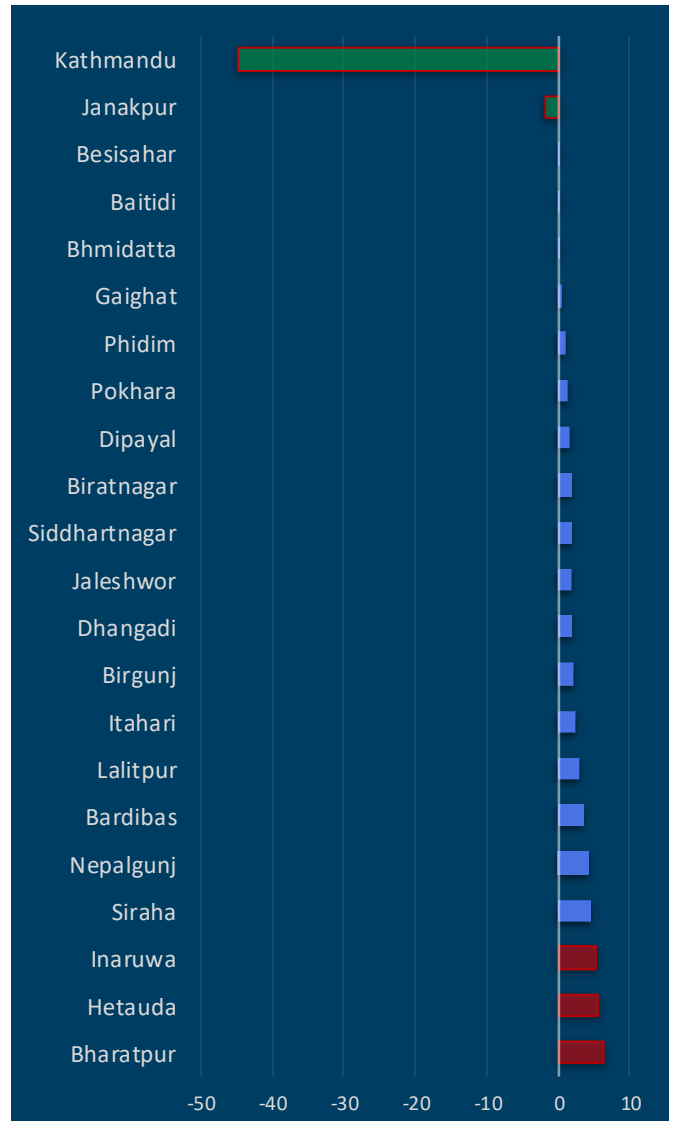
On the basis of the existing stock of medical kits (51), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	47	2	45
Janakpur	2	0	2

UNDERSTOCKED

Bharatpur	NONE	6	
Hetauda	NONE	6	
Inaruwa	NONE	5	





MOSQUITO NETS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 9%

COST: 12%

QUANTITIES

The current pre-positioned stock of mosquito nets across the country allows Nepal responders to cover **68% of disasters** across the country without international assistance.

- to cover 75% of disasters: the current overall quantity (25,779 units) is sufficient
- to cover 85% of disasters: increase current overall quantity (25,779 units) by a ratio of 2.69 to reach 69,282 units

LOCATIONS

Although not stored in enough quantities across the country, the overall geographical balance of where mosquito nets are currently stored is relatively good.

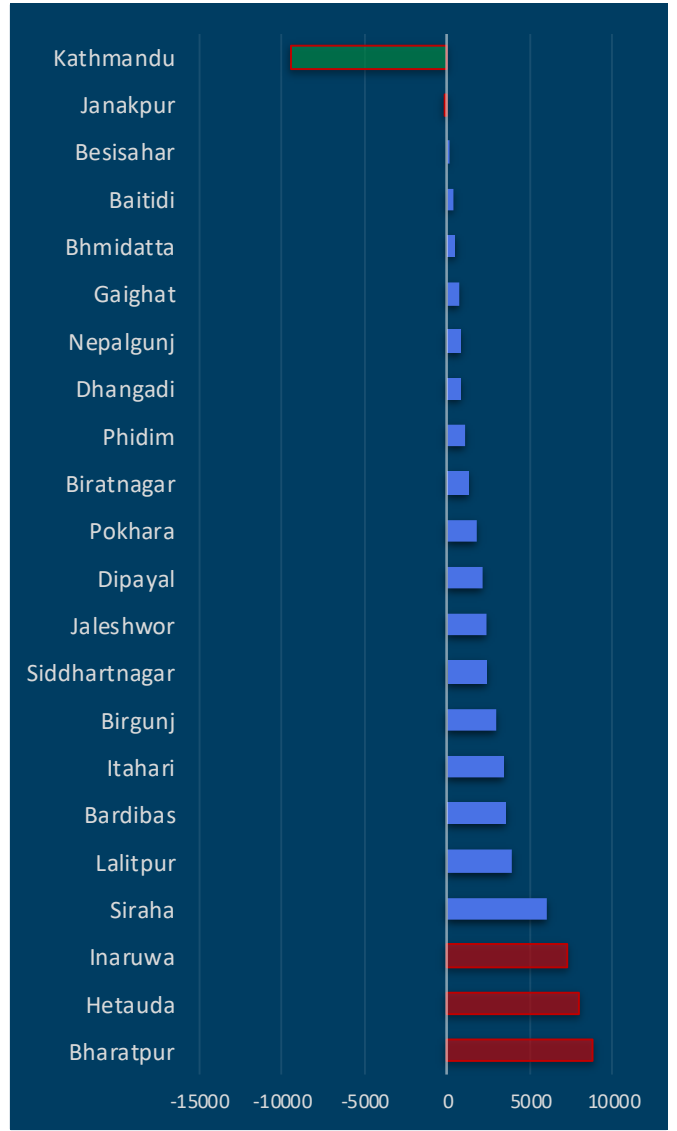
On the basis of the existing stock of mosquito nets (25,779), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	12,607	3,104	9,503
Janakpur	617	437	180

UNDERSTOCKED

Bharatpur	NONE	8,751
Hetauda	NONE	7,942
Inaruwa	NONE	7,298





SAFE DELIVERY KITS

Assessment rating

Quantities



Locations (based on 85% goal)



QUANTITIES

The current pre-positioned stock of safe delivery kits across the country allows Nepal responders to cover **78% of disasters** across the country without international assistance.

- to cover 75% of disasters: the current overall quantity (714 units) is sufficient
- to cover 85% of disasters: increase current overall quantity (714 units) by a ratio of 2.43 to reach 1,733 units

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	414	78	336
Janakpur	100	11	89
Dhangadi	100	67	33

UNDERSTOCKED

Bharatpur	NONE	219
Hetauda	NONE	199
Inaruwa	NONE	182

Potential time and cost savings

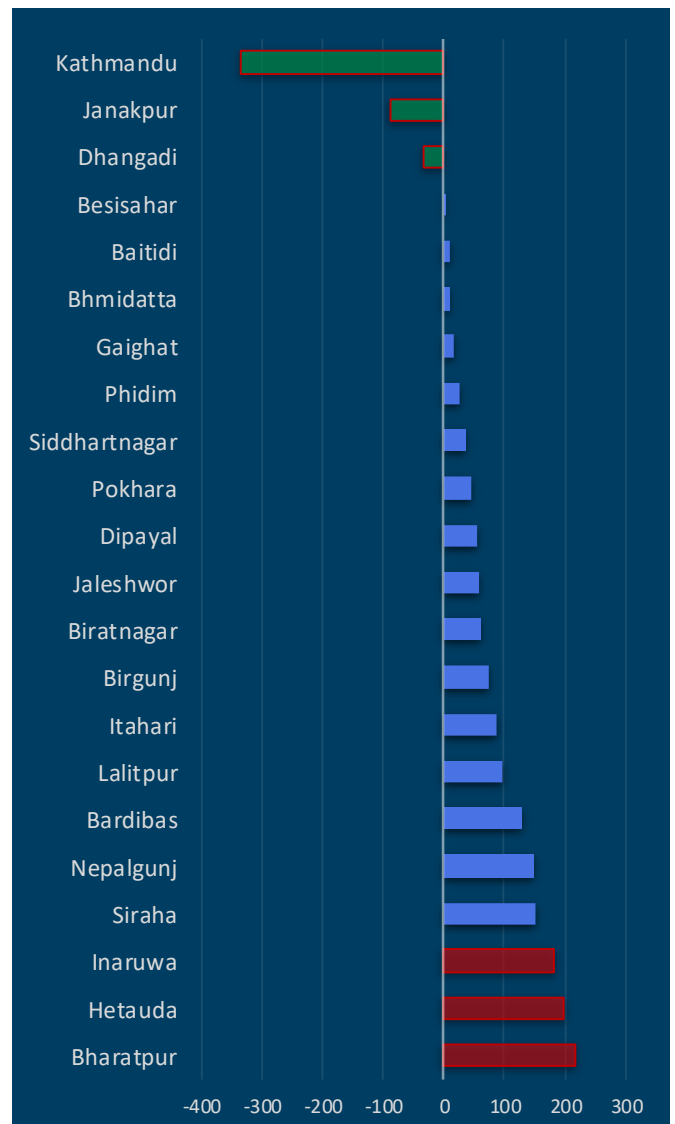
TIME: 11%

COST: 16%

LOCATIONS

Besides not being stored in enough quantities across the country, the overall geographical balance of where safe delivery kits are currently stored can be improved.

On the basis of the existing stock of safe delivery kits (714), 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.



EDUCATION CLUSTER

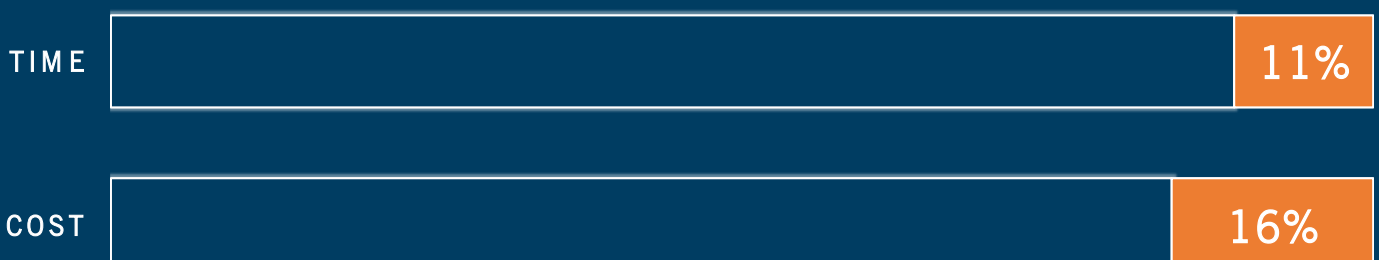


OVERVIEW

2 ITEMS

- INDIVIDUAL EDUCATIONAL MATERIAL
- SCHOOL/PLAY KITS

AVERAGE HEALTH SAVINGS





INDIVIDUAL EDUCATION MATERIAL

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 11%

COST: 16%

QUANTITIES

The current pre-positioned stock of individual education material across the country allows Nepal responders to cover **61% of disasters** across the country without international assistance.

- to cover 75% of disasters: increase current overall quantity (17,393 units) by a ratio of 3.37 to reach 58,638 units
- to cover 85% of disasters: increase current overall quantity (17,393 units) by a ratio of 9.96 to reach 173,205 units

LOCATIONS

Besides not being stored in enough quantities across the country, the overall geographical balance of where individual education material are currently stored can be improved.

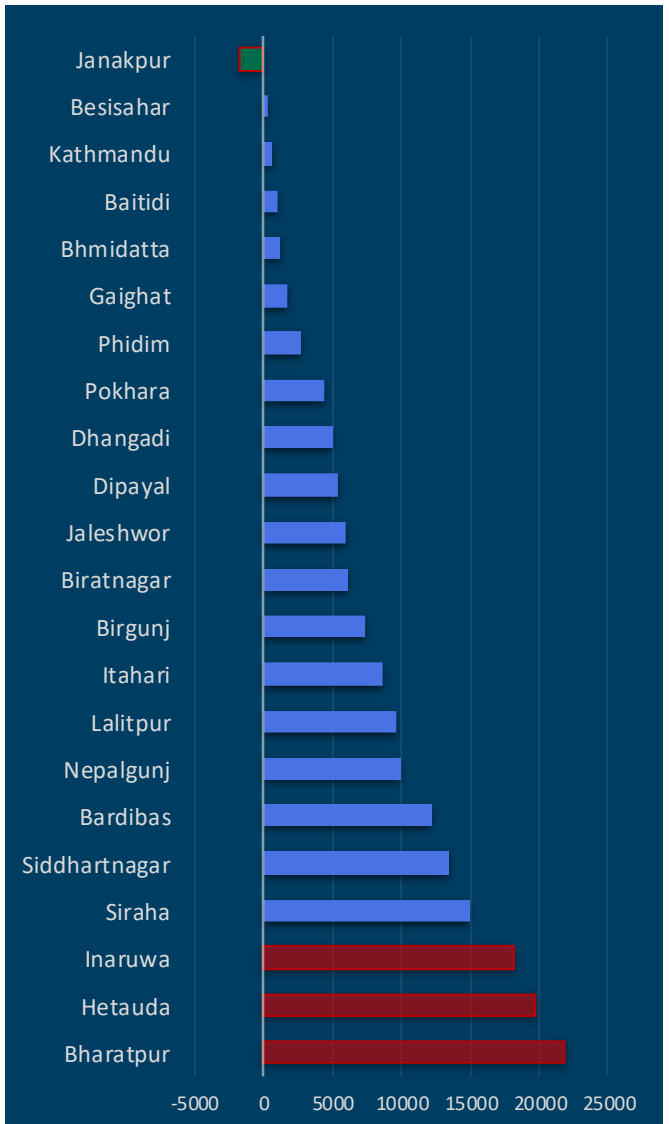
On the basis of the existing stock of individual education material (17,393), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Janakpur	2,777	1,093	1,684

UNDERSTOCKED

Bharatpur	NONE	21,877
Hetauda	95	19,856
Inaruwa	NONE	18,245





SCHOOL/PLAY KITS

Assessment rating

Quantities



Locations (based on 85% goal)



Potential time and cost savings

TIME: 11%

COST: 15%

QUANTITIES

The current pre-positioned stock of school/play kits across the country allows Nepal responders to cover **76% of disasters** across the country without international assistance.

- to cover 75% of disasters: the current overall quantity (1,573 units) is sufficient
- to cover 85% of disasters: increase current overall quantity (1,573 units) by a ratio of 2,75 to reach 4,331 units

LOCATIONS

Besides not being stored in enough quantities across the country, the overall geographical balance of where school/play kits are currently stored can be improved.

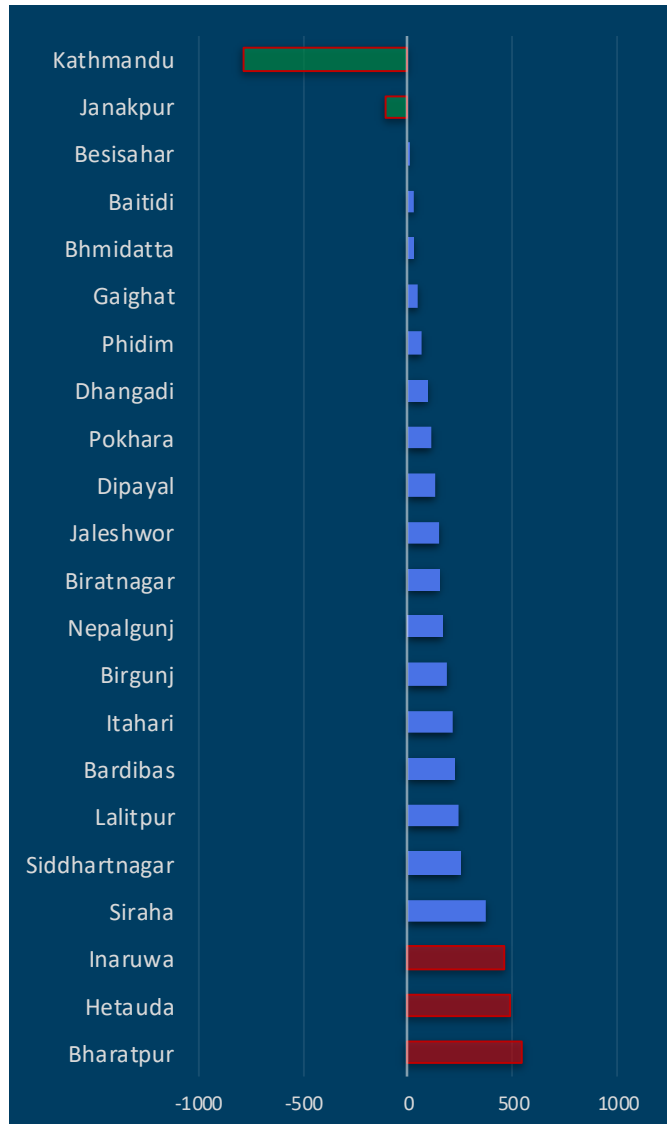
On the basis of the existing stock of school/play kits (1,573), the graph shows which locations are overstocked, which ones are understocked, and how stocks can be re-balanced across warehouses to maximise cost and time efficiency.

OVERSTOCKED

	CURRENT STOCK	OPTIMAL STOCK	CAN BE MOVED
Kathmandu	979	194	785
Janakpur	133	27	106

UNDERSTOCKED

Bharatpur	NONE	547
Hetauda	5	496
Inaruwa	NONE	456



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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