Piloting of **Household Level Risk Assessment Tool** in **Wards 12 & 13** of **Bheemdatt Municipality**, Kanchanpur, Nepal

For evidence-based decision support in implementing effective risk financing.

Funded by **Climate Innovation Challenge**

Foreign, Commonwealth & Development Office

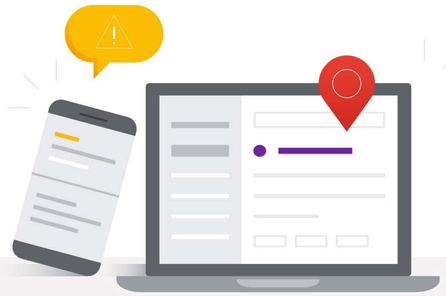
THE WORLD BANK

adpc Asian Disaster Preparedness Center

Implementing Partners naxa DCA

Background

Nepal is at high risk of both natural and man-made hazards. Floods and inundations are often observed in the low land areas of Nepal. The number of households affected by floods increases every year. The cost of hazard impacts is particularly high for low-income households which often tend to rely on ad-hoc relief distribution and assistance. These solutions only seem to be temporary. Hence, investing in delivering disaster response schemes to finance the cost incurred due to disasters seems evidently important. For low-income households and individuals, effective risk financing solutions can be valuable in protecting their livelihoods against disaster risks.



Solution

- A highly customizable and proven digital tool for household vulnerability assessments
- Identification of vulnerable households using a standard set of criteria
- Vulnerability classification of households into three color-coded markers
- Spatial visualization of households with associated attributes
- Support in evidence-based planning to design appropriate risk financing strategies

Start

1. Digitization of Households in GIS Environment and Unique ID Generation (Create Polygon (unique ID) over the satellite Image)
2. Household Survey Questionnaire Design (Under Exposure, Sensitivity and Adaptive Capacity Components of Vulnerability)
3. System Development with the capacity of overlaying hazard layers (For eg: Flood Hazard Model with return period 50 yrs, 100 yrs, 500 yrs, Landslide Susceptibility)
4. Field Survey in Digital Environment aided by Unique ID to each HH
5. Cleaning and Standardization of the survey data
6. **Assigning of Vulnerability Score (in terms of Exposure, Sensitivity and Adaptive Capacity)**

EXPOSURE

Natural Hazard and Climate Variability

How far is the house from nearby river?		...	Time required to reach the nearest open space	
less than 50 metre	5	...	More than couple of hours, Don't Know	5
50-100 metre	4		more than an hour	4
100-250 metre	3		30 minutes to 1 hour	3
250-500 metre	2		15-30 minutes	2
Greater than 500 metres	1		Walking Distance	1

SENSITIVITY

Household with Senior Citizen of 60 years?		...	With at least one family member having chronic illness	
More than 3	5	...	More than 3	5
3	4		3	4
2	3		2	3
1	2		1	2
No	1		No	1

ADAPTIVE CAPACITY

Socio-Demographic

Dependency Ratio		...	Land Ownership	
less than 0.2	5	...	More than 5 Ropani	5
0.2 - 0.4	4		3 to 5 Ropani	4
0.4 - 0.6	3		1 to 3 Ropani	3
0.6 - 0.8	2		Less than 1 Ropani	2
> 0.8	1		Land Tenants /Mohi / Landless	1

HOUSEHOLD LEVEL VULNERABILITY INDEX

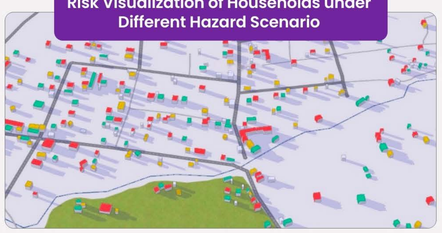
Theme	Main Components	Score (1 to 5)	Value (1 to 5)
Exposure	Natural Hazard and Climate Variability	..	..
Sensitivity	Special Consideration Group	..	..
	Damage and Loss	..	..
	Health	..	..
Adaptive Capacity	Socio-Demographic Profile	..	..
	Livelihood Strategy	..	..
	Knowledge and Capacity	..	..
	Finance	..	..
	Engagement/Access to Services and Infrastructure	..	..

Vulnerability = f (Exposure, Sensitivity, Adaptive Capacity)

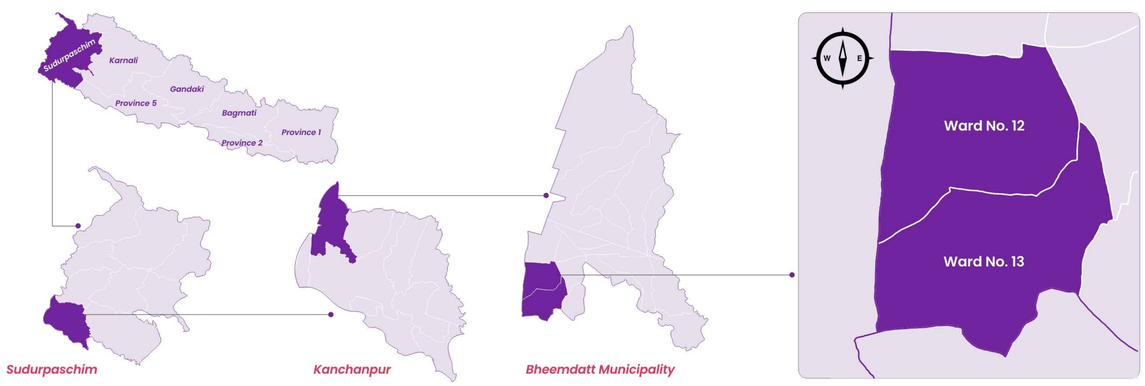
Normalization and Categorization of Households

- Red- highly vulnerable
- Yellow - moderately vulnerable
- Green - least vulnerable

Risk Visualization of Households under Different Hazard Scenario



Implementation Area



Implementation Timeline

Month 1	JANUARY	Preparation and Partnerships Development	Completed
Month 2	FEBRUARY	Solution Enhancement, Survey Design and Deployment	Ongoing
Month 3	MARCH	Technical Capacity Development and Cluster Assignment	
Month 4	APRIL	Data Collection, Verification, and Upload	
Month 5	MAY	HH Vulnerability Assessment, Visualization, and Report Generation	
Month 6	JUNE	Result Sharing and Validation	
Month 7	JULY	Risk Financing Programs	