

Strengthening Local Capacities for Disaster Risk Management

Photo By: IEN

Executive Summary

We leverage a nationwide local government survey (LGS) and a dataset of incidence of environmental hazards (BIPAD) from 2011-2023 to understand if politicians in municipalities that have been more impacted by natural disasters are more likely to believe that climate change is serious and take climate action. We focus on the top four land and water hazards: flood, heavy rainfall, landslides, and forest fires.

- National disaster data shows widespread incidence of disasters in Nepal.
- Officials in municipalities with high disaster incidence are not more likely to indicate that climate change is their top policy priority.
- Politicians in high disaster incidence regions are more likely to believe that their constituents consider climate change to be a serious issue. However, when asked if their constituents would prioritize spending focused on climate adaptation over expenditure to support economic development, they are not more likely to agree relative to politicians in low incidence regions.
- After almost a year in office, politicians in municipalities with high disaster incidence are no more likely to take climate-related actions or actions specifically related to disaster-management.

Context and Sample

Across eight South Asian countries, 750 million people were affected by climate-related disasters in the last two decades. Nepal's geography makes it among the most disaster-prone countries in the region, and in the world. Local governments in Nepal play a key role in responding to natural disasters, and their awareness of climate change can impact how they prepare for disasters and build resilience through adaptation plans. In March 2023, our research team surveyed 9,363 local and ward-level officials across 95% of Nepal's local governments in the fifth round of the Yale-RENT team LGS survey in order to understand how local elected officials perceive their own climate responsibility.

We combine this survey data with the Building Information Platform Against Disaster (BIPAD) dataset, which is managed by the National Disaster Risk Reduction and Management Authority (NDRRMA) to measure disaster incidence. BIPAD contains records of incidence of disasters across the country, from 2011 to 2023, and estimates economic and human losses from these disasters. For this brief, we focus on the two most common types of natural disasters, water-related incidents (including reports of floods and heavy rainfall), and land-related incidents (including forest fires and landslides). We define a municipality as "high disaster incidence" when the count of disasters in that municipality is higher than the nationwide median value. Below, in Figure 1, we show a map of disaster incidence across municipalities for the two hazard types. In Figure 2, we show the distribution of economic losses and deaths attributed to these disasters across Nepal.

Figure 1: Heatmap of BIPAD Disaster Incidence

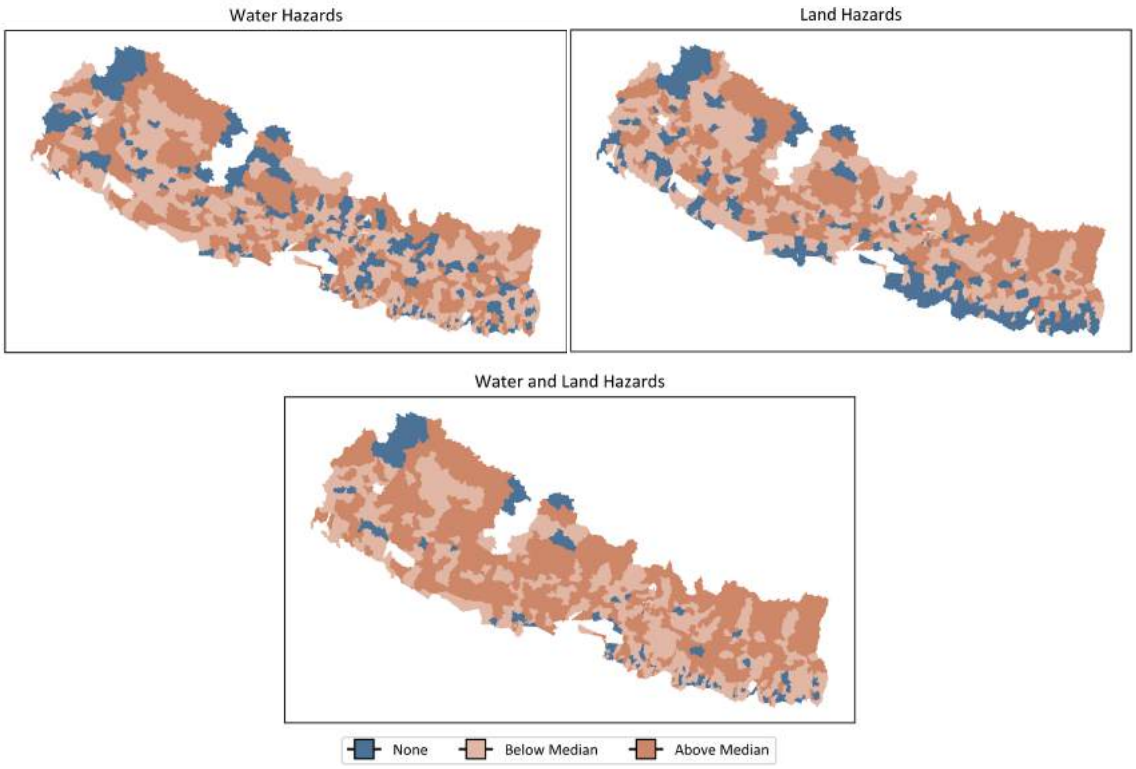
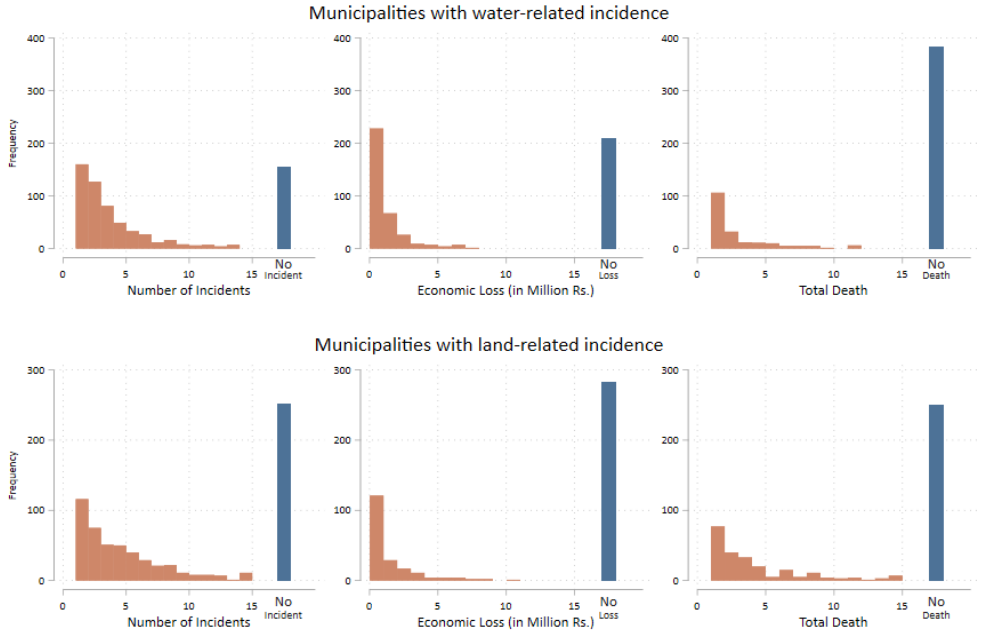


Figure 2: Distribution of economic loss and death related to water and land incidence

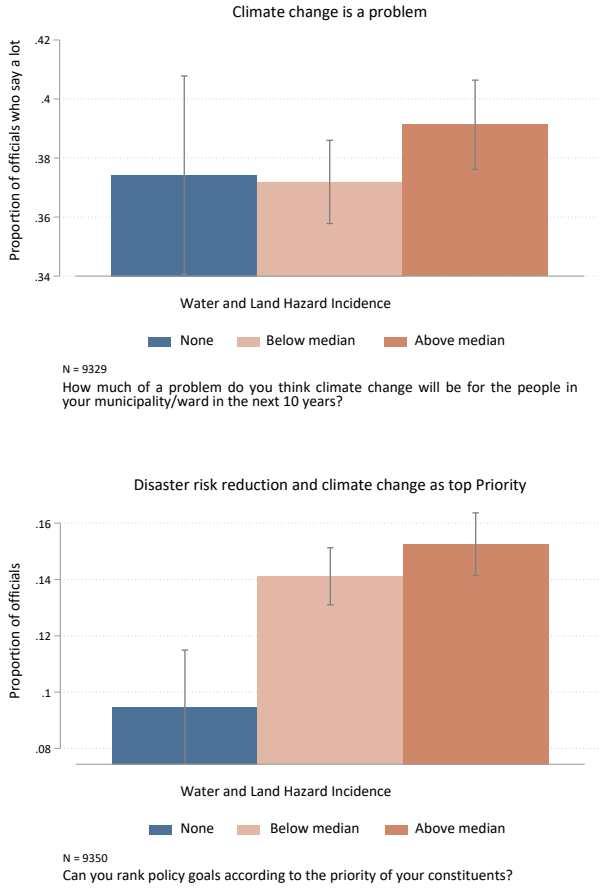


Economic Loss and Death figures are drawn for municipalities with at least one reported incident
Values greater than 90th percentile is considered outlier

Finding 1: Officials in municipalities with high disaster incidence are not more likely to acknowledge that climate change would cause a lot of problems to their municipality. They are also not more likely to say climate change is their top policy priority.

There is a consensus that climate change is overall a serious problem for Nepal (63% of politicians agree to this). However, when asked about their own municipality, only 39% consider it problematic. Figure 3 shows the proportion of officials who acknowledge that climate change would cause a lot of problems to their constituency in the next 10 years

Figure 3: Proportion of officials who consider climate change a serious issue for their municipality and a first policy priority



We find no difference in this proportion when looking at municipalities based on low and high hazard incidence. Further, in ranking different policies, politicians from high incidence regions are no more likely to state climate as their top policy priority over education, infrastructure, health and food security.

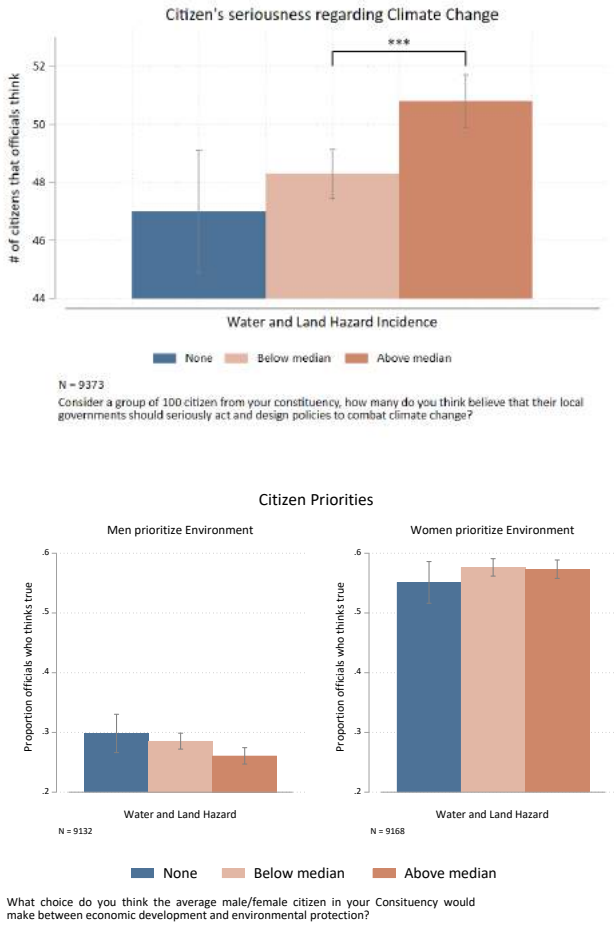
Finding 2: Politicians in high disaster incidence regions are more likely to believe their constituents consider climate change a serious issue. However, politicians in high and low disaster incidence regions are equally likely to agree when asked if constituents would prioritize environment over development.

Relative to their counterparts in low disaster regions, politicians in high disaster incidence regions are more likely to believe that their constituents consider climate change to be a serious issue. In Figure 4, we show that politicians in high incidence areas think 50.8% of their citizens are serious regarding action and designing policies to combat climate change.

Compared to this, politicians in low incidence areas think a significantly low percentage of their citizens (48.3%) are serious about the same issue.

In the adjacent figure, we show the proportion of politicians who think that men and women in their constituency prioritize spending on climate adaptation over expenditure to support economic development across incidence areas. Politicians on average are more likely to think that compared to men, women in their constituency prioritize environmental spending over development. However, we find no difference in these proportions when comparing across areas with high disaster incidence and low disaster incidence.

Figure 4: Officials' Perceptions of citizens' climate beliefs

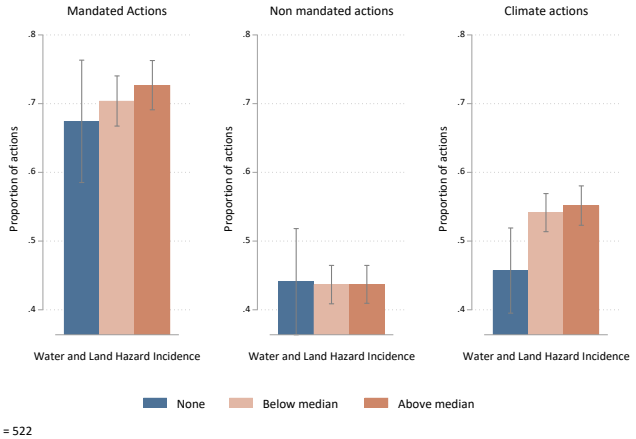


Finding 3: Politicians in municipalities with high disaster incidence are no more likely to take climate-related actions or actions specifically related to disaster-management.

Figure 5 shows the proportion of mandated, non-mandated, and climate actions that mayors in low- and high-disaster incidence municipalities report taking in the past year. We find no significant differences in the proportion of actions taken by mayors across low and high disaster incidence municipalities. However, we must take this finding with the caveat that most of these officials have only been in office for a year.

This lack of reported actions by mayors is consistent, even when we examine actions that are specific to disaster preparedness and adaptation for water hazards. In areas with above-median flooding and heavy rain incidents, only 31.1% of municipalities have instituted an early warning system while most have constructed river embankments, and these areas are not significantly more likely to take these actions than areas with low flood incidence. In areas with above-median landslides and forest fire incidents, the majority of municipalities have built land embankments or planted trees. These areas are not significantly more likely to take these actions than areas with low landslide or fire incidence.

Figure 5: Climate actions and incidence of water and land hazard



N = 522

Policy Implications

Politicians in disaster-prone areas have clear incentives to adapt disaster risk reduction strategies. And as climate change increases Nepal's vulnerability to natural disasters, local action will be increasingly important. While the impacts of climate change may seem diffuse and distant, the effects of natural disasters are immediate and local. As climate change increases Nepal's vulnerability to specific natural disasters, working with local politicians to ensure they can respond effectively is important. There are existing strategies and policy tools to reduce vulnerability to disasters, and these tools are currently underutilized by local officials.

Our findings suggest that the climate adaptation strategies by local governments are limited even in places with high disaster occurrence. We recommend building a concrete link between climate risks and local adaptation plans by helping governments spend the climate budget on more effective policies. In addition, we need to understand whether politicians are correctly understanding citizens' perceptions of the value of addressing climate change, so we can suggest interventions to make adaptation policies more politically viable and salient at the local level.

This project was funded by UK's Foreign, Commonwealth and Development Office and the Asia Foundation. But the views expressed in this report do not necessarily constitute an endorsement by the UK government.

Authors

Michael Callen, Anubhav Dhakal, Gauri Shankar Gautam, Rohini Pande, Soledad Artiz Prillaman, Juni Singh