



CITIZEN SCIENTISTS' DATA INTO ACTION: INFOGRAPHICS



Bhimeshwar Municipality
Office of the Municipal Executive



S4W-Nepal



**Asian Disaster
Preparedness Center**

CITIZEN SCIENTISTS' DATA INTO ACTION: INFOGRAPHICS

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EXECUTIVE SUMMARY

The purpose of this document is to provide an in-depth overview of the landslide risks, community engagement, and disaster preparedness efforts in Bhimeshwar Municipality, Nepal. Through visualizations such as maps and infographics, this document highlights the vulnerability of the region to landslides, driven by factors such as steep terrain, fragile geology, and intense monsoonal rainfall. The role of local communities, particularly through the citizen scientists' program, is emphasized as they contribute to gathering critical data on rainfall, landslides, and other environmental factors, which strengthen the municipality's early warning systems (EWS) and disaster risk management efforts. Infographics will showcase essential demographic information, land use patterns, and rainfall trends to facilitate better understanding of the region's hazards.

Furthermore, this document underscores the impact of the VICTORY project's activities, including ward sensitization sessions, school outreach programs, and the Mapathon initiative, aimed at building local capacity for disaster risk reduction. These initiatives are designed to engage a broad cross-section of the community, empowering citizens to take an active role in monitoring environmental parameters and contributing to the development of a resilient, disaster-prepared community. By visualizing key project milestones and outcomes, the document aims to inform decision-making, raise awareness, and inspire further collaboration between local stakeholders, community members, and organizations involved in disaster preparedness and environmental conservation.

PARTNERSHIPS & COLLABORATIONS: STAKEHOLDERS INVOLVED



**Asian Disaster
Preparedness Center**

ADPC iCARE innovation The Asian Disaster Preparedness Center (ADPC), through its iCARE Innovations Fund, acts as a catalyst for advancing climate resilience and driving innovation across South Asia. Leveraging its extensive expertise in disaster risk reduction, climate adaptation, and resilience building, ADPC provides strategic leadership to the iCARE Innovations Fund. Its pivotal role in the Victory project, through dedicated funding and extensive support, has been instrumental in ensuring the project's success and impact.



Bhimeshwor Municipality
Office of the Municipal Executive

Bhimeshwor, (formerly Charikot), is a municipality in north-eastern Nepal and the headquarters of Dolakha District in Bagmati Province that was established by merging the former Village development committees Charikot, Dolakha Town, Makaibari, Mati, Suspaa, and Lankuri danda. Mr. Ishwor Narayan Manandhar is the current Mayor of the municipality, who plays a pivotal role in overseeing the municipality's administrative and developmental initiatives. Ms. Kamala Basnet is the Deputy Mayor, who actively contributes to policies and programs, particularly focusing on social equity, education, and healthcare.



Institute of Himalayan Risk Reduction (IHRR) is an organization established with an objective to assess and understand the risk to contribute to sustainability. The IHRR team consists of professionals with expertise and experiences in the field of disaster risk management in understanding the risk, conducting academic research, and field-level implementations in Nepal and different parts of the world.



U-Inspire Nepal is a youth and young professionals (Y&YP) platform in Science, Engineering, Technology and Innovation (SETI) to accelerate the implementation of Disaster Risk Reduction (DRR) in-line with the Sendai Framework to support DRR policy and action at local, national and international level. It is a functional organization of Y&YP in SETI for DRR in different countries of Asia and the Pacific region.



Smartphones For Water Nepal (S4W-Nepal) is a non-profit research organization that works on sustainable water resource monitoring and management in Nepal. S4W-Nepal intends to collect hydro-meteorological data, strengthen understanding of water resources via research, and support wise water management decisions.

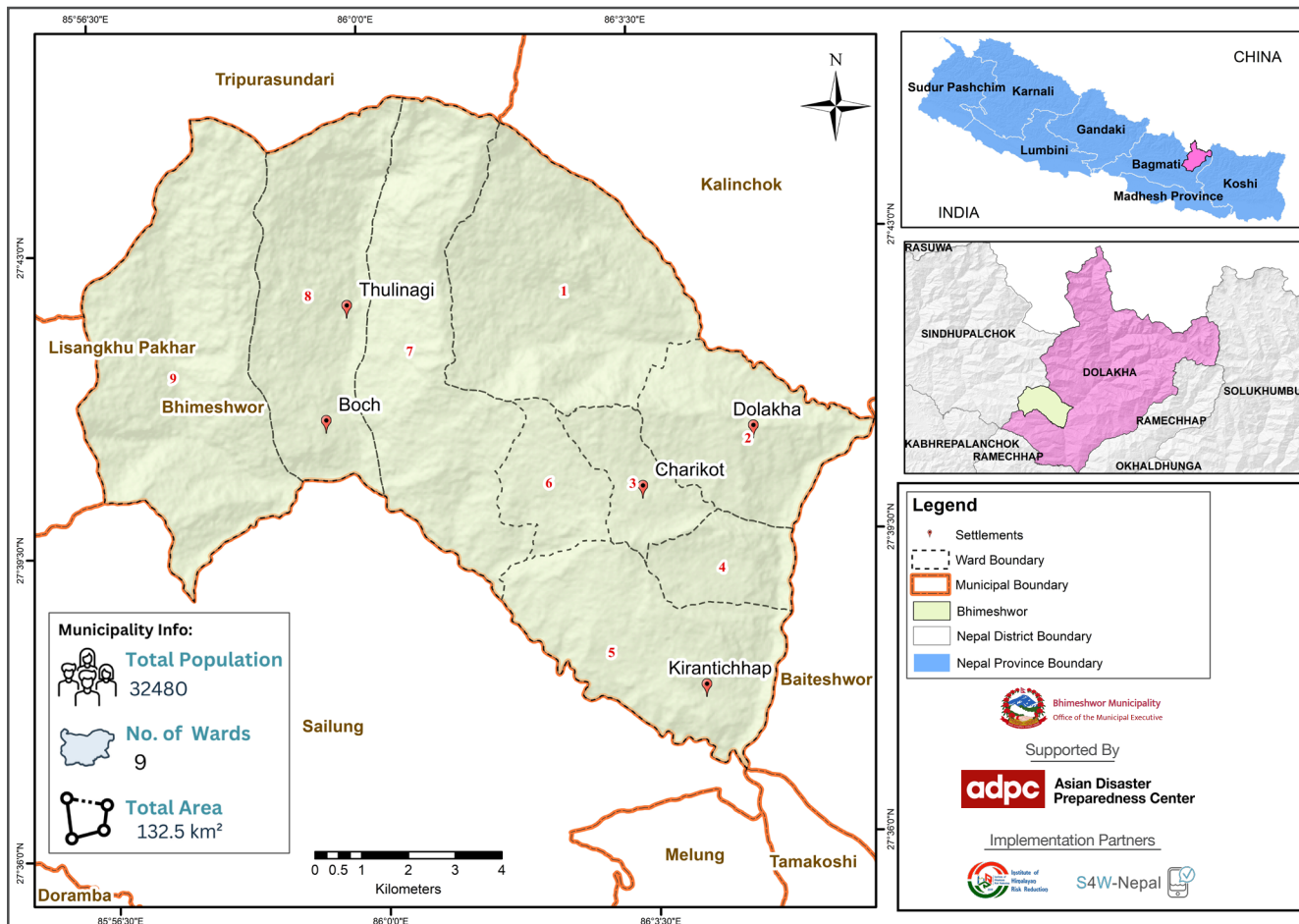


ACKNOWLEDGMENTS

We would like to extend our heartfelt gratitude to all those who contributed to the development of this document and the successful implementation of the VICTORY project in Bhimeshwor Municipality. We sincerely thank the Bhimeshwor Municipality officials, including the Mayor, Deputy Mayor, Ward Chairpersons, and Ward Representatives, for their leadership and commitment to disaster preparedness and resilience. We are deeply grateful to the Citizen Scientists for their dedication to data collection and rainfall monitoring, as well as to the schools, educators, and students for their enthusiastic participation in the outreach programs aimed at fostering a culture of preparedness. We also acknowledge the invaluable contributions of our partners, and other academic and research institutions, for their technical guidance and support.

Our appreciation extends to the digital volunteers and Mapathon participants, whose efforts in geographic data mapping have significantly enhanced local disaster response capabilities. Finally, we express our gratitude to the local communities, women's groups, youth organizations, and the dedicated project team for their unwavering support, collaboration, and commitment, which have been instrumental in achieving the goals of this project.

Lastly, we acknowledge the generous funding and support provided by the Asian Disaster Preparedness Center (ADPC), which has been instrumental in enabling the VICTORY project. This document is a testament to the collective effort and shared vision of all stakeholders involved.

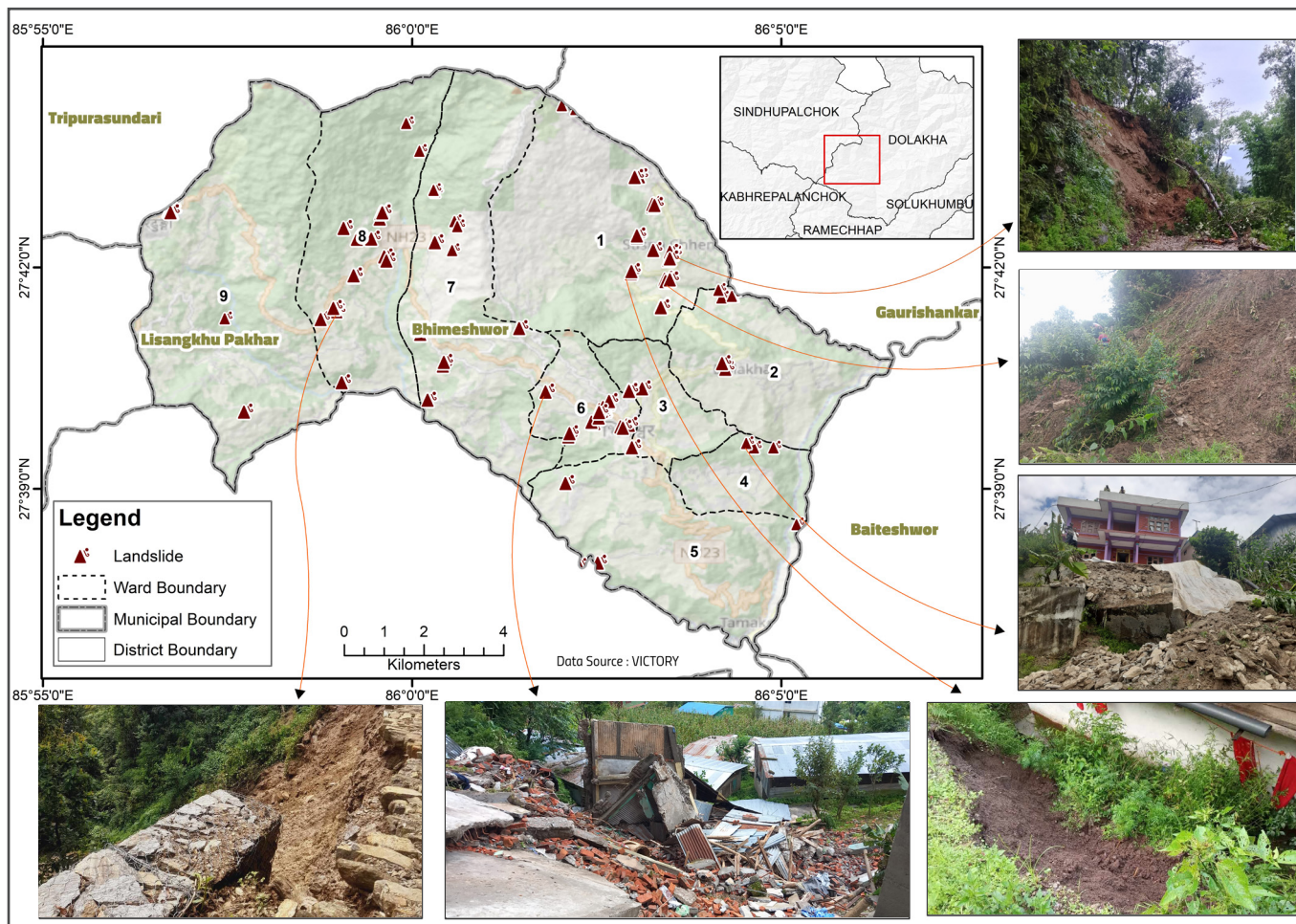


Bhimeshwor Municipality study area map

1. INTRODUCTION

1.1 Context and Background Information

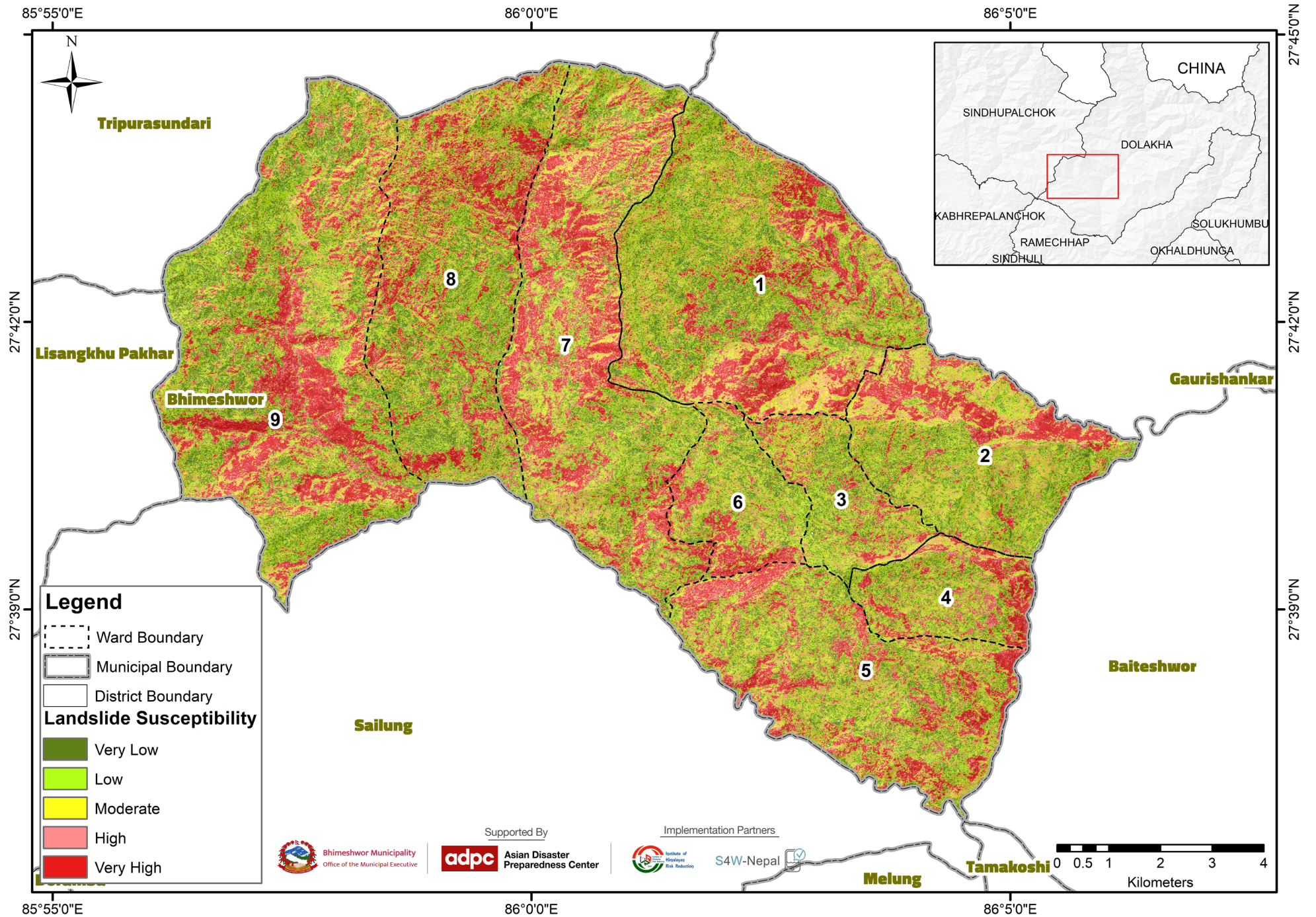
Bhimeshwor Municipality is situated at Dolakha district of Bagmati Province, Nepal. The municipality has been named after the very ancient and sacred destination Dolakha Bhimeshwor Temple, which is a site dedicated to Bhimsen from Hindu mythology, and attracts numerous pilgrims during festivals like Dashain and Bala Chaturdashi. Bhimeshwor has a total of 9 wards, scattered across 133 square kilometers of geographical area. The town is located at an altitude of 1,554 metres (5,101 feet). The region is bordered by the Sun Kosi River on the west and the Khimti Khola River on the east. The municipality is situated in the hilly terrain, offering beautiful landscapes and acting as a gateway to the Gaurishankar Conservation Area.

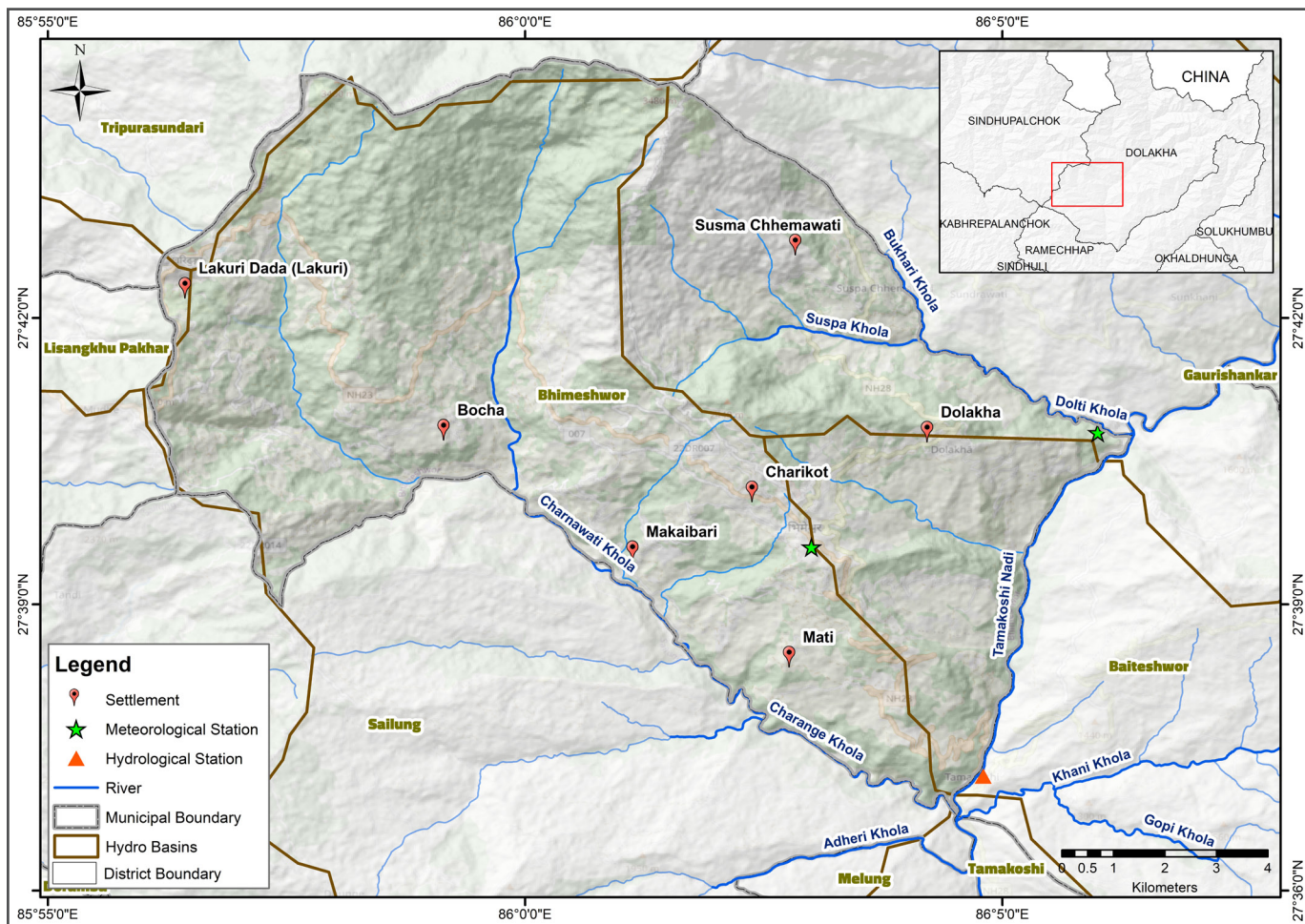


Landslide triggers and impacts in Bhimeshwor 2024

1.2 Landslide Inventory in Bhimeshwor

Bhimeshwor Municipality faces significant risks from landslides due to its steep terrain, fragile geology, and monsoon rainfall. Landslides are often triggered by prolonged heavy rains, which saturate the soil and reduce slope stability, as well as by human activities such as deforestation, unplanned urbanization, and poorly designed road construction. The 2015 Gorkha Earthquake further weakened the region's geological structure, increasing its susceptibility to such hazards. Landslides in Bhimeshwor have caused injuries, displacement, and damage to property, including houses, agricultural fields, and critical infrastructure like roads and water systems. These events disrupt livelihoods and impose significant economic burdens on the community.





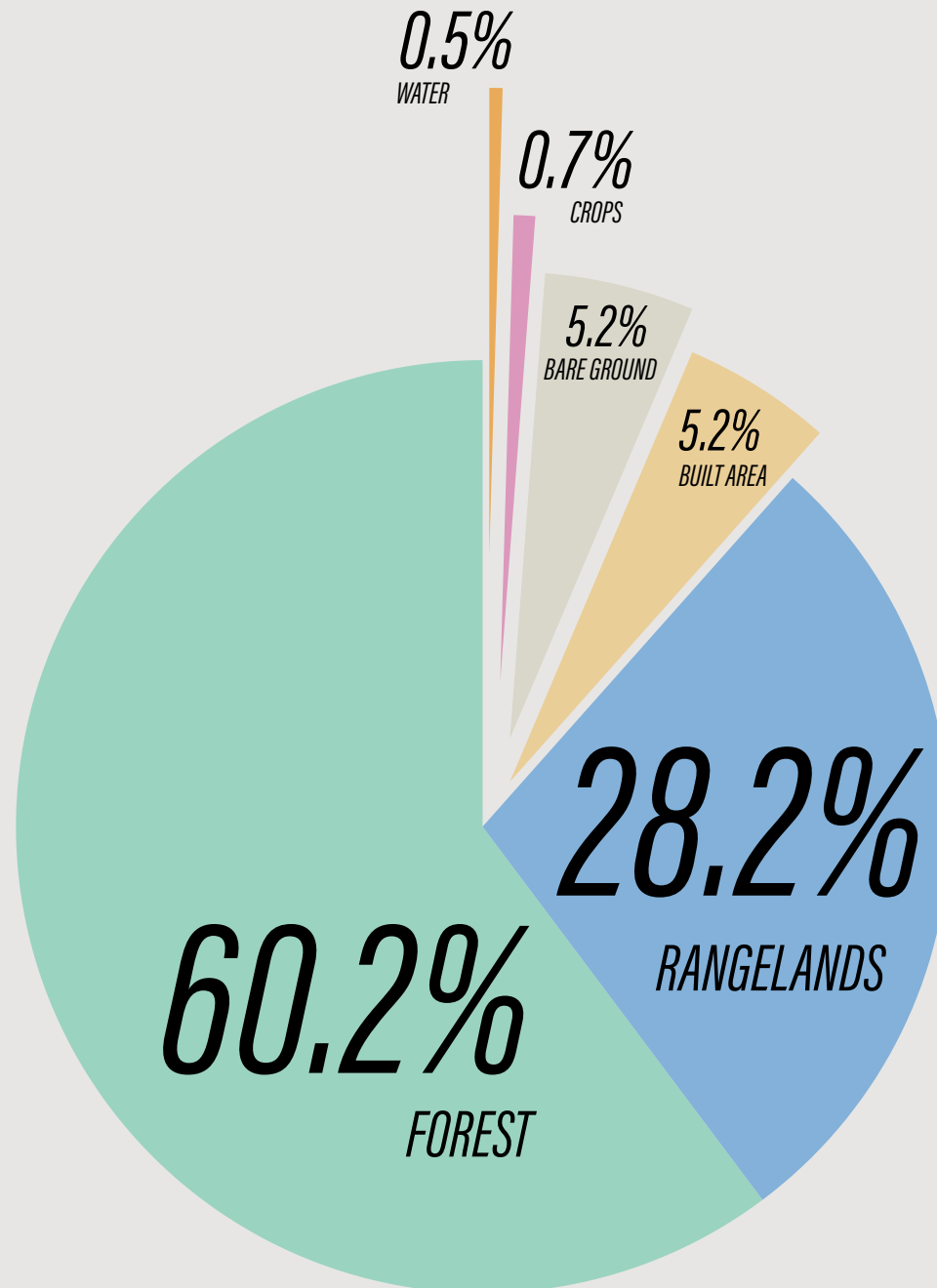
Sub-Watershed Map of Bhimeshwor

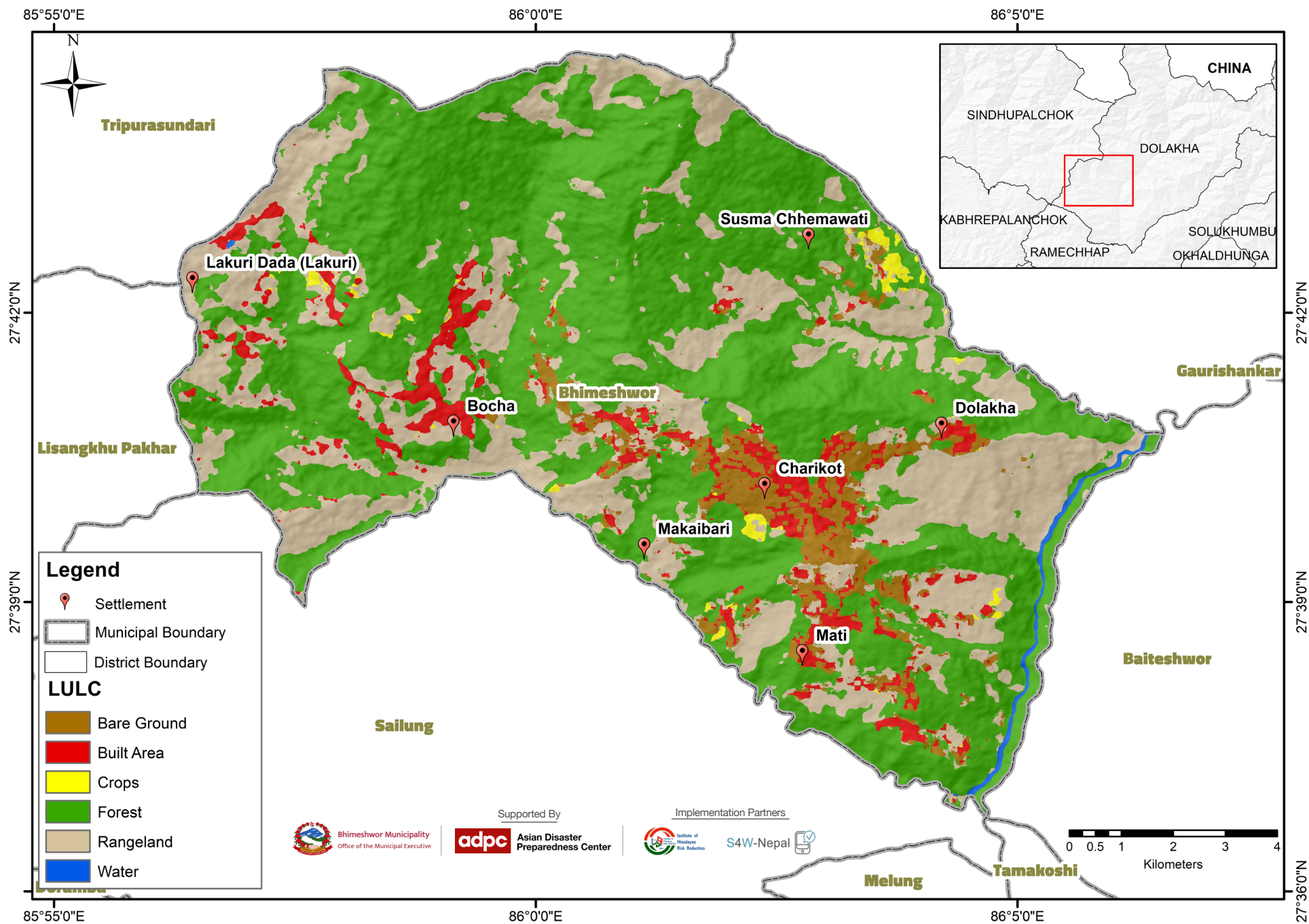
1.3 Sub-Watershed Map of Bhimeshwor

Bhimeshwor Municipality lies within an interconnected network of sub-watersheds dominated by major river systems, including the Tamakoshi River, Suspa Khola, and Chamawati Khola. These rivers, along with smaller streams and rivulets such as Dolti Khola, play a crucial role in the region's hydrology, supporting irrigation, hydropower, and local biodiversity. The sub-watersheds also sustain forest ecosystems and freshwater sources for local communities. However, the municipality's steep slopes and fragile geology make these systems susceptible to erosion and sedimentation, particularly during intense monsoon rainfall. Improper land use, deforestation, and unplanned development further exacerbate risks like flooding, landslides, and water scarcity. Effective management of these sub-watersheds is essential for maintaining ecological stability and ensuring sustainable water resource use in Bhimeshwor.

1.4 Land Use Map of Bhimeshwor

Bhimeshwor Municipality is primarily composed of forest area covering 7,343.65 hectares, which accounts for 60.24% of the total land area, and plays a critical role in maintaining biodiversity, regulating the water cycle, and supporting local livelihoods. Rangelands occupy 3,437.33 hectares (28.20%), serving as grazing grounds for the livestock. Built-up areas, including settlements and infrastructure, span 630.64 hectares (5.17%), reflecting ongoing urbanization and development. Bare ground, consisting of unproductive or eroded land, covers 632.25 hectares (5.19%), highlighting the challenges of land degradation. Agricultural lands, used for crop production, make up 90.94 hectares (0.75%), while water bodies, including rivers and reservoirs, occupy 55.64 hectares (0.46%), supporting irrigation and aquatic ecosystems.



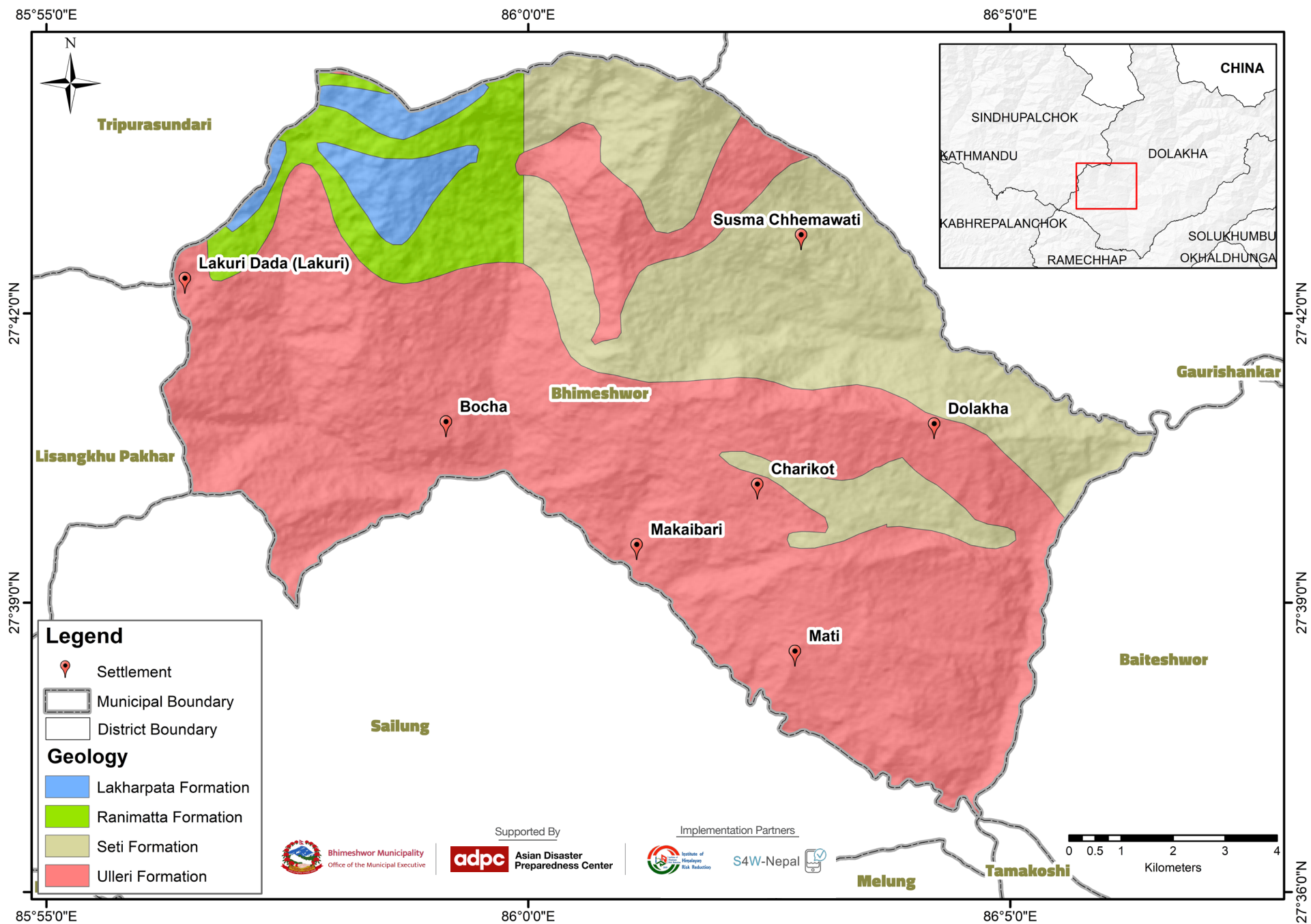


Land use map (2023) of Bhimeshwar

1.5 Geology of Bhimeshwor

The geology of Bhimeshwor Municipality is composed of key formations typical of the Lesser Himalayas, including the Lakharpata Formation, Ranimatta Formation, Seti Formation, and Ulleri Formation. The Lakharpata Formation is characterized by fine-grained sedimentary rocks such as shale, limestone, and sandstone, reflecting a marine depositional environment from the Paleozoic era. The Ranimatta Formation consists of metamorphic rocks, including phyllite and quartzite, which are indicative of regional metamorphism and tectonic uplift. The Seti Formation primarily comprises well-bedded quartzite with interbedded phyllites, showcasing high resistance to weathering and erosion. Lastly, the Ulleri Formation is dominated by coarse-grained, massive granitic gneisses and schists, representing deep crustal processes and significant tectonic activity. These formations collectively define the complex geological structure of the municipality, contributing to its diverse landscape while also posing challenges such as landslide susceptibility and erosion, particularly in areas with steep slopes and fragile rock types.





Geology map of Bhimeshwar

1.6 Education Institutions in Bhimeshwar

Ward	Name	Level	Sub Category
1	Sundrawoti Basic	Primary	Basic School
	Buddha Basic	Primary	Basic School
	Bhumeshwori Basic	Primary	Basic School
	Lamnagi Basic	Primary	Basic School
	Mahadevsthan Basic	Primary	Basic School
	Kshamawoti Secondary	Secondary	Secondary School
	Manedanda Basic	Primary	Basic School
	Bosimpa Basic	Primary	Basic School
	Tikhatal Basic	Primary	Basic School
	Rajkuleshwar Basic	Primary	Basic School
	Balmandir Basic	Primary	Basic School
2	Bhim Secondary	Secondary	Secondary School
	Fulapa Basic	Primary	Basic School
	Tripura Sundari Basic	Primary	Basic School
	Bhimeshwar Deaf Basic	Primary	Basic School
	Pashupatikanya Secondary	Secondary	Secondary School
	kalinchwok Secondary	Secondary	Secondary School
	Guairishankar College	Campus	College
3	Sarba Secondary	Secondary	Secondary School
	Bishnutole Basic and Sahari Health Clinic	Primary	Basic School
4	Budabhimshen Secondary	Secondary	Secondary School
	Mahendradayo Secondary	Secondary	Secondary School
	Mathhilomati Basic	Primary	Basic School
	Charikot College	Campus	College
5	shree mahankal Basic	Primary	Basic School
	Setidevi Secondary	Secondary	Secondary School
	Birendra Basic	Primary	Basic School
	Kupridanda Basic	Primary	Basic School

Ward	Name	Level	Sub Category
6	Harikritan Basic	Primary	Basic School
	Kutidanda Secondary	Secondary	Secondary School
	Sakhine Basic	Primary	Basic School
7	Devi Secondary	Secondary	Secondary School
	Lamidanda Basic	Primary	Basic School
	Prithivinarayan Basic	Primary	Basic School
	Setidevi Basic	Primary	Basic School
	Surke Secondary	Secondary	Secondary School
8	Lakuri Dada Basic	Primary	Basic School
	Buddha Basic	Primary	Basic School
	Kalidevi Basic	Primary	Basic School
9	Surke Secondary	Secondary	Secondary School
	Setidevi Basic	Primary	Basic School
	Surke Secondary	Secondary	Secondary School
	Narijagaran Basic	Primary	Basic School
	Lakuri Dada Basic	Primary	Basic School
	Buddha Basic	Primary	Basic School
	Kalidevi Basic	Primary	Basic School
	Surke Secondary	Secondary	Secondary School



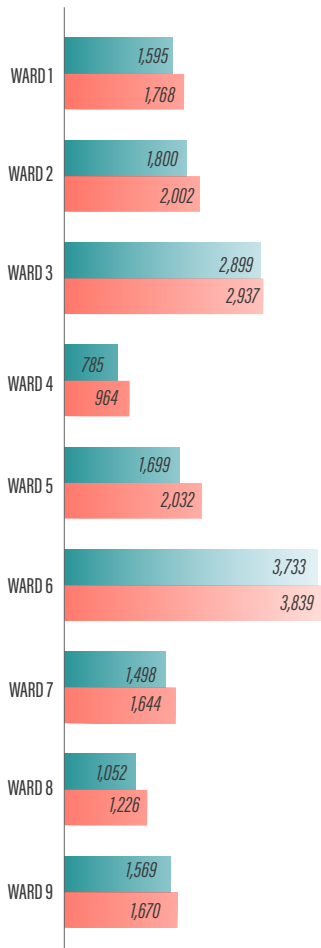
1.7 Ward Offices in Bhimeshwor

Ward	Name	Chairman
1	Ward Office 1	Madhav Thami
2	Ward Office 2	Stalin Shrestha
3	Ward Office 3	Hari Sharan Shiwakoti
4	Ward Office 4	Tara Nath Chaulagain
5	Ward Office 5	Bashu Shrestha
6	Ward Office 6	Nabin Kumar Lama
7	Ward Office 7	Binod Tamang
8	Ward Office 8	Kaji Budhathoki
9	Ward Office 9	Himal Shrestha

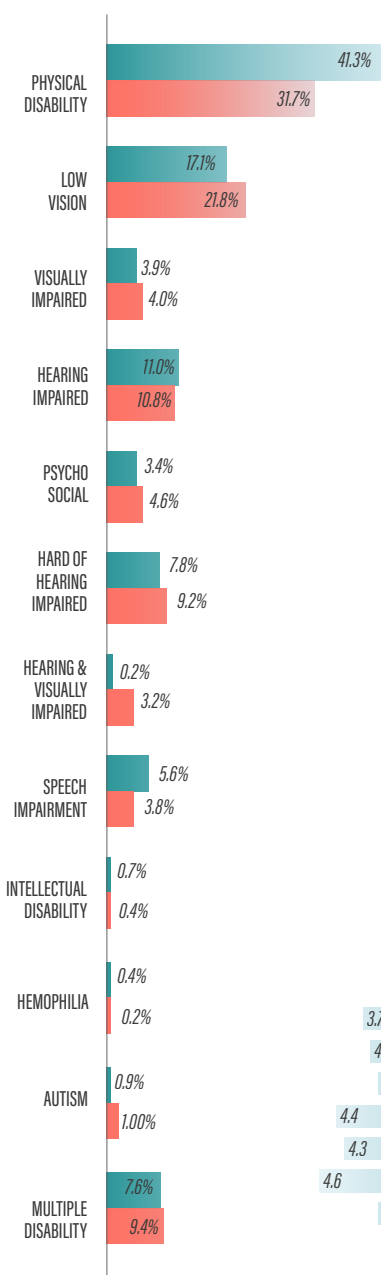
2. KEY HIGHLIGHTS OF VICTORY PROJECTS

2.1 Quick Facts and Statistics

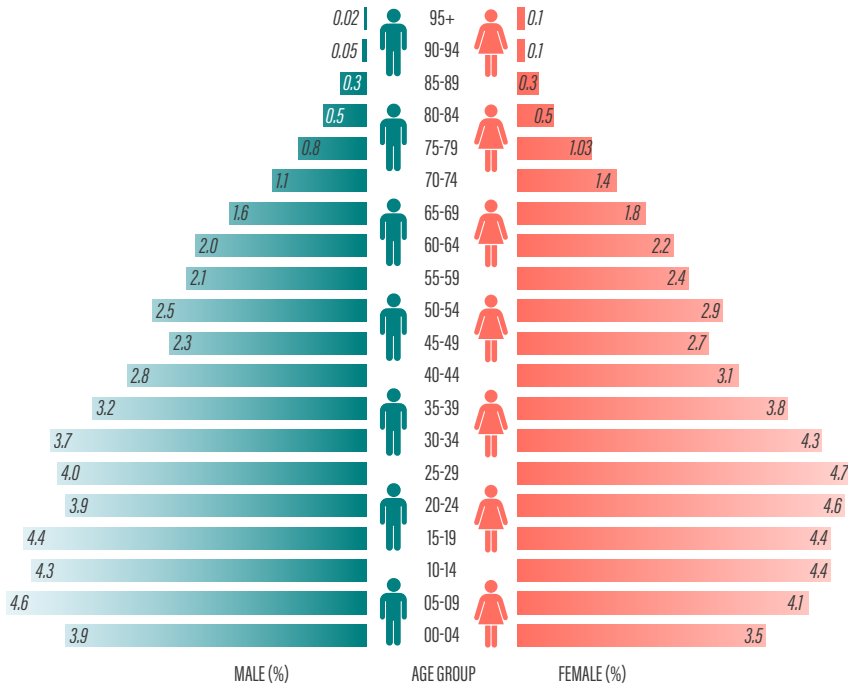
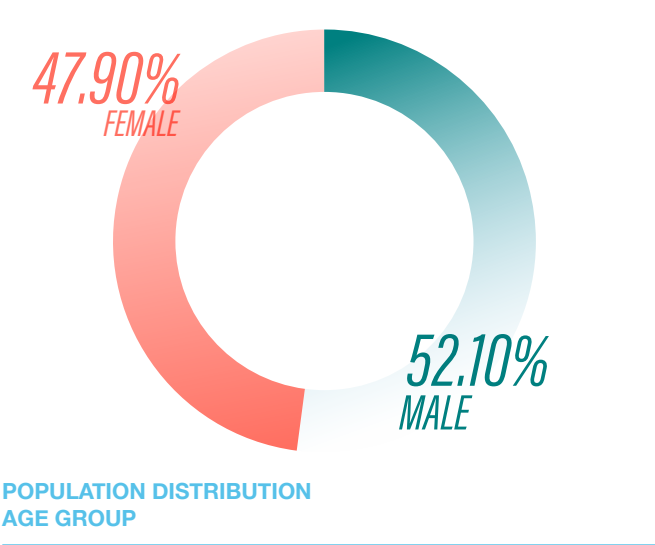
WARD WISE GENDER DISTRIBUTION



POPULATION DISABILITY BY TYPE



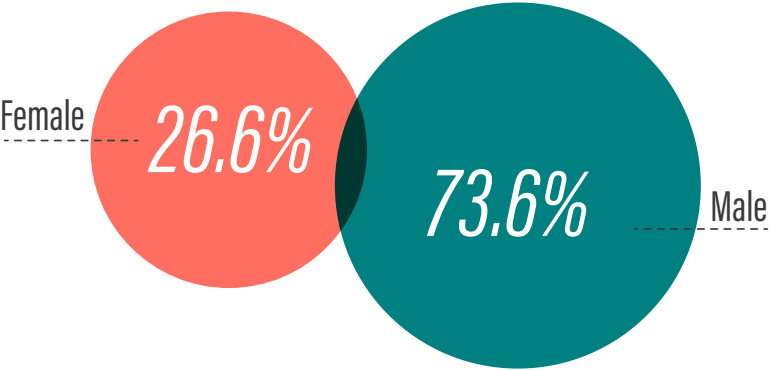
GENDER DISTRIBUTION



TOTAL POPULATION



POPULATION LIVING ABROAD





VICTORY Implementation in Bhimeshwor

2.2 VICTORY Implementation in Bhimeshwor

Ward Sensitization: As a part of the VICTORY project, ward-level sensitization activities were conducted in Bhimeshwor Municipality, focusing on landslide risk management in the area. The meetings were held across all 9 wards from April 15 to April 19, 2024, engaging 191 participants. The activities included interactive sessions to identify landslide-prone areas, selection of 50 locations for rain gauge installation, and nomination of citizen scientists by ward chairpersons. These efforts aimed to enhance local capacity for data collection and early warning systems (EWS).

These activities successfully:

- Introduced the VICTORY project and its objectives to local communities
- Engaged stakeholders in identifying hazard-prone areas
- Selected strategic locations for monitoring equipment
- Nominated citizen scientists for data collection
- Enhanced community understanding of EWS and citizen science

The team conducted stakeholder mapping and developed inclusive criteria to engage diverse groups, including ward officials, local organizations, women, youth, and vulnerable communities, in the project. The sensitization workshop was designed to address the concerns of vulnerable groups and enable wards to suggest inclusive criteria for recruiting community support for project implementation. The VICTORY project conducted interactive sessions to explain its objectives and principles of citizen science, followed by training participants to use low-cost rain gauges for data collection and event reporting. Strategic monitoring locations were identified, citizen scientists were recruited, and stakeholders' capacities were enhanced to strengthen community-driven environmental monitoring and early warning systems.



School Outreach

As part of VICTORY's objectives, a school outreach program was conducted to orient students about the low cost innovations of the project, emphasize the importance of rainfall, promote the concept of citizen science, and develop a culture of disaster preparedness and resilience within communities. This outreach aimed to strengthen the capacity of citizen scientists, ensuring they are equipped to collect and analyze data that will contribute to disaster risk reduction. In Bhimeshwar Municipality, from May 27 to May 31, the outreach program was conducted in nine schools thereby orienting a total of 531 students, including 249 boys and 282 girls. The school outreach training was conducted across nine schools:

1. Bhim Secondary School,
2. Kalinchowk Secondary School,
3. Tripura Glorious Academy,
4. Shree Mahendrodaya Secondary School,
5. Pashupati Kanya Mandir,
6. Shree Kshamawati Secondary School,
7. Kutidanda Secondary School,
8. Sarba Secondary School, and
9. Shree Devi Secondary School.

The sessions also promoted the concept of citizen science, engaging students in understanding rainfall patterns and their impact on landslides. The training aimed to foster a culture of disaster preparedness and resilience within the community. Interactive demonstrations using charts, graphs, and low-cost rain gauges were provided to enhance understanding. Practical sessions included demonstrations on precipitation data measurement using low-cost rain gauges, teaching students how to accurately record and report rainfall data.



Online mapathon training

MAPATHON

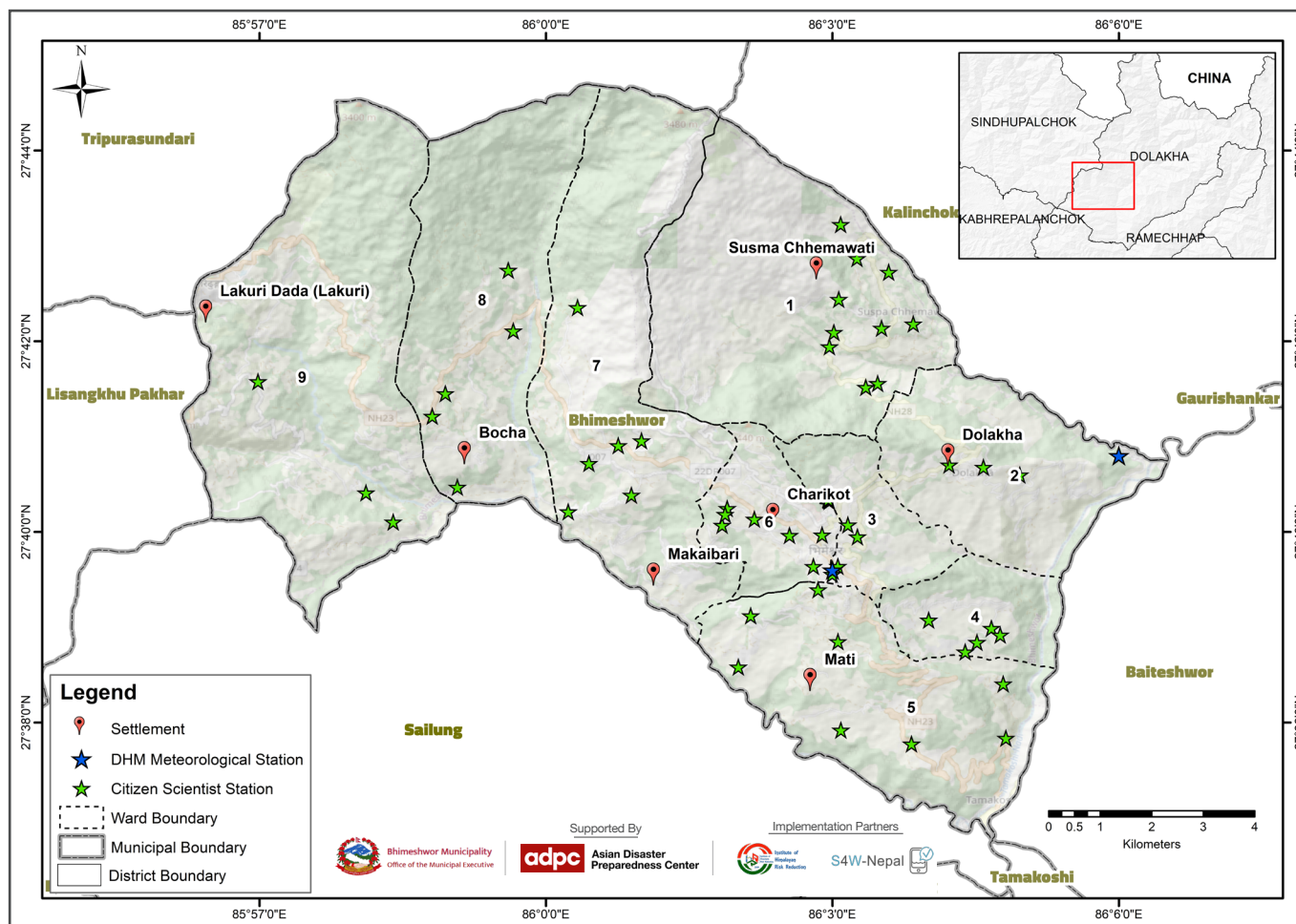
The VICTORY Online Mapathon, a key component of the VICTORY project, aimed to enhance the skills of digital volunteers and improve the digitization of various geographic features such as building footprints and rivers. This initiative included capacity-building sessions, mapping competitions, and the addition of features to OpenStreetMap (OSM), all crucial for anticipatory planning and improving location-based services.

A total of **44 participants (28 males and 16 females)** took part in the Mapathon. They underwent a comprehensive two-day training program that began with an introduction to OSM and advanced to practical sessions using the iD Editor and JOSM tools. The participants then actively contributed to digitizing key landmarks and infrastructure, enhancing the accuracy and detail of local maps while gaining valuable digital mapping skills.

In Bhimeshwor, the participants documented **1,479 buildings, 88.7 km of roads, 5.1 km² of land use, and 22.6 km of waterways**. These comprehensive mapping activities significantly contributed to the detailed cartographic representation of the regions. In recognition of their exceptional contributions, the top five mappers, who excelled on the leaderboard, were awarded certificates and cash prizes.

Impacts of VICTORY Mapathon

Evaluation Metric	Pre-Training	Post-Training
Familiarity with adding new features to OSM	42% very familiar, 55% slightly familiar	75% very familiar, 20% slightly familiar
Experience editing maps using JOSM editor	60% had never edited maps	80% had edited maps
Ability to open mapping platforms	33% average, 33% good	50% good, 40% excellent
Understanding visualizing and downloading OSM data	25% completely understood, 16% no understanding	70% completely understood, 5% no understanding
Use of GIS software for mapping projects	84.8% had used before	95% had used before
Confidence using JOSM interface and tools	30% very confident, 15% not confident	65% confident, 5% not confident
Understanding of using tags in OSM	34% minimal, 25% advanced	60% advanced, 20% minimal
Familiarity with using satellite imagery for mapping	30% very familiar, 24% slightly familiar	55% very familiar, 30% slightly familiar
Participation in mapping projects for disaster response or humanitarian purposes	45% participated	70% participated



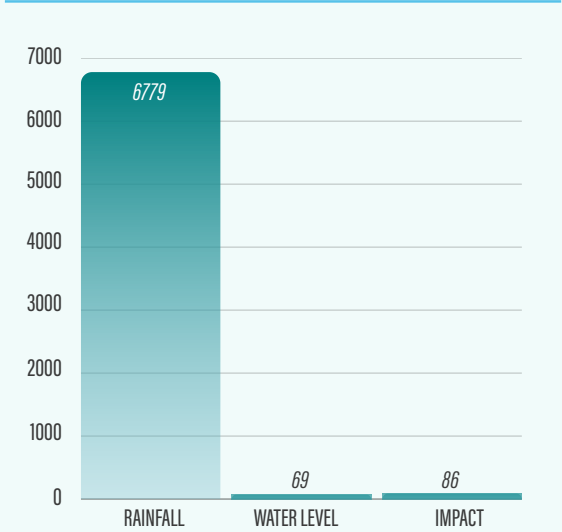
Citizen Scientist Locations in Bhimeshwor

2.3 Citizen Scientist Locations in Bhimeshwor

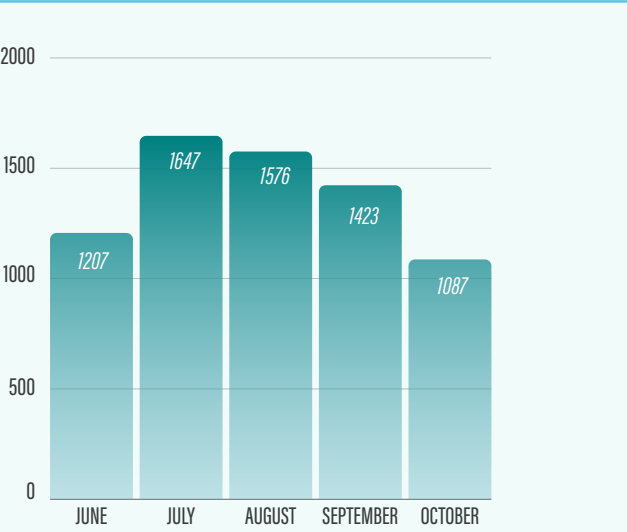
In Bhimeshwor Municipality, citizen scientists played a pivotal role in the VICTORY project's official launching program on May 30, 2024. The citizen scientists for each ward in Bhimeshwor were nominated by the respective ward representatives. In the presence of Mayor, Deputy Mayor, Ward Chairpersons and other representatives the citizen scientists took an oath to be citizen scientists for rainfall, flood, and landslide monitoring during the oath-taking ceremony. The oath to be citizen scientists was given by the Mayors of the municipalities. During the ceremony, they received low-cost instruments, including rain gauges and installation materials, distributed by ward presidents. The citizen scientists were motivated by speeches from local leaders, emphasizing their critical role in disaster preparedness and community safety, and expressed enthusiasm for their responsibilities in data collection and environmental monitoring.

CITIZEN SCIENTISTS SUBMISSIONS SUMMARY

TOTAL SUBMISSION BY CATEGORY
MONSOON JUNE-OCTOBER 2024



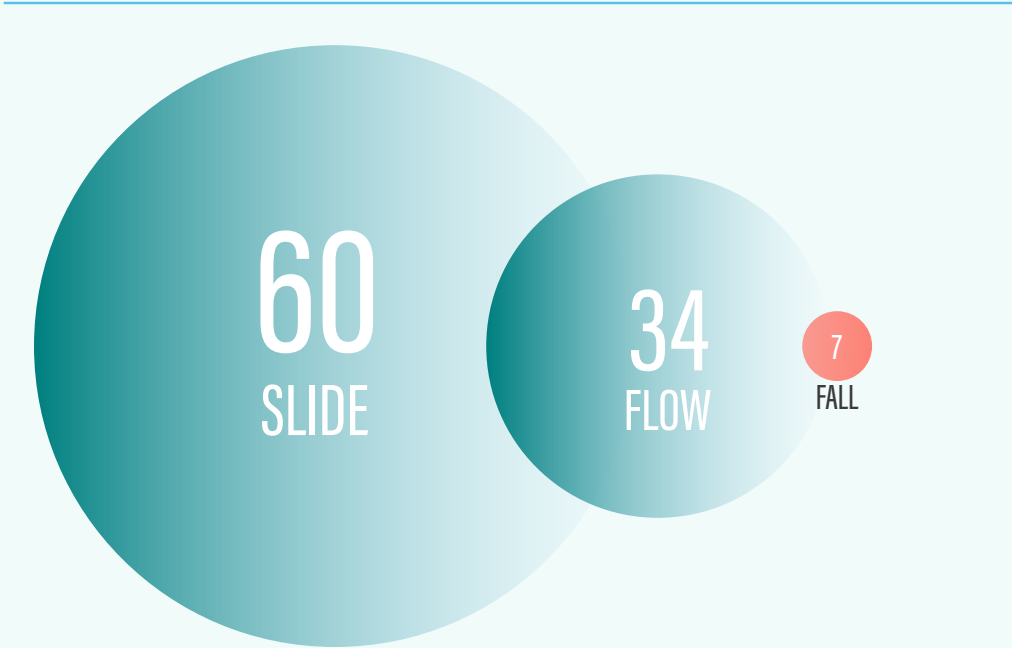
TOTAL SUBMISSION BY DATE (MONTHLY SUBMISSIONS)



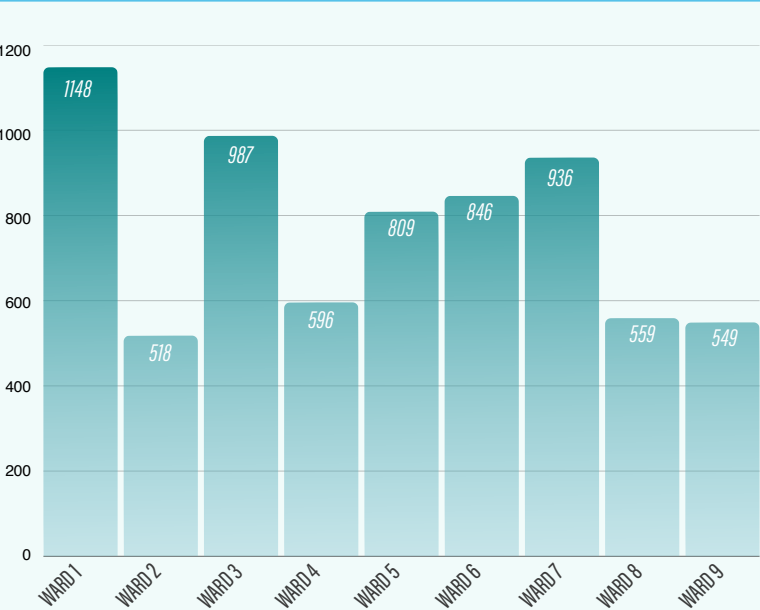
TOTAL LANDSLIDE IMPACTS SUBMITTED



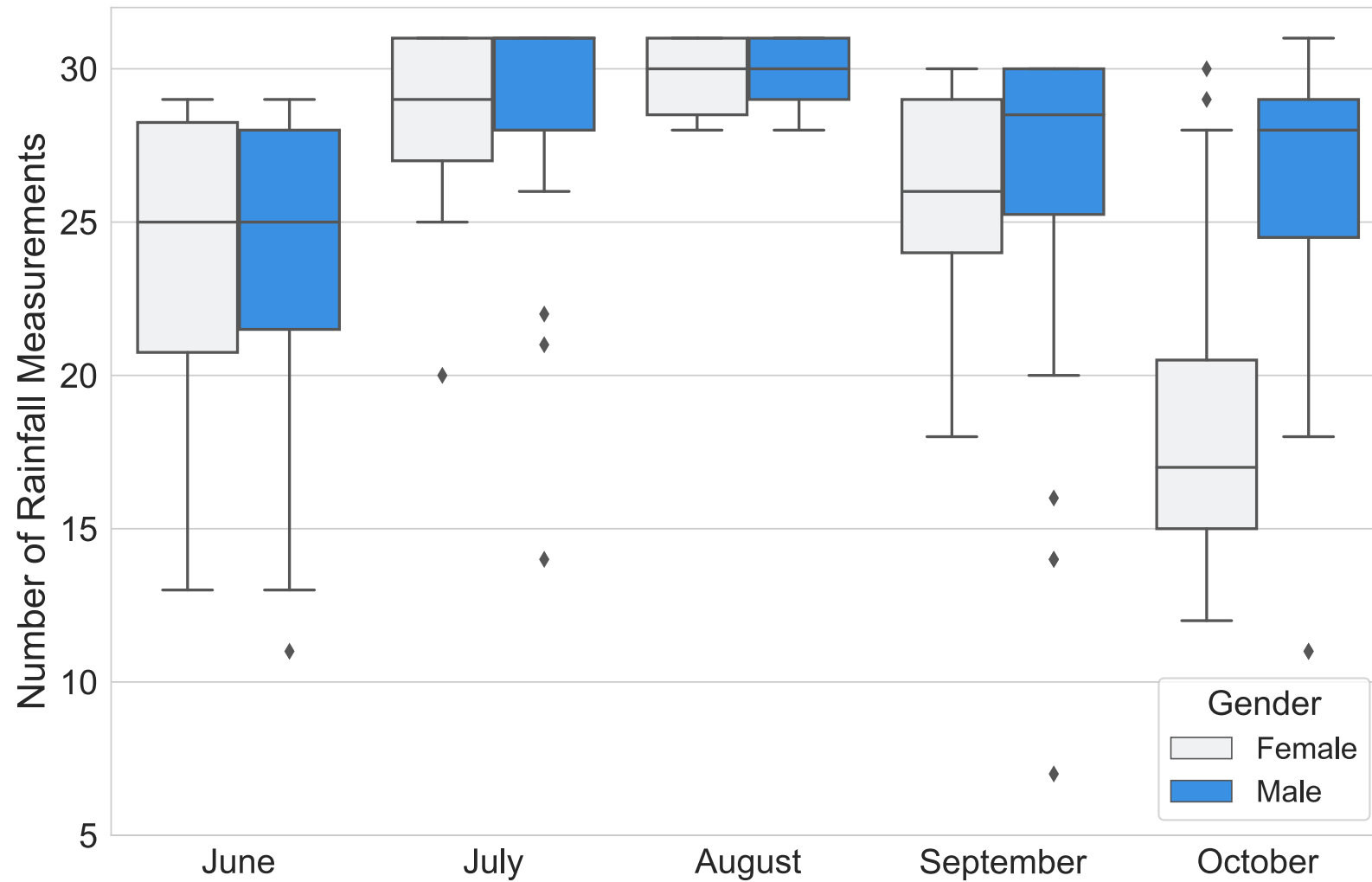
TOTAL LANDSLIDE
PATTERN



TOTAL SUBMISSION BY
LOCATIONS



CITIZEN SCIENTIST REGULARITY IN DATA SUBMISSION (MALE/FEMALE)

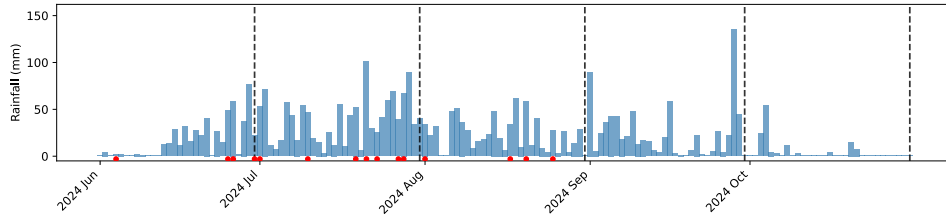


Total rainfall measurements (June-October 2024) by gender

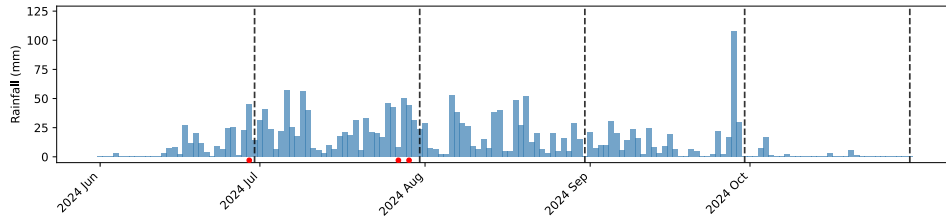
MONSOON PRECIPITATION PATTERNS AND VARIABILITY

3.1 Spatio-temporal Variation of Rainfall and Landslide incidences in 2024

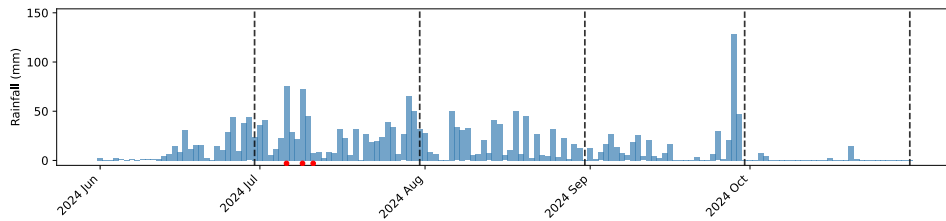
Ward1 Rainfall & Landslide Events



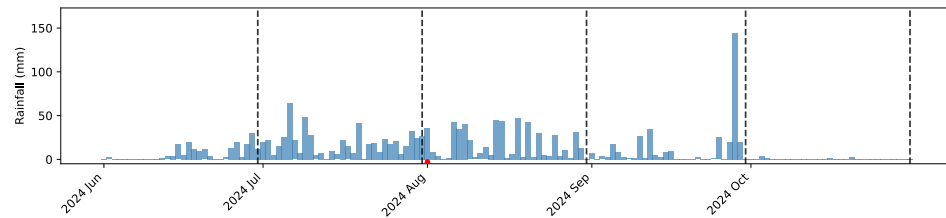
Ward2 Rainfall & Landslide Events



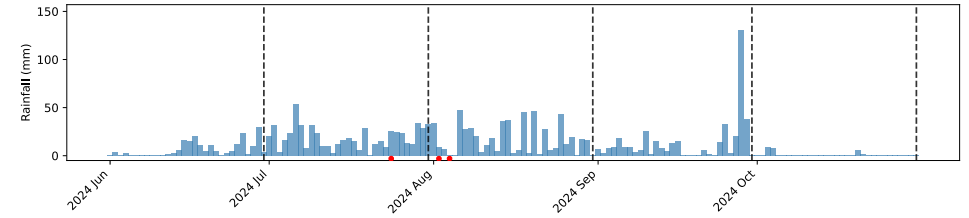
Ward3 Rainfall & Landslide Events



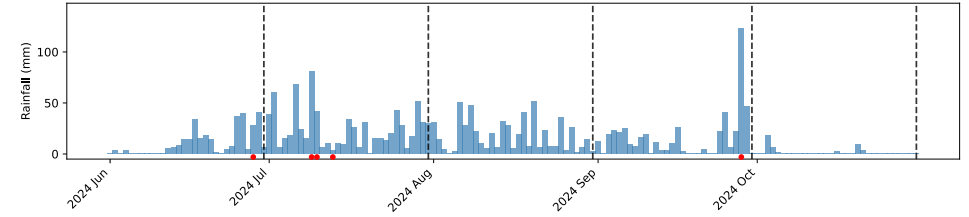
Ward4 Rainfall & Landslide Events



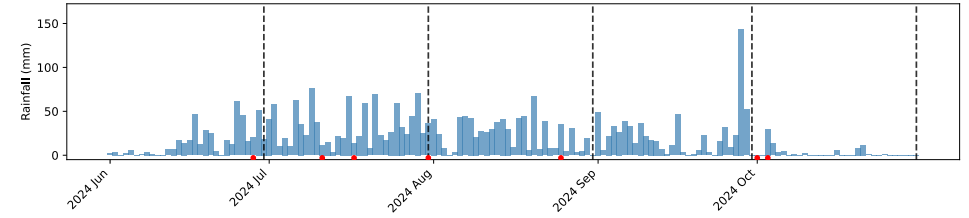
Ward5 Rainfall & Landslide Events



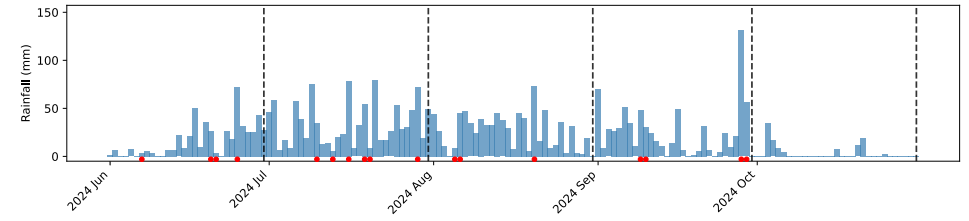
Ward6 Rainfall & Landslide Events



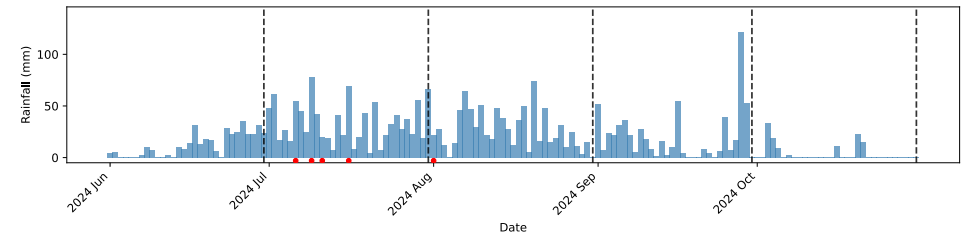
Ward7 Rainfall & Landslide Events



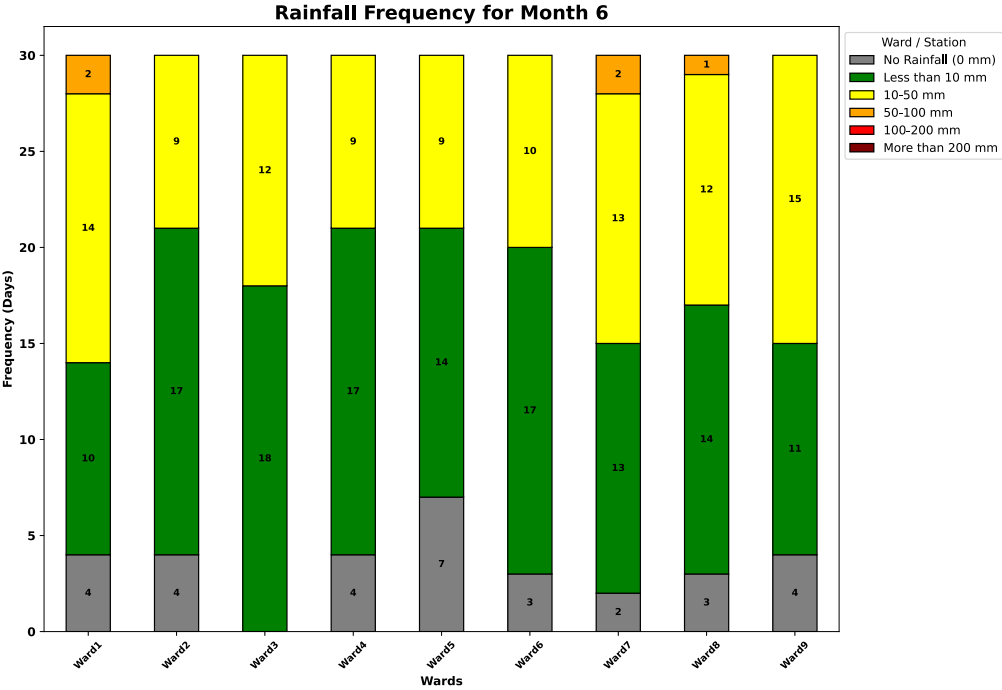
Ward8 Rainfall & Landslide Events



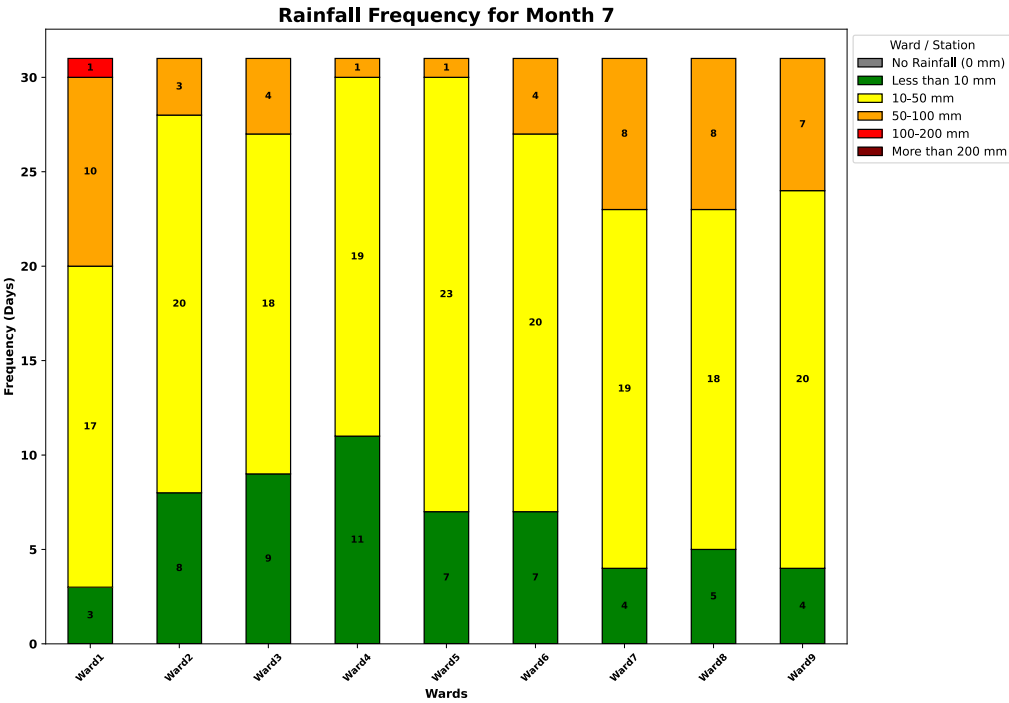
Ward9 Rainfall & Landslide Events



3.2 Ward-wise Rainfall Frequency distribution



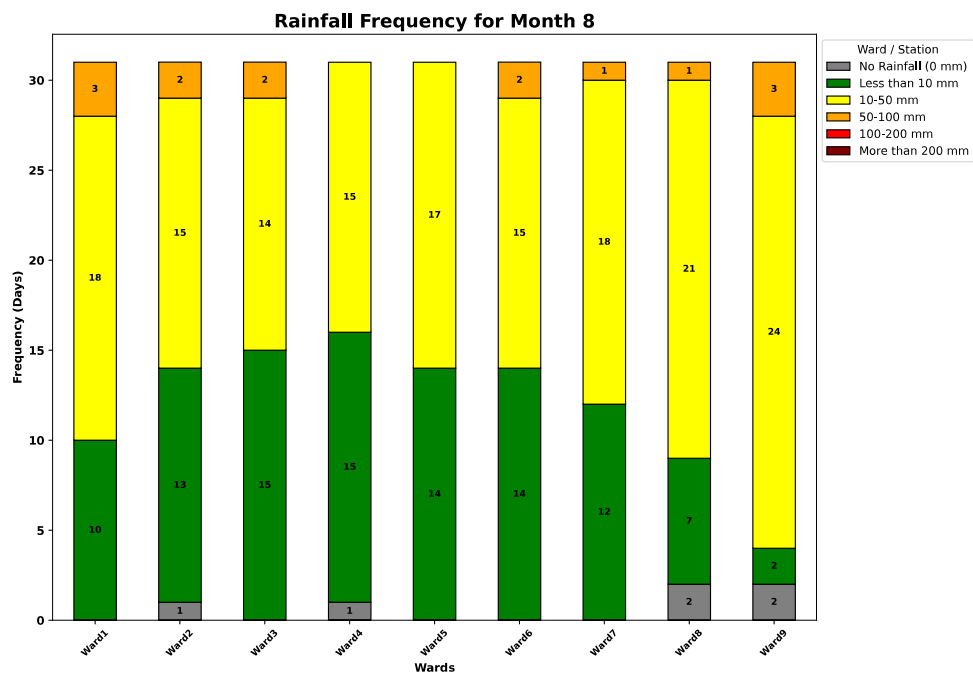
Month	503.8	250.2	335.4	191.1	185.9	308.4	439.8	489.4	364.2
Accum									
Rain(mm)									
Max	76.4	44.9	43.8	30.5	29.9	40.5	61.1	72.2	35.2
Rain(mm)									



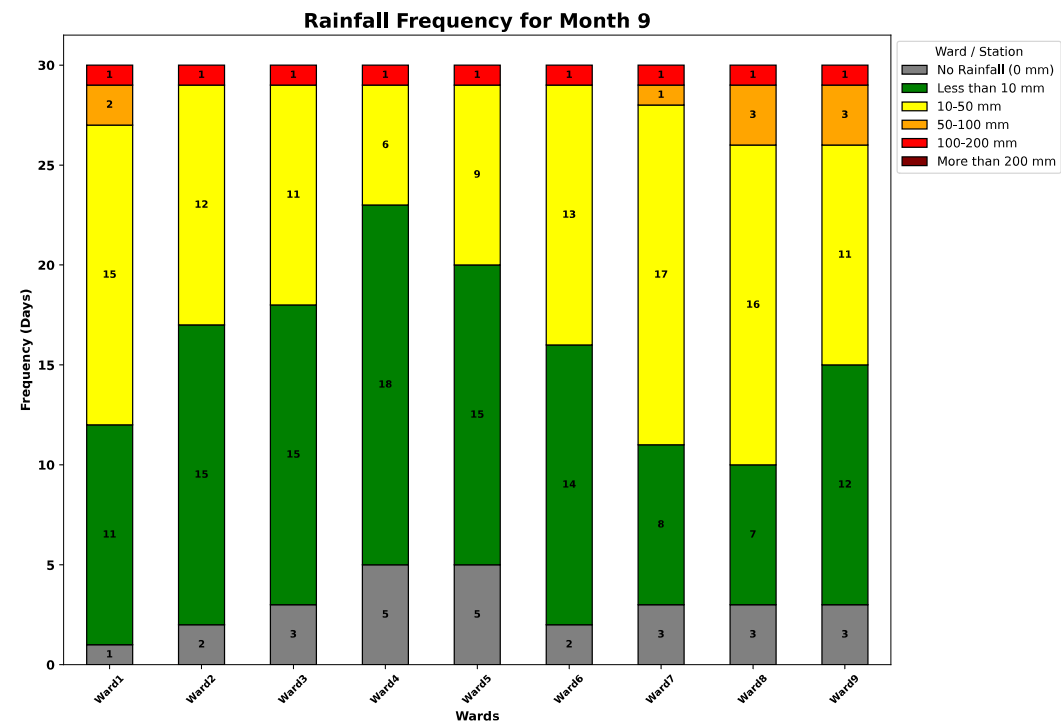
Month	1217.5	783.2	832.4	583.2	592.8	775.6	1038.7	1060.9	1051.7
Accum									
Rain(mm)									
Max	100.9	57.0	75.3	64.3	53.8	80.7	75.7	79.5	77.5
Rain(mm)									

Accumulated precipitation from June to July 2024

Note: The number shown in the above graph signifies the number of days in a month when there is either no rainfall or less than 10mm or other range of precipitation given in the index.

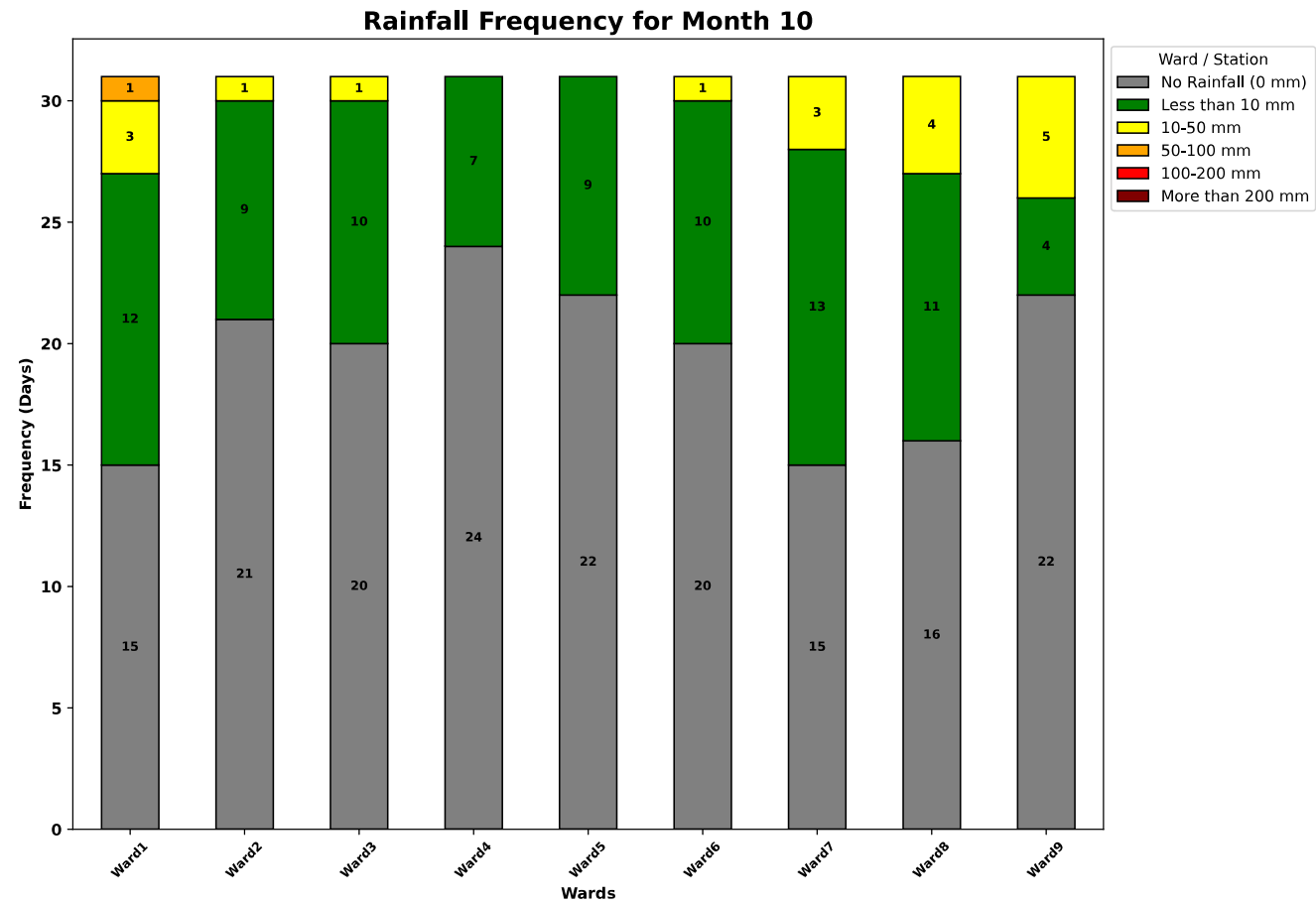


Month	726.0	574.9	555.1	535.8	539.4	558.4	746.7	809.9	839.2
Accum Rain(mm)									
Max Rain(mm)	61.7	52.4	50.7	47.2	46.8	51.0	66.6	73.2	74.5



Month	733.6	421.2	430.7	346.7	400.7	473.7	689.3	748.9	602.2
Accum Rain(mm)									
Max Rain(mm)	135.0	107.7	128.3	144.1	130.9	123.1	143.7	131.0	121.6

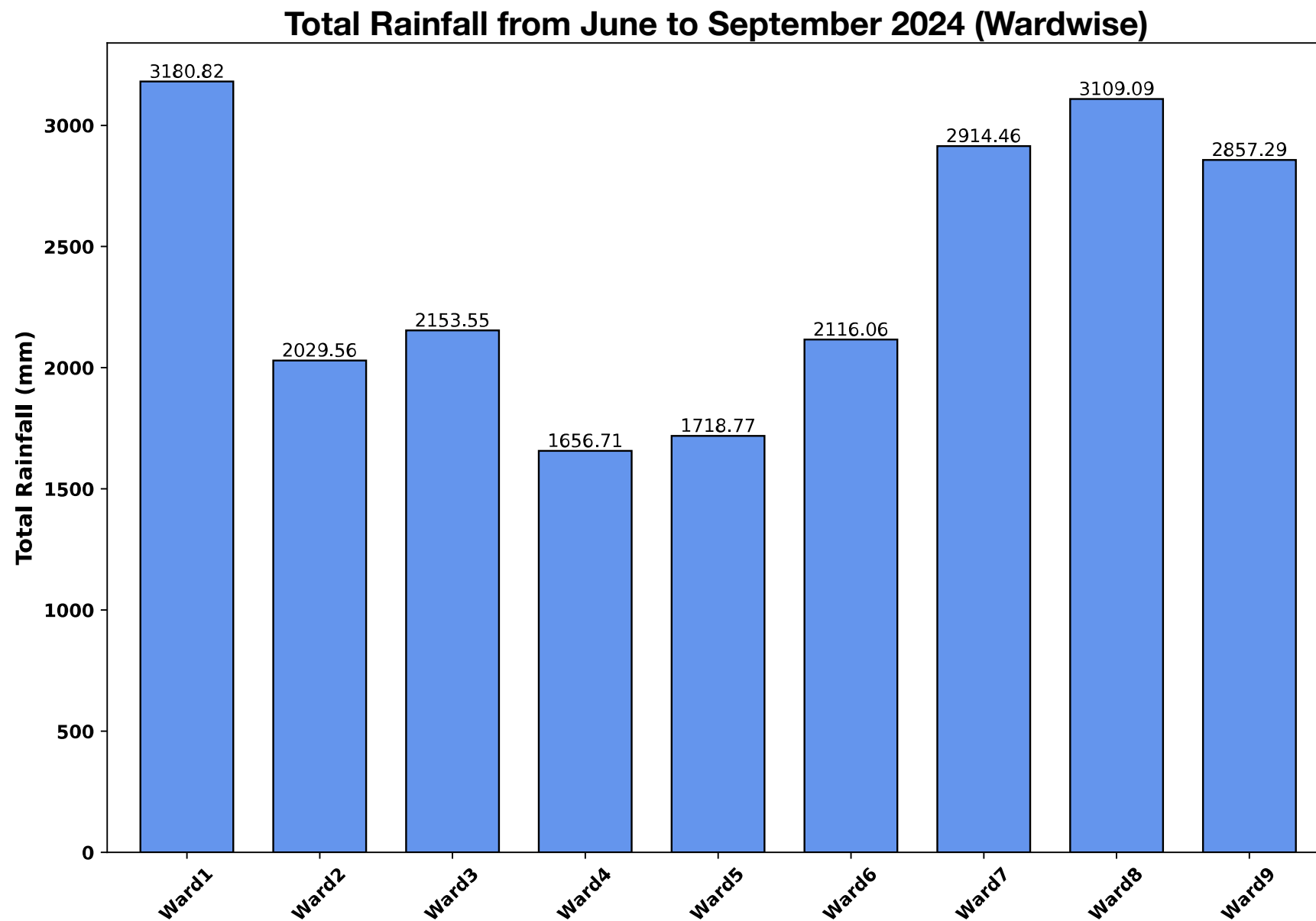
Accumulated precipitation from August to September 2024

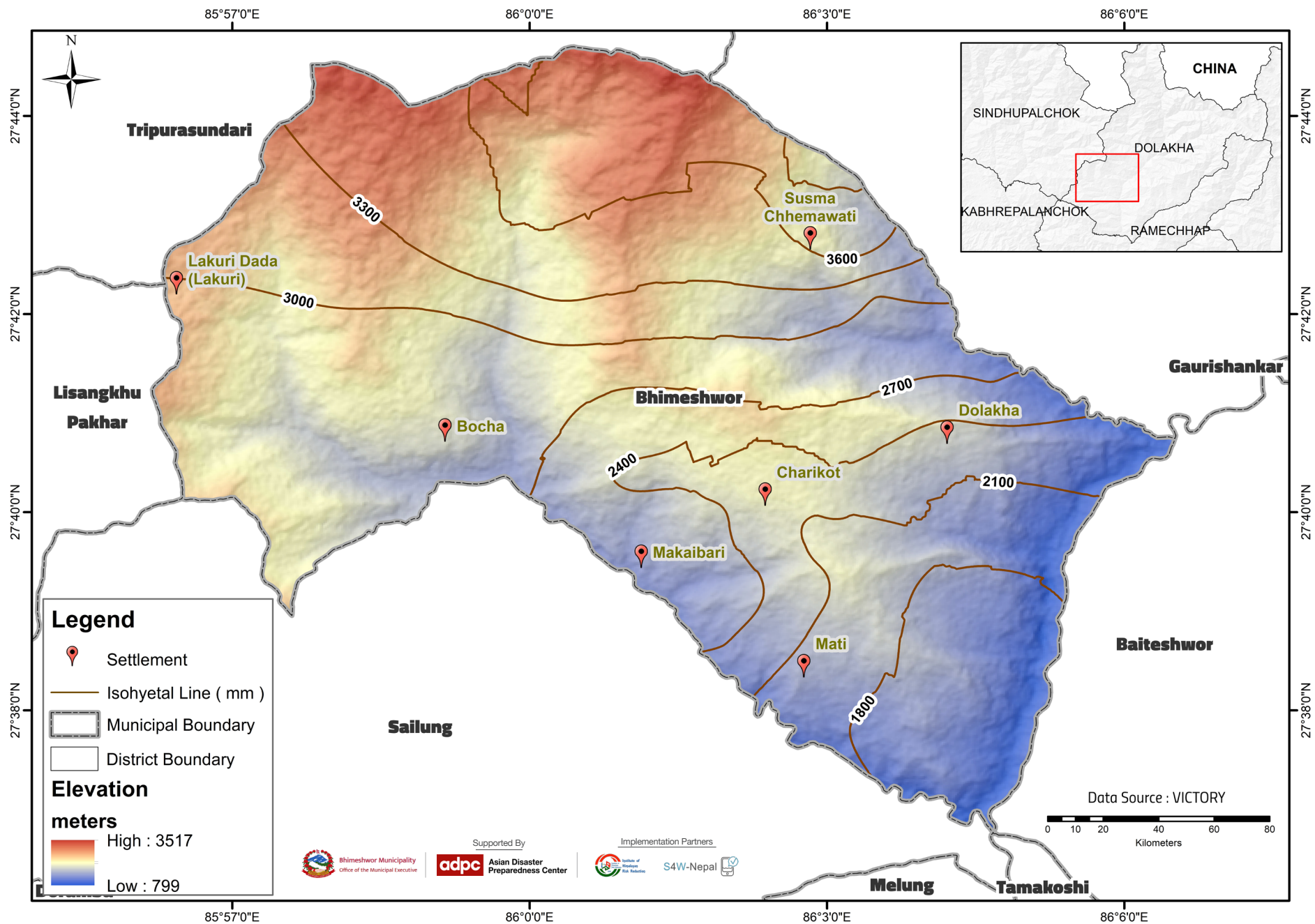


Month	129.2	38.4	32.3	10.0	24.9	42.5	82.8	105.7	114.0
Accum Rain(mm)									
Max Rain(mm)	54.0	16.9	14.5	3.7	8.6	18.5	29.7	34.5	33.7

Accumulated precipitation from October 2024

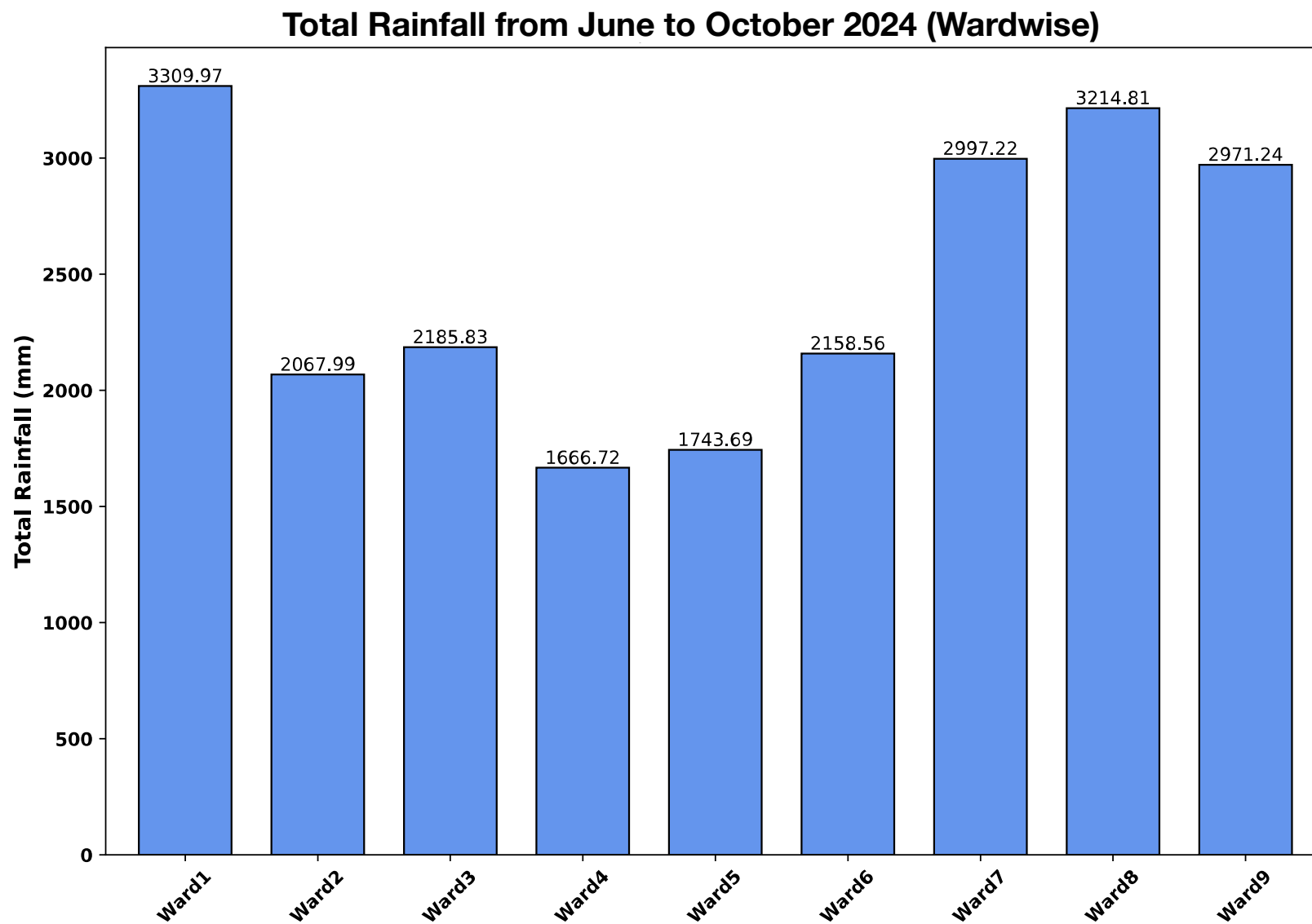
3.3 Monsoonal Accumulated Rainfall in Bhimeshwor (June to September 2024)

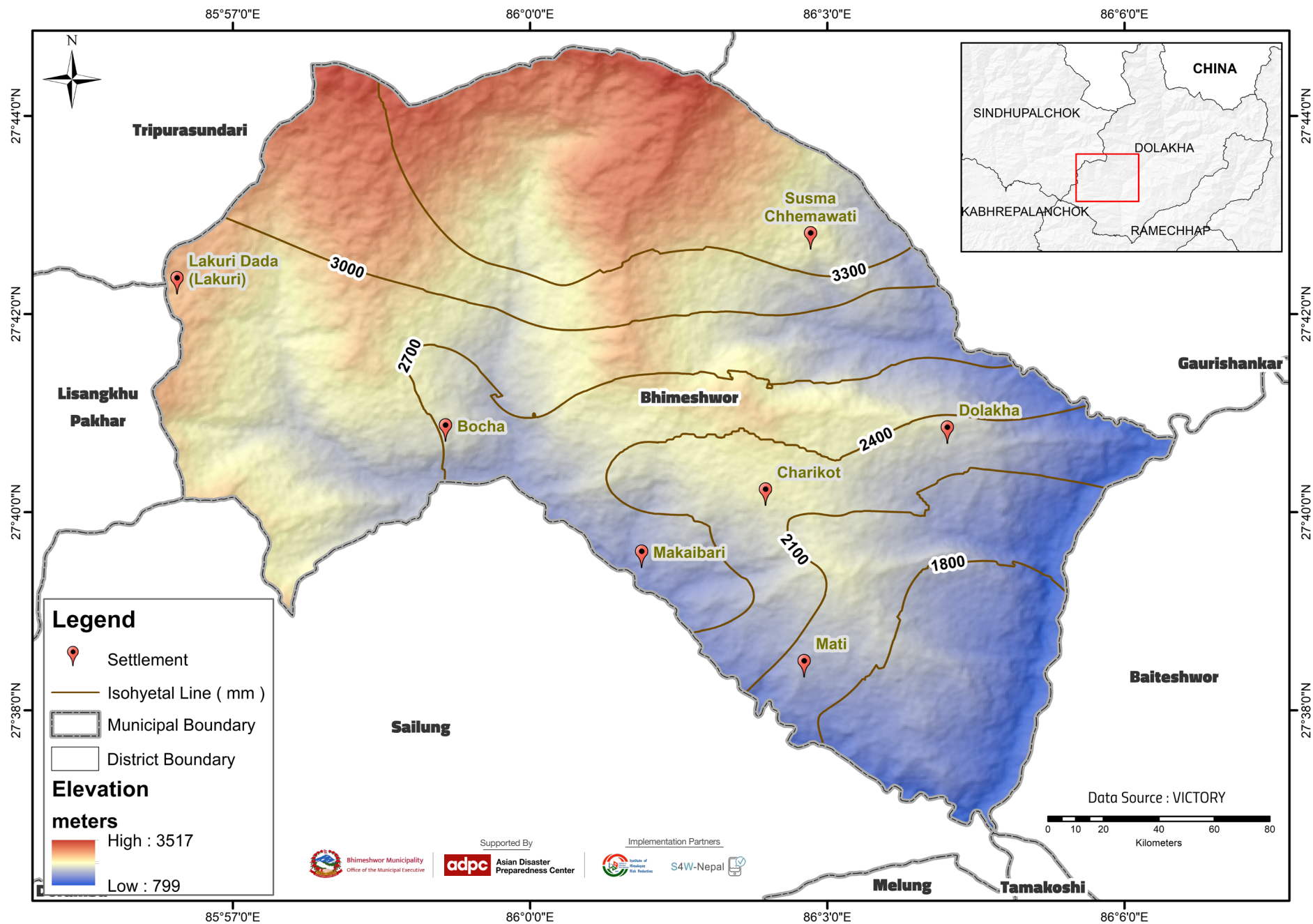




Isohyetal Map (June - September 2024)

3.4 Monsoonal Accumulated Rainfall in Bhimeshwor (June to October 2024)

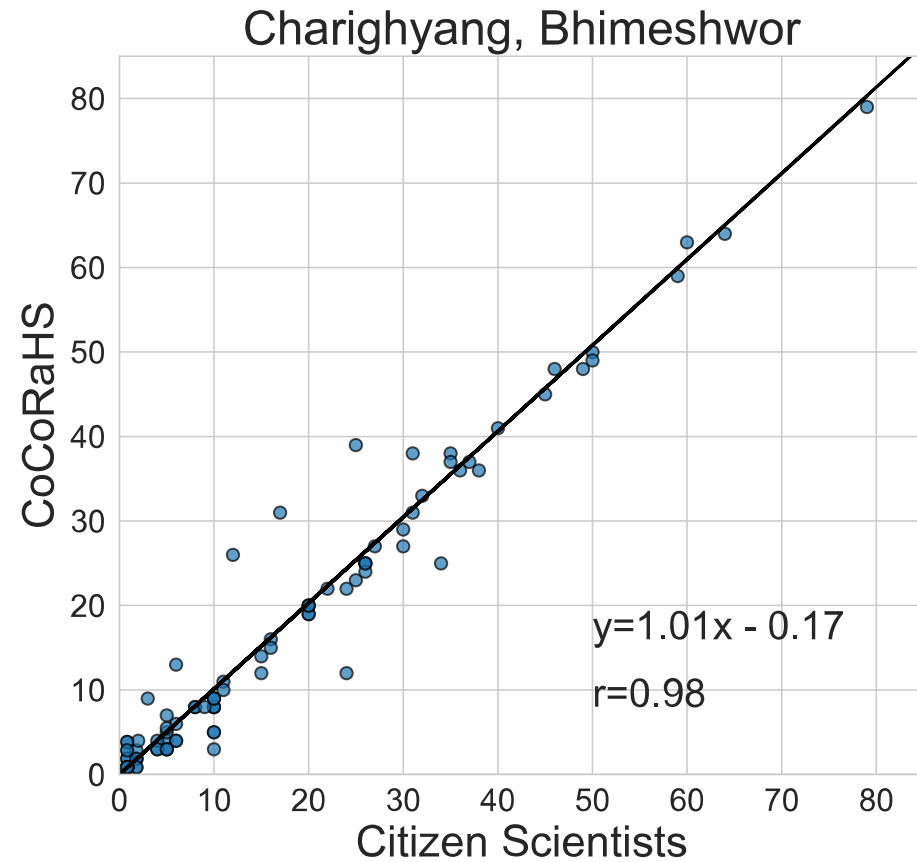
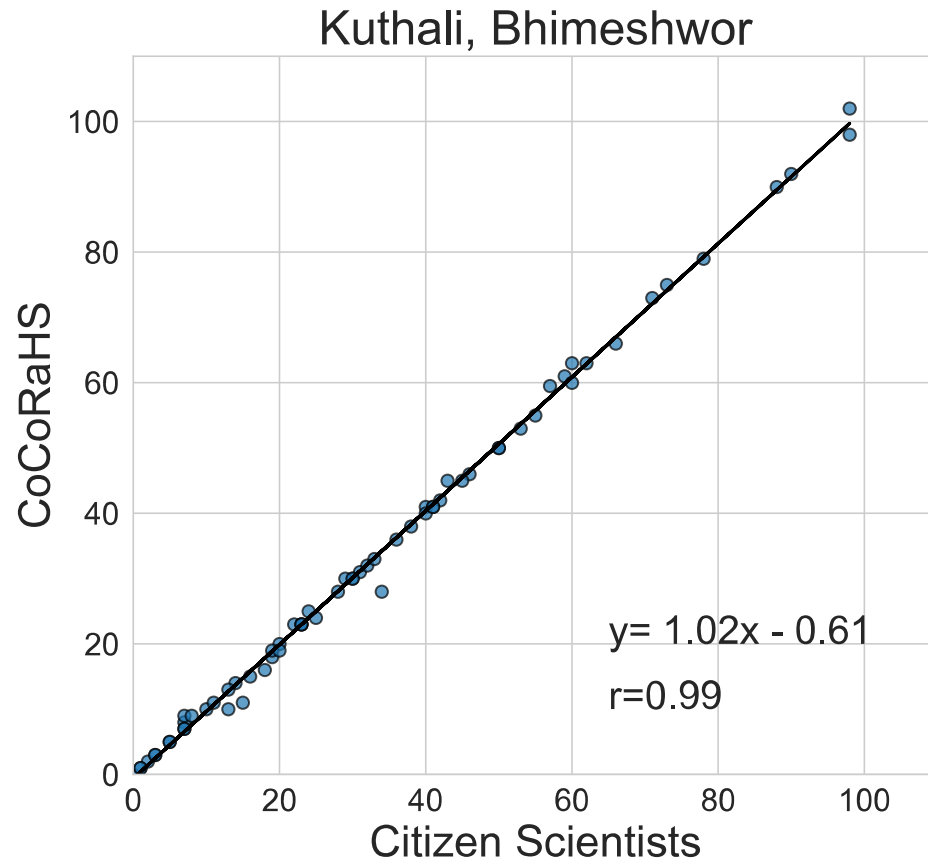




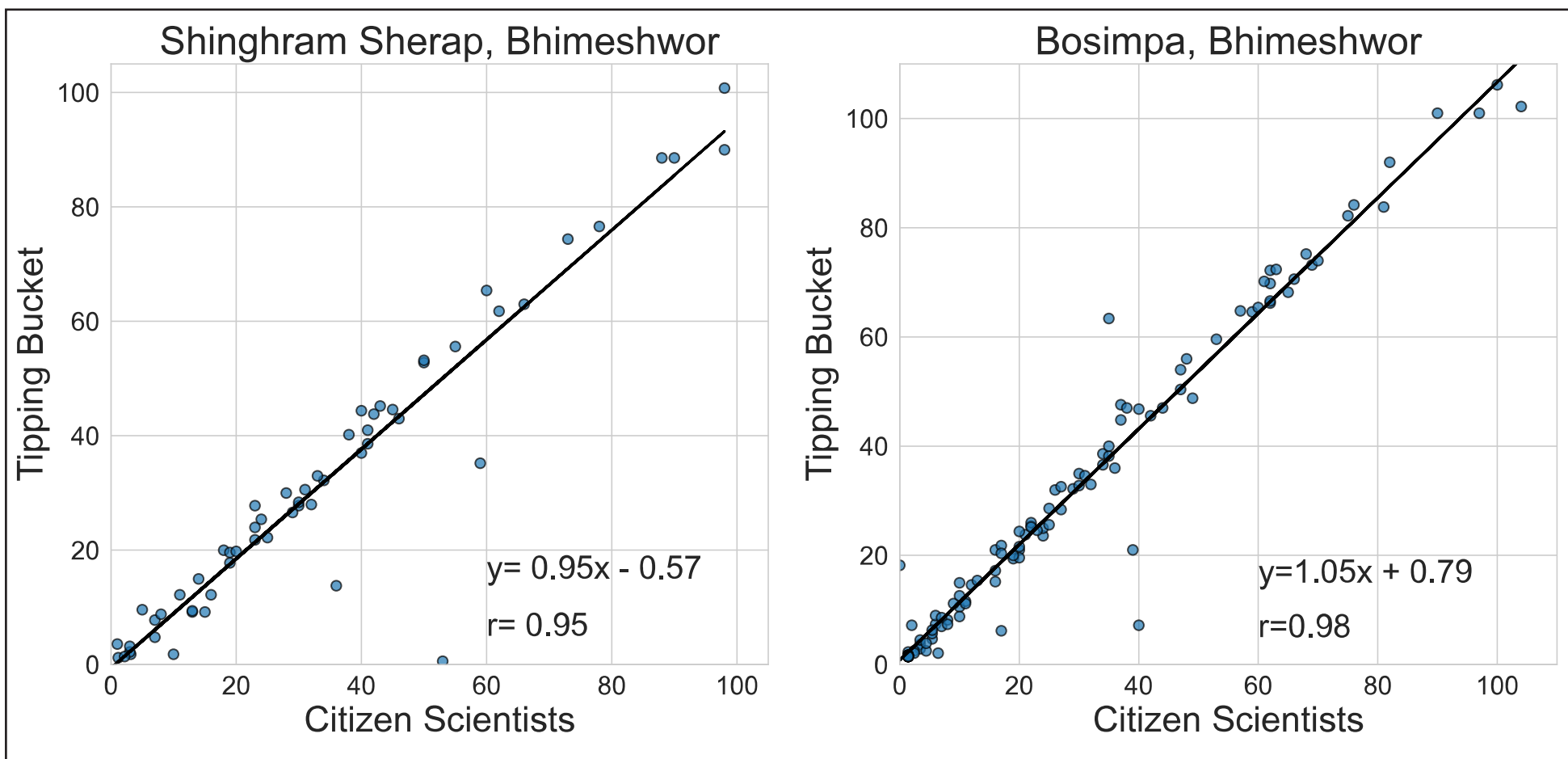
Isohyetal Map (June- October 2024)

3.5 Correlation plot

Correlation analysis of Rainfall (Citizen Scientists v/s CoCoRaHS stations):



Correlation analysis of Rainfall (Tipping Bucket v/s Citizen Scientists)



4. Impact-based Forecasting

The IBF bulletins were issued to Bhimeshwor municipality, and evaluated to check whether the predicted weather matched the observed conditions. This included examining whether the rainfall occurred in the forecasted intensity and the duration mentioned and also with the expected impacts. The verification of the issued IBF bulletins was carried out to assess their accuracy and reliability. Each IBF bulletin was evaluated based on whether the forecast matched the actual weather condition of the issued areas. The forecasts were categorized as Good, Underestimated and Overestimated.

Effective communication is at the core of the IBF project, ensuring timely dissemination of forecasts and warnings to the stakeholders and communities. Various channels were utilized to disseminate IBF bulletins and forecast information like; through email, WhatsApp groups, telephone and sms.

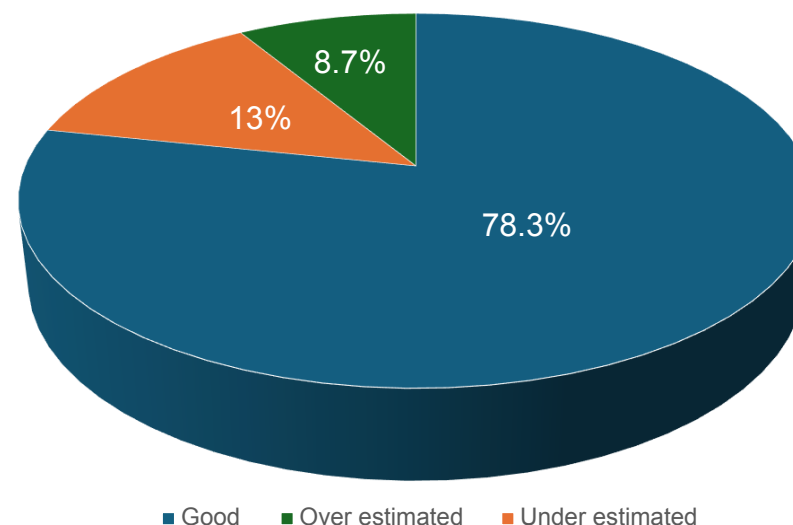
Email list was created after the conducting workshop which included Chief District Officers (CDO), Mayor, deputy mayor, LEOC, MEOC, Information Technology personnel, ward chairperson, stakeholders and employees and focal persons from each municipality. Similarly, WhatsApp groups were also created to facilitate real time information.

For Bhimeshwor Municipality, the communication and forecasting efforts from June to October included the following:

- Daily Forecasts: Issued for 6 months
- IBF Bulletins: A total of 23 bulletins issued
- Monsoon Special Bulletins: 9 special bulletins shared
- SMS Alerts: 2 messages sent via SMS

This multi-channel communication approach ensured that critical weather information reached the appropriate authorities and communities in a timely and effective manner.

Number of IBF Issued Bulletins in Bhimeshwor 2024



ANNEX 1: WARD-WISE RAINFALL FREQUENCY DISTRIBUTION IN 2024

Month	Rainfall Range	Ward 1	Ward 2	Ward3	Ward4	Ward5	Ward6	Ward7	Ward8	Ward9
June	No Rainfall (0 mm)	4	4	0	4	7	3	2	3	4
	Less than 10 mm	10	17	18	17	14	17	13	14	11
	10-50 mm	14	9	12	9	9	10	13	12	15
	50-100 mm	2	0	0	0	0	0	2	1	0
	100-200 mm	0	0	0	0	0	0	0	0	0
	More than 200 mm	0	0	0	0	0	0	0	0	0
July	No Rainfall (0 mm)	0	0	0	0	0	0	0	0	0
	Less than 10 mm	3	8	9	11	7	7	4	5	4
	10-50 mm	17	20	18	19	23	20	19	18	20
	50-100 mm	10	3	4	1	1	4	8	8	7
	100-200 mm	1	0	0	0	0	0	0	0	0
	More than 200 mm	0	0	0	0	0	0	0	0	0
August	No Rainfall (0 mm)		1	0	1	0	0	0	2	2
	Less than 10 mm	10	13	15	15	14	14	12	7	2
	10-50 mm	18	15	14	15	17	15	18	21	24
	50-100 mm	3	2	2	0	0	2	1	1	3
	100-200 mm	0	0	0	0	0	0	0	0	0
	More than 200 mm	0	0	0	0	0	0	0	0	0
September	No Rainfall (0 mm)	1	2	3	5	5	2	3	3	3
	Less than 10 mm	11	15	15	18	15	14	8	7	12
	10-50 mm	15	12	11	6	9	13	17	16	11
	50-100 mm	2	0	0	0	0	0	1	3	3
	100-200 mm	1	1	1	1	1	1	1	1	1
	More than 200 mm	0	0	0	0	0	0	0	0	0
October	No Rainfall (0 mm)	15	21	20	24	22	20	15	16	22
	Less than 10 mm	12	9	10	7	9	10	13	11	4
	10-50 mm	3	1	1	0	0	1	3	4	5
	50-100 mm	1	0	0	0	0	0	0	0	0
	100-200 mm	0	0	0	0	0	0	0	0	0
	More than 200 mm	0	0	0	0	0	0	0	0	0

ANNEX 2: MONSOONAL ACCUMULATED RAINFALL IN BHIMESHWOR (JUNE TO SEPTEMBER 2024)

Ward	Rainfall, mm
1	3180.817
2	2029.565
3	2153.550
4	1656.706
5	1718.774
6	2116.064
7	2914.462
8	3109.093
9	2857.287

ANNEX 3: MONSOONAL ACCUMULATED RAINFALL IN BHIMESHWOR (JUNE TO OCTOBER 2024)

Ward	Rainfall, mm
1	3309.973
2	2067.992
3	2185.832
4	1666.725
5	1743.689
6	2158.555
7	2997.216
8	3214.807
9	2971.241

ANNEX 4: CONTACT INFORMATION

Name	Designation	Section	Email	Phone
Ishwor Narayan Manandhar	Mayor	Bhimeshwor Municipality	mayor@bhimeshwormun.gov.np	9843588352
Kamala Basnet	Deputy Mayor	Bhimeshwor Municipality	kamalabasnet19@gmail.com, deputymayorbm@gmail.com	9844060271
Madhav Thami	Ward Chairman	Ward No. 1		9844238060
Stalin Shrestha	Ward Chairman	Ward No. 2	biraj7stha@gmail.com	9864004329
Hari Sharan Shiwakoti	Ward Chairman	Ward No. 3		9844304545
Taranath Chaulagain	Ward Chairman	Ward No. 4	taranath1971@gmail.com	9844465200
Basu Shrestha	Ward Chairman	Ward No. 5		9851000981
Nabin Kumar Lama	Ward Chairman	Ward No. 6	nabinlama.bmp6@gmail.com	9851153774
Binod Tamang	Ward Chairman	Ward No. 7		9840400997
Kaji Budhathoki	Ward Chairman	Ward No. 8		9844185614
Himal Shrestha	Ward Chairman	Ward No. 9		9862406088
Bishaksen Dhakal	Chief Administrative Officer	Bhimeshwor Municipality	bishudhakal@gmail.com	9854046111
Suresh Raut	Engineer, DRR Focal Person	Planning	rtsuresh33@gmail.com	9851002074
Arjun Bahadur Karki	Information Officer	Education Section	karkiarjundolakha@gmail.com	9844307576

ANNEX 5: EMERGENCY CONTACTS DURING DISASTER

S.N.	Government Office Name	Contact Number	Disaster Focal Person	Mobile Number
1	District Administration Office	421102	Komal Prasad Dhamala	9854071777
2	District Police Office	421333	Deepak Khadka	9854075555
3	District Health Office	421188	Uttam Raj Khanal	985402590
4	Nepal Electricity Authority	421773	Meghnath Dhakal	9854045773
5	Division Road Office	421120	Arjun Suwal	9854045163
6	Nepal Telecom	421111	Suryaman Koju	9854064333
7	Nepal Army	421002	Sanjiv Singh Sijapati	9855015052
8	Armed Police Force	421593	Suraj Kumar Karki	9851272536
9	Education Development and Coordination Unit	421105	Shankar Babu Shrestha	9854045205
10	District Livestock Service Office	421115	Palat Chaudhary	9854045115
11	Drinking Water and Sanitation Office	421175	Kush Budhathoki	9854045133
12	District Coordination Committee Office	421142	Ram Prasad Pokharel	9854055222
13	National Investigation District Office	421106	Arun Karki	9851160343
14	Livestock and Poultry Memorial Hospital	421125		
15	Cottage and Small Industries Office	421126	Min Bahadur Lama	9854045126

Emergency Contact details

Offices	Contact Number
District Administration Office	049-421104, 9851322333
District Police Office	049-421431, 049-421199, 9854090182
Armed Police Force	049-421593, 9851272537
District Emergency Operations Center	049-421990
Local Emergency Operations Center (Toll-Free)	16604942001
Traffic Police	9854090034
Nepal Red Cross Society (District Branch)	049-412019
Dolakha Community Hospital (Ambulance)	049-421821, 9841179507
Chhorolpa General Hospital (Ambulance)	049-421505, 9861569486, 9849229670
Charikot Hospital (Ambulance)	049-421125, 9864234103
Nepal Electricity Authority (No Light)	9854045773, 9844115143
Fire Brigade	049-590101, 9851207101



भीमेश्वर नगरपालिका
नगर कार्यपालिकाको कार्यालय

२०७३

चरिकोट, दोलखा

बागमती प्रदेश, नेपाल

ANNEX 6: LOCAL AND WARD DISASTER MANAGEMENT COMMITTEE (LDMC AND WDMC) MEMBERS

Name	Position	Organization	Phone Number	Email	Committe
Ishwor Narayan Manandhar	Mayor	Municipal	9843588352	mayor@bhimeshwormun.gov.np	LDMC
Kamala Basnet	Deputy Mayor	Municipal	9844060271	kamalabasnet19@gmail.com	LDMC
Bishaksen Dhakal	Chief Administrative Officer	Municipal	9854046111	bishudhakal@gmail.com	LDMC
Suresh Raut	Engineer	Municipal	9854045074	rtsuresh33@gmail.com	LDMC
Thir Bahadur Khadka	MEOC focal person	Municipal	9844427660	thirkhadka2076@gmail.com	LDMC
Madhav Thami	Ward 1 Chairperson	Municipal	9741094129		WDMC
Stalin Shrestha	Ward 2 Chairperson	Municipal	9864004329	biraj7stha@gmail.com	WDMC
Hari Sharan Shiwakoti	Ward 3 Chairperson	Municipal	9844304545		WDMC
Tara Nath Chaulagain	Ward 4 Chairperson	Municipal	9844465200	taranath1971@gmail.com	WDMC
Bashu Shrestha	Ward 5 Chairperson	Municipal	9851000981		WDMC
Nabin Kumar Lama	Ward 6 Chairperson	Municipal	9851153774	nabinlama.bmp6@gmail.com	WDMC
Binod Tamang	Ward 7 Chairperson	Municipal	9840400997		WDMC
Kaji Budhathoki	Ward 8 Chairperson	Municipal	9841887760		WDMC
Himal Shrestha	Ward 9 Chairperson	Municipal	9862406088		WDMC

GLOSSARY OF TERMS

Anticipatory Planning: A proactive approach to disaster management that involves planning and preparing in advance to reduce the impact of potential hazards.

Citizen Scientists: Community members trained to collect and report data on environmental parameters such as rainfall, floods, and landslides to support disaster preparedness and risk reduction efforts.

Early Warning System (EWS): A technology or process used to provide timely and effective information to mitigate the impacts of hazards, such as floods or landslides.

GIS (Geographic Information Systems): A system used to capture, store, analyze, and manage spatial or geographic data for mapping and decision-making.

JOSM (Java OpenStreetMap Editor): A software tool used for editing and adding geographic data to OpenStreetMap, often used in mapping projects.

Landslide Inventory: A database or collection of data documenting landslides, including their location, cause, impact, and frequency, to support risk assessment and management.

Mapathon: An event or initiative where participants contribute to mapping geographic features using digital tools, often for disaster preparedness or humanitarian purposes.

OSM (OpenStreetMap): A collaborative, open-source mapping platform where users can contribute and edit geographic data.

Rangeland: Land used for grazing livestock, typically comprising natural vegetation and covering a significant portion of Bhimeshwor Municipality.

Resilience: The capacity of a community, system, or structure to recover quickly from disruptions such as natural disasters.

Sensitization Workshop: Interactive sessions aimed at raising awareness and engaging stakeholders in identifying risks, understanding projects, and building local capacity.

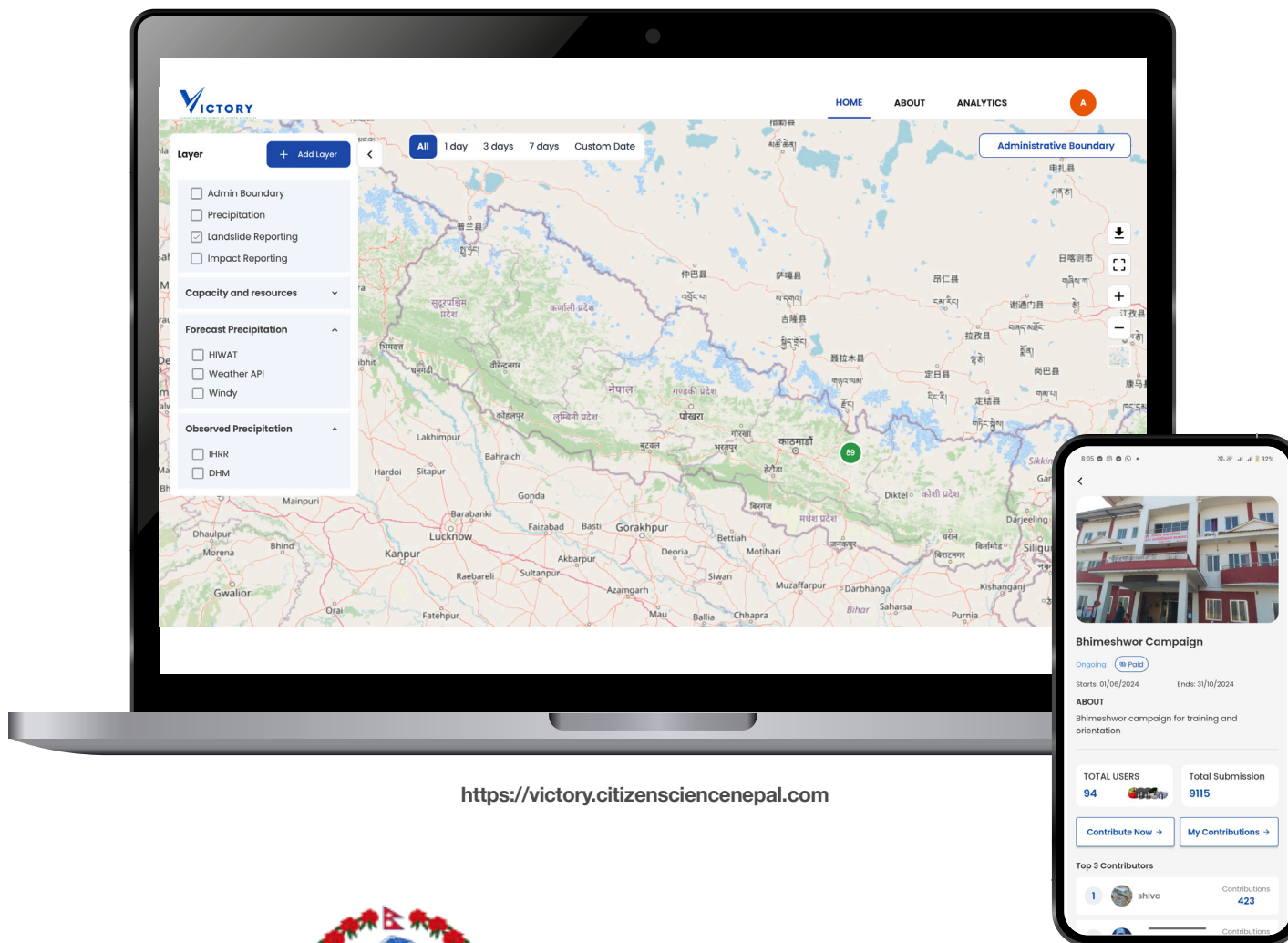
Sub-Watershed: A smaller hydrological unit within a larger watershed, consisting of streams and tributaries that contribute to the main water system.

Thiessen Polygon: A geometrical method used to divide an area into regions based on the proximity to a set of points, often applied in spatial data analysis like rainfall distribution.

Vulnerable Communities: Groups of people at higher risk due to socioeconomic, geographic, or environmental factors, often prioritized in disaster preparedness and risk reduction projects.

Watershed: An area of land that channels rainfall and snowmelt into rivers, streams, or lakes, playing a crucial role in hydrology and resource management.

Ward Sensitization: A community-level engagement activity where information about risks, project objectives, and citizen participation is shared at the ward level to enhance local involvement and capacity.



<https://victory.citizensciencenepal.com>



Bhimeshwar Municipality

Office of the Municipal Executive

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