SIMPLIFIED EARLY ACTION PROTOCOL

Nepal | Urban Heatwave

Kiosk and free drinking water and electrolyte distribution at Siddharthanagar - June 16, 2024 (Photo Credit: Nepal Red Cross Society, Rupandehi District Chapter)

sEAP №: **sEAP2025NP02**	Total Budget **CHF 219,733**	Readiness: **CHF 76,862**	Prepositioning: **CHF 62,024**	Early Action: **CHF 80,847**
People to be assisted: **8000 people (direct)** **2000 people (indirect)**	sEAP approved: **28/11/2025**	sEAP timeframe: **2 Years**	sEAP lead time: **3 days**	Operational timeframe: **3 months**
Prioritized geographical areas: Heat Hotspots Wards and Urban areas of Biratnagar Metropolitan, Nepalgunj Sub metropolitan, Dhangadi Sub metropolitan and Siddharthanagar Municipality				

RISK ANALYSIS AND EARLY ACTION SELECTION

Prioritized hazard and its historical impact.

Heatwaves have become more intense, frequent, and prolonged worldwide, with projections indicating further worsening as global warming accelerates. These extreme heat events are contributing to rising rates of illness and death, along with significant economic losses globally. South Asia, in particular, is experiencing severe consequences of extreme heat, with urban areas being especially at risk. Rapid urbanization marked by expanding concrete infrastructure, deforestation, the loss of water bodies, increasing impervious surfaces, diverse economic activities, and the broader effects of climate change is intensifying the urban heat island effect, making cities even more vulnerable to deadly heatwaves.

Nepal is also facing an increasing number of days where temperature exceeds 35 degrees Celsius. The southern Terai region is particularly susceptible to extreme heat problems where the maximum temperature can reach up to 45°C. Due to its subtropical conditions, the Terai region is known for scorching heat and extremely humid weather, contributing to the elevated temperatures. The Terai zone is also situated at a low altitude, resulting in high solar radiation and limited air circulation throughout the lowland region. According to the Ministry of Home Affairs, 25 heatwaves occurred between 2002 and 2010, with the most significant occurring in 2009 and 2010, mostly in the Terai region. Twenty-five people lost their lives and 280 people were affected due to the heatwaves between 2002 and 2010[1]. Under a high emission scenario heat-related deaths in the elderly (65+ years) are projected to increase to about 53 deaths per 100,000 by 2080 compared to the estimated baseline of approximately 4 deaths per 100,000 annually between 1961 and 1990[2]. The trends of hot days and hot nights are also increasing significantly in the majority of districts of Nepal, increasing the exposure of the population in most parts of the country to the hotter days and nights[3].

Heatwaves pose significant risks to public health, agriculture, and water resources in the region. According to World Health Organization (WHO), the heatwaves have been linked to a wide range of adverse health effects, including heart attacks, kidney disease, cardiorespiratory diseases, decreased mental wellbeing, and even death due to heat exhaustion and heat stroke including the deteriorating quality of air and water[4]. Evidence suggests the fact that there is an increase in cases of epidemics and water-borne diseases with the rise in temperature. Extreme heat can also be linked with far-reaching economic impacts – decrease in productivity of crops and livestock linked with inadequate irrigation, water-heat-borne diseases and pests. The extreme heat also causes a notable decrease in the efficiency and duration of work of people, especially in the fields, industries and outdoor settings which impact their income and overall economy of the place. The education system is not just impacted by the heat-related health issues of children/students, but also the quality of education deteriorates. Increased electricity and water demand for cooling can lead to power and water shortages. The level of impacts of heatwaves depends on the socio-economic status, socio-cultural norms, access to resources, poverty as well as gender. specific groups are facing exacerbated risks due to their socio-economic vulnerabilities, including people living in urban slums, outdoor workers, pregnant and lactating women, people with pre-existing health issues, elderly, and children/students.

"While there is limited documentation on heatwaves in Nepal, studies have highlighted their substantial effects on health and livelihoods. A time-series analysis conducted in the Terai region reported temperature-related increases in hospital admissions for several climate-sensitive diseases. Specifically, per 1°C rise in average temperature, hospitalizations increased by 12.1 per cent for malaria, 8.9 per cent for enteric fever, 8.1 per cent for encephalitis, and 2.1 per cent for leishmaniasis."[5]. Similarly, a 2020 research study found that, on average,

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1 Dhimal, M., Nepal, B., Bista, B., Neupane, T., Dahal, S., Pandey, A. R., & Jha, A. K. (2018). Assessing Trends of Heat Waves and Perception of People about Health Risks of Heat Wave in Nepal. Kathmandu: Nepal Health Research Council. Available at: https://nhrc.gov.np/wp-content/uploads/2019/04/Assessing-Trends-of-Heat-Waves-CTP.pdf

[2] WHO& UNFCCC. (2015). CLIMATE AND HEALTH COUNTRY PROFILE – 2015, NEPAL Available at: https://iris.who.int/bitstream/handle/10665/246135/WHO-FWC-PHE-EPE-15.27-eng.pdf?utm_source=chatgpt.com

[3] Shrestha, U. B., Gautam, S., & Bawa, K. S. (2019). Climate change and its impacts on ecosystems and livelihoods in the Himalayas. ICIMOD. Available at: https://www.icimod.org/wp-content/uploads/2022/08/UttamBabuShresthPPT_compressed.pdf

[4] World Health Organisation (WHO). (2024). Heath and Health. Available at https://www.who.int/news-room/fact-sheets/detail/climate-change-heat-and-health

[5] Shrestha, I. L., Gurung, Y., Dhimal, M., & Pandey, A. R. (2018). Effect of temperature variation on hospital admissions of climate-sensitive diseases in Nepal. Nepal Journal of Science and Technology, 17(1), 123–130. Available at: https://www.nepjol.info/index.php/NJS/article/view/21152/17329

households in Nepal stay inside their homes for 3.13 hours per day (range: 0–4 hours) to protect themselves from both extreme heat and extreme cold during the daytime. This coping behavior reduces working hours and contributes to an estimated loss of at least two months of productive time each year[6].

The impact of heat waves varies unevenly based on location and living environment (urban vs. rural) and altitude. The issues are exacerbated by inadequate planning within the new urban centers, particularly in the Terai belt. The National Statistics Office (NSO) indicates that the urban population increased from 22.31 per cent to 27.07 per cent between the 2011 and 2021[7]. This is particularly true for the districts of Terai, where 54 per cent of the country's population resides, with 85 per cent living in core cities and semi-urban / urbanizing areas. Heatwave events along with dense population and ongoing urban development have increased risk and exacerbated the impact.

According to the study, 88 per cent of respondents reported a noticeable rise in both the intensity and duration of extreme heat over recent years. More than 70 per cent of individuals surveyed, particularly daily wage workers, street vendors, and the elderly, reported experiencing health impacts such as headaches, dehydration, and fatigue due to prolonged heat exposure. Despite these risks, awareness of protective behaviours remained low, and few respondents were aware of any institutional early warning systems or anticipatory measures specifically related to heat. The study also highlighted that while some individuals attempted to adjust their working hours or seek shade during peak heat, systemic support mechanisms—such as early warnings or heat-safe public spaces—were largely absent.[8]

Nepalgunj Sub-Metropolitan City which shares the border to the India, recent years, has been experiencing extreme heat events. In summer, the maximum temperature exceeds 40°C almost every year and humidity levels sometimes reach 80 percent[9]. Similar is the case for the Dhangadi Sub-metropolitan and the growing city of Siddharthanagar municipality, where the maximum summer temperatures had remained above 40°C every year, with temperatures sometimes soaring to 45°C in these cities. Biratnagar Metropolitan is consistently having temperatures above the average of 38.9°C, and in recent years, the temperatures are surpassing the 40°C. Annex 1 provides the analysis of annual maximum temperature across these cities. Additionally, rapid urbanization in these four cities has led to an increase in concrete infrastructure, the expansion of impervious surfaces, and a shift from agricultural activities to urban income-generating activities such as commerce and industry, all of which contribute to the heat island effect. As a result, these cities are facing heightened risks of heat waves.

Several news articles have highlighted the challenges and severe consequences faced by residents of these cities during heatwaves. For instance, in 2006, five people died from heatstroke in Dhangadi[10]. During heatwaves, schools often get closed, disrupting children's education. The rising temperatures make it difficult for students to concentrate and affect their mobility[11]. Hospitals in Terai cities report an increase in admissions for conditions such as fever, skin diseases, headaches and food poisoning[12]. Notably, the number of beds in Seti Hospital in Dhangadi increased from 21 to 38, as most wards and units are filled during the summer months due to heatwave-related illnesses[13]. In 2024, Bhim Hospital of Siddharthanagar also reported four deaths due to heat stroke in May 2024 (Bhim Hospital, 2024). The adverse effects of heatwaves are evident in symptoms such as pain, discomfort, fatigue, heat stress, heat cramps, and heat stroke. Likewise, waterborne diseases are more common during heat season, and the flow of such cases overburdens hospitals. Heatwaves also significantly impact daily workers' quality of life and earning capacity. This extreme heat affects vulnerable populations such

[6] Shrestha, A., Shrestha, S., Sharma, R., & van den Berg, M. (2020). Impact of climate extremes on time use and adaptive strategies among rural households in Nepal. IFPRI Discussion Paper 01955. Washington, DC: International Food Policy Research Institute (IFPRI). Available at:https://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/134009/filename/134220.pdf

[7] National Statistics Office (NSO). (2024). Population and Housing Census 2021: Urban Population and Urbanization Trends in Nepal. Government of Nepal. https://censusnepal.cbs.gov.np/

[8] Joshi, A. (2022). *Heat Perceptions Research in Dhangadhi, Nepal*. Nepal Red Cross Society and Red Cross Red Crescent Climate Centre. https://preparecenter.org/wp-content/uploads/2022/12/Nepal-Heat-Perceptions-Research-by-A.Joshi-2022.pdf

[9] Subedi, A., Khan, R., Hassan, A., & Hogesteeger, S. (2022). Identification of heat threshold and heat hotspots in Nepalgunj, Nepal. Red Cross Red Crescent Climate Centre. Available at: https://ghhin.org/resources/identification-of-heat-threshold-and-heat-hotspots-in-nepalgunj-nepal/

[10] The Himalayan Post. (2007). Dhangadi Reeling Under Heatwave. Available at: https://bit.ly/4fgROFg

[11] The Himalayan Post. (2019). Excessive Heat Leads to Closing Down of School in Dhangadi. Available at: https://bit.ly/3ZQB9n

[12] The Kathmandu Post. (2023). Heat wave scorches central and eastern Tarai. The Kat. Available at: https://bit.ly/3RswuDz

[13] The Kathmandu Post. (2024). Scorching Heatwaves in Western Terai makes Life Difficulut. Available at: https://bit.ly/4ixmULF

as outdoor workers (street vendors, auto drivers), the elderly, infants, pedestrians, and schoolchildren in these Terai cities[14][15].

Explain which risks have been selected for this protocol and why

The research, comprising multiple studies and a perception survey conducted in target Terai cities of Nepal, underscores the substantial risks posed by heat waves, including heightened threats to health and lives as well as significant income loss. The findings reveal the severe impact of extreme heat on vulnerable populations, leading to increased health risks and diminished economic productivity. These insights emphasize the urgent need for targeted interventions to safeguard public health and enhance economic resilience in the face of rising temperatures.

1. Increased risks on health and lives

The Terai region of Nepal has experienced record-high temperatures exceeding 40°C in cities like Nepalgunj, Siddharthanagar, Dhangadi and Biratnagar, with extreme heat and heatwaves now becoming more frequent and intense. These extreme conditions significantly affect human health, particularly among vulnerable populations such as outdoor workers, children, school students, the elderly, and those with pre-existing health conditions.

A heat perception study conducted by the Nepal Red Cross Society, with support from the Red Cross Red Crescent Climate Centre in Dhangadi (2024), identified health related issues as the primary consequences of extreme heat and heatwaves, with 86.7 per cent of respondents reporting health impacts as major concern. These included symptoms such as sleep disorders, headaches, excessive sweating, anxiety, dizziness, dehydration, dry skin or rashes, muscle cramps, hyperthermia, vomiting, rapid pulse, difficulty breathing, unconsciousness, seizures, fatigue, and even cases of heatstroke and sunstroke. Similar health-related consequences were also reported in a 2020 study by the School of Health and Allied Sciences, Faculty of Health Sciences, Pokhara University. Extreme temperatures have been found to exacerbate pre-existing cardiovascular and respiratory conditions, while chronic illnesses can worsen with prolonged heat exposure. Heatstroke, in particular, can be life-threatening and often requires immediate medical intervention.

The risk of dehydration-related illnesses, such as diarrheal diseases and urinary tract infections, significantly increases during periods of extreme heat. Hospitals in the Terai region, including Lumbini Provincial Hospital, have reported daily spikes in diarrheal cases during heatwave conditions[16]. Prolonged exposure to heat and related stressors can exacerbate mental health issues, including anxiety and depression, and may also lead to increased mortality rate, especially among the most vulnerable populations. In addition, Prolonged heat waves may deplete water sources, affecting drinking water availability and sanitation, which in turn increases the risk of waterborne diseases.

There are daily cases of 35 to 40 heat related health patients during extreme heat season in Bheri Zonal Hospital, Nepalgunj[17]. Similarly, in the growing city like Siddharthanagar, the rise in patients experiencing symptoms such as fever, skin diseases, urinary tract infections, and headaches has been reportedly high during the extreme heat days. In the year 2024, Bhim Hospital of Siddharthanagar has reported four deaths due to heat stroke. A study in Nepalgunj reveals that the outdoor workers and those working over 8 hours are at higher risk with heat related symptoms[18]. Due to longer periods of high temperatures, most outdoor workers in terai areas suffer more health problems during the heat season. Children under 5 years old, school students, elderly and people with disabilities suffer disproportionately during heatwaves. Individuals with chronic illnesses like heart disease, diabetes, or respiratory conditions are at increased risk of complications it particularly dangerous for those with long-term health conditions.

[14] Rising Nepal Daily. (2023). Heatwave declared as temperature tops 40C in Terai. Rising Nepal Daily. Available at: https://bit.ly/3VR7Krv

[15] The Rising Nepal. (2024). Respite from heat likely from coming Monday. The Rising Nepal. Available at: https://bit.ly/3XoSbbs

[16] https://kathmandupost.com/national/2024/04/26/sweltering-heat-causes-distress-across-tarai-1714095796

[17] Rastriya Samachar Samiti. (2016). Heat waves disrupt normal life in Nepalgunj. The Himalayan Times. Retrieved from https://bit.ly/3fR6Ohh

[18] Subedi, A., Khan, R., Hassan, A., & Hogesteeger, S. (2022). Identification of heat threshold and heat hotspots in Nepalgunj, Nepal. Red Cross Red Crescent Climate Centre. Available at: https://ghhin.org/resources/identification-of-heat-threshold-and-heat-hotspots-in-nepalgunj-nepal/

2. Loss of Income

The extreme heat in Nepal's Terai region poses a significant risk to livelihood which impacts the income generation of outdoor workers – rickshaw drivers, street vendors, daily wage laborers and farmers. The prolonged high temperature reduces their capacity to work effectively, leading to lower working hours causing reduced earnings, especially for daily wage laborers and informal workers who depend on excessive outdoor physical activities. A heat perception study in Dhangadi also indicates the income sources of all vulnerable groups like outdoor workers, informal settlers and pregnant/lactating women are directly affected by extreme heat. In the survey, most farmers reported include the housewives (women) reported a loss of working hours of 2-7 hours per day during extreme heat period. The outdoor workers such as construction workers, street vendors, cab drivers etc. who are mostly informally employed have been losing up to 3 hours of productive work per day due to the heat. The prolonged heat makes them more susceptible to heat-related illnesses, further affecting their capacity to work. Missing even one day of work due to heat-related challenges can have immediate consequences for their ability to afford their subsistence.

A similar survey in Nepalgunj previously also found that laborers working in agriculture and construction faced significant income loss during heatwaves due to reduced work hours and productivity. The survey among the like rickshaw pullers and auto drivers revealed loss of more than 20 per cent of their income in case of reduced working hours during peak heatwave periods[19]. The income of street vendors is affected due to decreased sales caused by shortening of their working hours and reduced customer turnout during those extreme heat days.

Workers in the informal economy such as street vendors, daily laborers and rickshaw drivers typically do not have resources to adapt to extreme heat, such as proper hydration facilities, protective clothing and cooling systems. They also lack access to health insurance, paid sick leave, or unemployment benefits. When extreme heat reduces their ability to work or causes health issues, they lose income causing additional financial burden and without any safety net to fall back on.

Describe the selected early actions and explain how they will address the risks and lead to the intended outcome

The proposed early actions are selected to address the aforementioned impacts in targeted four cities. The actions are also identified based on the existing NRCS capacity, resources, and previous experience in implementing heat action related initiatives in these cities. Also, the proposed early actions are well aligned with the heat action plan (HAP) developed by these city authorities with support from Nepal Red Cross Society and builds on the findings from the heat perception studies and other community surveys across these cities. Overall , these actions are planned to mitigate the impact of heat risk in the lives and livelihoods of vulnerable people across these four cities.

1. Disseminate Heatwave Forecast and Early Warning Messages

Forecast information, including the expected duration and severity of heatwave risks as issued in the special bulletin of the Department of Hydrology and Meteorology (DHM), will be widely disseminated. Communication channels such as loudspeakers, FM radio broadcasts, and social media platforms will be utilized to ensure maximum outreach. Forecasts will be presented in clear, accessible, and local languages, highlighting key details such as predicted temperature highs, heatwave duration, and recommended safety measures. Early warning messages are a critical tool for minimizing the impacts of heatwaves. During the readiness phase of the heat season, Information, Education, and Communication (IEC) materials—such as brochures and pamphlets—will be developed in collaboration with respective municipalities. Public Service Announcements (PSAs), both audio and visual, will also be created to enhance community preparedness. These messages will provide practical guidance on identifying symptoms of heat-related illnesses, the importance of staying hydrated, and tips for staying cool such as avoiding strenuous activity during peak heat hours. The materials will be tailored to reach specific vulnerable groups, including outdoor workers, school children, residents in heat hotspots, individuals with pre-

[19] Subedi, A., Khan, R., Hassan, A., & Hogesteeger, S. (2022). Identification of heat threshold and heat hotspots in Nepalgunj, Nepal. Red Cross Red Crescent Climate Centre. Available at: https://ghhin.org/resources/identification-of-heat-threshold-and-heat-hotspots-in-nepalgunj-nepal/

existing medical conditions, the elderly, pregnant or lactating women, people with disabilities, and street dwellers. Designed to be visually engaging and easy to understand, all materials will be delivered in the local language (Nepali, Maithili, Awadhi, Tharu). All this development process will go through development, community validation as well as ensuring consent of the local Government.

All message development will be coordinated through inter-sectoral coordination to ensure inclusive and technically sound IEC development. For this heatwave sEAP, Reference will be taken from the already published IEC materials by The Ministry of Health and Population (MoHP) which will ensure the medical accuracy, symptom recognition, and health risk communication. The Department of Hydrology and Meteorology (DHM) under the Ministry of Energy, Water Resources and Irrigation will support content alignment with heat forecast and alert language. National Disaster Risk Reduction and Management Authority (NDRRMA) under Ministry of Home Affairs will support the coordination and risk reduction focused messaging. NRCS will also work with municipal DRR committees, local health posts and communities to ensure the validation of messaging.

Dissemination will be supported by Nepal Red Cross Society (NRCS) volunteers and will take place at strategic public locations including water distribution points, shaded rest areas, and community gathering spots. Volunteers will also conduct household visits to reach targeted populations directly. Timely delivery of heat-related warnings empowers communities to take preventive measures, protecting themselves and their families from serious health effects such as heatstroke. Targeted populations can make informed decisions, such as adjusting work hours, scheduling outdoor activities during cooler parts of the day, and ensuring access to shade and hydration. Furthermore, effective and multilingual communication of forecasts and warnings across various media platforms in target cities can significantly reduce the health impacts of heatwaves.

2. Storage and distribution of safe drinking water and electrolytes

Access of safe drinking water is critical during the time of heat wave because dehydration can cause the several health complications to the individual. Safe drinking water and electrolytes will be served during the peak hour from the water distribution points in different strategic locations (*high risk/ hot spot areas like market and areas of public gatherings)*. Furthermore, electrolyte solutions, which help to replenish essential minerals lost through sweat during extreme heat, will be made available alongside drinking water, particularly for outdoor workers: street vendor, rikshaw driver and labour.

Adequate hydration with the electrolyte can save the people from the heat related strokes and heat exhaustions. Sufficient water intake ensures that sweat can evaporate effectively, helping to lower body temperature and prevent overheating. Additionally, electrolytes replenish the lost minerals of body through sweats and maintain proper bodily functions.

3. Activation of Rapid Response Team (RRT)/ Medical Response Team (MRT) and Female Community Health Volunteers (FCHVs)

Teams composed of the trained medical personnel of health centre, FCHVs and Red Cross volunteers will be deployed quickly in hotspots focusing the targeted populations to disseminate the heat related heath symptoms, tracing the people with the symptoms of heat exhaustions and provide the health-related assistance. RRT/MRT and FCHVs will be trained during the readiness phase on heat impacts of health to provide basic first aid including identifying signs of heat stress, applying compresses. Trained teams will also ensure that individuals showing symptoms of heat-related illnesses (e.g., heat exhaustion, dehydration, fainting) are referred to the nearest health centre for immediate medical assistance. NRCS volunteers will assist the trained teams during their mobilization. Timely mobilizations of the RRT/MRT and FCHVs can ultimately save life, reduce heat related impacts and alleviates the strain on healthcare facilities during peak heat events. Referring to the health centre for the affected targeted populations can save their lives.

4. Distribution of multipurpose cash to the most vulnerable population

The early cash will target the households of outdoor workers such as rickshaw driver, street vendors, daily wage labours in the heat hotspot areas whose income could be temporarily halted or substantially reduced during the extreme heat events.

Selection Criteria for the MPC are as under -

i. Household size
ii. Socio-economic vulnerability

iii. Exposure to heat risks

Cash assistance in advance to the heat wave aims to reduce the loss of income and financial burden during heatwaves. Nepal Red Cross has an experience in the distribution of cash in advance of hazards during the monsoon of 2024 in western Nepal prior to the flood. Thus, NRCS has the capacity and can distribute the cash as early action. Cash support to these people will reduce the extra economic burden due to the visit to the health centre and other medical costs.

5. Distribution of hand fan, gamchha (local towel), cap, umbrella

Indigenous hand fan, gamchha, cap and umbrella are the locally available resources in Nepal made from the locally available materials and used to provide the relief from the heat during the extreme heat. Such relief materials help the people being exposed from the heat by helping them feel cool. Hand fans, gamchha and caps will be distributed to the outdoor workers. Hand fans can help reduce discomfort and heat stress, making it easier for individuals to cope with high temperatures. Promoting the use of hand fans can help raise awareness about the impacts of heat waves ultimately supporting the people to mitigate the health-related risks. These hand fans will be prepositioned during the readiness period and will be distributed together from the water distribution point, so that outdoor workers will have access to these fans.

6. Installation of cooling and misting system

The installation of coolers and misting systems, along with the establishment of shaded areas, is an effective coping strategy to alleviate the effects of heat waves in the heat hotspot and urban crowded areas. During the early phase of heat season, heat hotspots will be identified to determine the most advantageous locations for installing misting systems, coolers, and shaded spaces. Misting systems operate by releasing a fine spray of water that cools the air through evaporation, helping beneficiaries to cool off and manage the heat. Additionally, portable coolers will be set up in these locations, providing shaded areas where beneficiaries and residents can rest for a while and obtain the relief from the extreme heat. Shaded spaces can significantly lower outdoor temperatures, offering relief from direct sunlight. To procure the coolers and misting systems, a standby agreement will be established with the vendor for installation in the pre-identified areas alongside the shade. A similar agreement with catering services will facilitate the creation of shaded spaces. Furthermore, NRCS volunteers will be deployed to all shaded areas. shaded spaces, cooler systems, and misting systems collectively protect individuals from heat wave-related health risks by reducing exposure to extreme temperatures, providing controlled environments, and enhancing outdoor comfort.

EARLY ACTION INTERVENTION

Overall objective of the intervention	The Nepal Red Cross Society, in partnership with municipal authorities and communities, aims to implement early action measures before and during forecasted heatwaves to reduce the adverse impacts on health and livelihoods of vulnerable populations in the urban areas of Biratnagar, Nepalgunj, Siddharthanagar, and Dhangadi.
Potential geographical high-risk areas that the simplified EAP would target	The cities selected for this simplified EAP is based on the analysis on the frequency of high temperatures and higher humidity, and the reported heatwave related impacts across these cities. Additionally, all the above four cities have recently developed heatwave action plan (HAP) with support from Nepal Red Cross Society (NRCS). Moreover, NRCS in these cities have adequate capacities and previous experience on disaster preparedness and response, which enables them to respond to the needs of vulnerable people affected by the heatwaves in a timely and efficient manner. However, the sEAP will specifically target heat hot spots urban areas of Biratnagar Metropolitan, Dhangadi Sub-metropolitan, Nepalgunj Sub-metropolitan and Siddharthanagar Municipality. The heat action plan (HAP) that was developed with technical support from Red Cross Red Crescent Climate Centre have already identified following heat hotspot wards across these cities. Annex 2 provides the heat hotspot maps

extracted from heatwave action plan of these cities. Heat hotspots identify areas where action is needed due to significantly higher exposure to heat risks and vulnerability compared to surrounding regions. This increased risk arises from a combination of natural and human-made factors. The determination of these heat hotspots is based on three main components: exposure, vulnerability, and adaptive capacity. Each component includes specific indicators that have been identified thorough analysis and consultations with experts, as detailed out in each heatwave action plans (HAPs)

Target Cities	**Area**	**Population**	**Heat Hotspot Wards (High)**
Nepalgunj Sub-metropolitan	85.94 km²	166,258	13, 14, 19, 21 and 22
Dhangadi Sub-metropolitan	271.74 km²	198,792	3, 8, 17, 2, 5, 1, and 4
Siddharthanagar Municipality	36.03 km²	74,436	6, 11, 13, 10 and 7
Biratnagar Metropolitan City	58.48 km²	244,750	15, 6

The highly exposed five wards are 13, 14, 19, 21 and 22 of Nepalgunj have unplanned, rapid and high-density urban growth, low vegetation and water bodies in these areas, presence of industrial belt, airports and significantly busy highways (blacktopped road surface, intense vehicular movements).

The primary factors contributing to the presence of heat hotspots in the wards 1, 2, 4, and 5 of Dhangadi include high population density, extensive built-up areas, and busy highways with blacktop surfaces and heavy traffic. These wards represent the main urbanized sections of the Dhangadi city. Similarly, the heat hotspots in Ward 17 of Dhangadi are primarily associated with the presence of socioeconomically vulnerable populations who have limited capacity to cope with extreme heat

In Biratnagar, wards 15 and 6 are the main heat hotspots, due to its high population density, extensive built-up areas, busy highways with blacktopped road surfaces and heavy traffic, socioeconomically vulnerable populations that has low ability to cope with heat. The hotspot wards 7,6 and 13 of Siddharthanagar have very high population density and built-up area while the wards 10 and 11 show high land surface temperature, possibly due to the presence of the industrial regions.

Who will be assisted through this operation and what criteria will be used for their selection?

NRCS will implement early action activities targeting for the most at-risk households based on the heat exposure level, vulnerability, and coping capacity. Household Criteria identified for each category are listed below:

Exposure:

- People living at identified heat hotspots areas of target cities
- People living in substandard housing
- Outdoor workers such as rickshaw riders, street vendors, daily wage labours, agricultural workers, traffic police, security guards and street dwellers

	Vulnerability: • Demography (senior citizens, children, those living with chronic diseases, people with disability) • Low-income households • Migrants, including undocumented people. Person with disability, communities with language barrier due to local dialect, remoteness are what limit access to early warning. **Coping capacity:** • Access to cooling equipment • Access to health facilities • Access to social protection system • Access to electrolytes and safe drinking water The early actions will target vulnerable groups including senior citizens, children, caregivers of babies, pregnant women, those living with chronic diseases, as well as people marginalised due to poverty, Low-income households are disproportionately affected by extreme heat as they lack cooling equipment, such as air conditioners, fans, and refrigerators, and live in substandard accommodation lacking ventilation in general. People with chronic diseases and the senior citizens are particularly vulnerable because they are more heat sensitive and prone to severe health issues or may have pre-existing health conditions. Schoolchildren are vulnerable as they are exposed to extreme heat in classrooms, playgrounds as well as while commuting and have relatively weak immunity to combat heat. Outdoor workers such as rickshaw riders, street vendors, daily wage labours, agricultural workers, traffic police, security guards and street dwellers are also vulnerable due to their exposure to the elements and lack of access to cooling equipment. Although the city population however does not reflect the migrant workers who come to these cities to work in from the nearby areas and further. This sEAP will include those migrant population, who are undocumented and constitute a significant proportion, as well. Most vulnerable elderly people will be identified through the database from local governments, including the social development section's registry lists. . In addition to using the government's Social Security Allowance database to identify elderly. NRCS will collaborate with municipal offices, ward committees, and local cooperatives to identify outdoor daily wage workers such as rickshaw drivers, construction workers, street vendors, and manual labourers. These groups have been recognized as high-risk in Nepalganj Heat Action Plan and are commonly excluded from formal registries. Where lists are unavailable, NRCS chapters will use community-based verification during pre-activation assessments to validate beneficiaries, ensuring inclusion of informal labourers in coordination with local authorities. The groups to be actively targeted by this simplified EAP have been selected based on those most exposed to the prioritized risks and hazard impacts, takes into consideration the level of vulnerability and coping capacities, with attention to most-at-risk groups. However, the early actions related to the extreme heat awareness campaign can be accessed by anyone in need.
Trigger(s) statement	The simplified Early Action Protocol (sEAP) will be activated in a respective city/municipality of the southern Terai region of Nepal when both of the observed conditions and forecast criteria are met:

1. **Observed Conditions:**

   - Daily maximum temperature (Tmax) exceeding
     - 41°C in Nepalgunj
     - 40.5°C in Dhangadi
     - 37.5 °C in Biratnagar
     - 40.5°C in Siddharthanagar
   - Relative humidity (Rh) of 45 per cent or higher in the respective city for which observed condition for Tmax is met.

2. **Forecast Criteria:**
   In addition to the observed conditions, **at least one** of the following forecast criteria must be met for the same city/municipality for which both the aforementioned observed condition (Tmax and Rh) is met:

   - Criteria 1: DHM issues a red alert heatwave bulletin (indicating "take action") for the next 3 days in the target city or its associated district.
   - Criteria 2: Numerical Weather Prediction (NWP) product from DHM forecasts daily maximum temperature (Tmax) above the 99th percentile threshold in the target cities/municipalities for the next 3 consecutive days.

Percentile based temperature thresholds for respective weather stations in each target cities is provided in the table below.

Cities	Weather Stations	Temperature Thresholds Percentile			Trigger Threshold
		90th	95th	99th	
Nepalgunj	Nepalgunj Airport	38°C	39.8°C	42.6°C	41°C
Dhangadi	Dhangadi Airport	37.7°C	39.4°C	41.7°C	40.5°C
Siddharthanagar	Bhairahawa Airport	37°C	38.6°C	41.6°C	40.5°C
Biratnagar	Biratnagar Airport	35°C	36°C	38.2°C	37.5°C

Trigger threshold justification

The Department of Hydrology and Meteorology (DHM) has automatic weather stations (AWS) in all the four cities/municipalities – that records hourly temperatures and relative humidity. These stations also have historical records of daily temperatures (maximum and minimum) and relative humidity dating from 1990. Heatwave warnings in Nepal are entirely based on the daily maximum temperatures. DHM has categorized heatwaves into three levels: mild, moderate, and extreme heatwaves and the definitions are based on the percentile's values of daily maximum temperature with minimum duration of 3 days. **Mild heatwave** refers to the annual count of events consisting of at least three consecutive days during which the maximum temperature exceeds the 90th percentile threshold. A **moderate heatwave** event occurs when there is a period with at least three consecutive days during which the maximum temperature exceeds the 95th percentile threshold. An **extreme heatwave** event, on the other hand, occurs when the maximum temperature exceeds the 99th percentile threshold for at least three consecutive days.

Based on the historical time series of daily maximum temperatures from 1990 to 2023, the 90th, 95th, and 99th percentile thresholds have been calculated for Nepalgunj, Dhangadi, Siddharthanagar and Biratnagar. Additionally, the frequency of mild, moderate, and extreme heatwave events has been analysed for the period 1990–2023 in Dhangadi, Siddharthanagar, and Biratnagar, and for 1996–2020 in Nepalgunj. Mild heatwave events occur very frequently, with multiple episodes observed in every year or so. As such, they have been excluded from threshold considerations for this simplified Early Action Protocol (sEAP). Only the moderate and extreme heatwave events are being considered for this sEAP. Annex 3 presents graphical results showing the counts and durations of moderate and extreme heatwave events for each of the four cities.

Moderate heatwave events are also common in all these four cities with at least one annual episode observed in recent years. On the other hand, extreme heatwave events are relatively rare in terms of occurrences. Nepalgunj recorded extreme heatwaves in only four years between 1996 and 2020, while Dhangadi experienced 11 such years from 1990 to 2023, with the most recent in 2019. Siddharthanagar and Biratnagar observed two such episodes in 2023, while the previous one was during 2019 and 2014 respectively. This means, neither the typical moderate nor the extreme heatwave events are suitable as trigger thresholds. The former poses a risk of being reached almost every year, while the latter occurs too infrequently making it unsuitable for the objectives of a simplified EAP.

Therefore, the proposed trigger thresholds have been catered for the higher-end moderate heatwave events that are less frequent and pose greater risk. The trigger criteria require that the observed condition for daily maximum temperature exceed 41°C in Nepalgunj, 40.5°C in Dhangadi, 37.5 °C in Biratnagar and 40.5°C in Siddharthanagar. Additionally, the relative humidity must be at least 45 per cent to meet the observed conditions for any of the above cities. Combination of relative humidity and air temperature gives the heat index, also known as apparent temperature i.e., the feels like temperature to human body. With these threshold values for Tmax and Rh for observed conditions of trigger criteria, the respective heat index (HI) is going to fall within the Danger category in all the target cities/municipalities or even to extreme danger category (for e.g., in Nepalgunj), bringing significant implication in the heat related disorders across vulnerable and high-risk groups.

Category	Heat Index	Possible heat disorders for people in high risk groups
Extreme Danger	130°F or higher (54°C or higher)	Heat stroke or sunstroke likely.
Danger	105 - 129°F (41 - 54°C)	Sunstroke, muscle cramps, and/or heat exhaustion likely. Heatstroke possible with prolonged exposure and/or physical activity.
Extreme Caution	90 - 105°F (32 - 41°C)	Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or physical activity.
Caution	80 - 90°F (27 - 32°C)	Fatigue possible with prolonged exposure and/or physical activity.

So, these observed conditions must be met before confirming any of the forecast criteria for the sEAP activation.

The proposed forecast criteria utilize products from the Department of Hydrology and Meteorology (DHM), either in the form of official heatwave bulletins or numerical weather prediction (NWP) outputs. DHM's heatwave

	bulletins, which are issued relatively frequently (e.g., 11 times in 2024), do not currently differentiate between categories of heatwaves. Therefore, the inclusion of observed thresholds for maximum temperature (Tmax) and relative humidity (RH) ensures that the sEAP is only activated for heatwave events of sufficient intensity. DHM's NWP products, which offer hourly temperature forecasts for the next three days, are still considered experimental, and no comprehensive validation has yet been conducted. Preliminary assessments suggest that these forecasts tend to overestimate temperature values. As a result, the forecast criterion using DHM's NWP products has been aligned with the extreme heatwave threshold—defined as temperatures exceeding the 99th percentile—to ensure consistency with typical high-end moderate heatwave events for which this sEAP is supposed to activate and get implemented.
Next steps – For National Societies that intend to develop a full EAP (Optional)	Based on the lessons learnt from the past heat action related initiatives in the target cities and the potential activation and implementation of the SEAP in next couple of years, selected triggers and early actions will be refined and incorporated into a future Full EAP, with provision to include more cities/urban areas of Southern Terai of Nepal. SEAP, at current, only relies on the observation and forecasts of DHM. So, for the future full EAP development, extensive evaluation and research will be conducted with regard to global and regional forecasting products and information, potentially increasing the lead times for the Full EAP. Also, the use of heat index (HI) forecasts for triggers and activation will be explored during the full EAP development, particularly in places where humidity levels are usually observed high – making the forecast triggers more relevant to the final heat perception of the human body. Full EAP will also undertake thorough assessments of forecasts skills and accuracy of the numerical weather predictions and heatwave bulletins from DHM, and any other regional or global forecast sources being considered. Also, the false alarm ratio and hit rate shall be calculated for the chosen trigger thresholds.

PLANNED OPERATIONS

	**Multi-purpose Cash**	**Budget**	**45,077 CHF**	
		No. people targeted	6,000	
Indicator:	• # of households received MPC assistance for five days of monthly MEB		**Target:**	1,200 HHs
Readiness activities:	1. Consultation meeting with municipalities 2. Volunteer mobilization for the beneficiaries registration 3. Train NRCS volunteers and staff on CVA 4. Stand-by agreement with telecommunication companies for IVR call and SMS to notify the beneficiaries for cash transfer			

	5. Coordination and agreement with relevant financial institutions for the timely distribution of the MPC
Prepositioning activities:	n/a
Prioritized Early Actions:	1. Distribution of early cash to targeted HHs 2. Post Activation Monitoring (for CVA as well as Health and DRR)

	Health & Care	**Budget**	**62,092 CHF**
		No. people targeted	4,200
Indicator:	• # of people reached with drinking water and electrolytes, shading spaces with cooling and misting system • # of households visited by FCHVs to disseminate heatwave related health symptoms, prevention and refer to the health centers • # of people reached by the RRTs/MRTs for heatwave related primary health care	**Target:**	• 3,000 people reached with drinking water and electrolytes, shading spaces with cooling and misting system • 1,200 HHs visited by FCHVs
Readiness activities:	1 Awareness and community sensitization on preventive measures for heatwave and related symptoms 2 Design key awareness messages and print in different local languages 3 Train FCHVs and RRT on heatwave related primary health care 4 Standby agreement with catering services to establish shading spaces and drinking water 5 Meeting with municipalities and health centers for the formation/reformation of RRT at municipality level 6 Regular coordination with health centers located at targeted municipality		
Prepositioning activities:	1. Procurement of electrolytes for distribution 2. Procurement of water misting system 3. Procurement of cooler to establish cooling system		
Prioritized Early Actions:	1. Distribution of safe drinking water and electrolytes 2. Establish shading spaces with cooling system 3. Installation of water misting system 4. Mobilization of FCHVs to disseminate heatwave related health symptoms, prevention and refer to the health centers 5. Activation of RRT/MRT to provide heatwave related primary health care 6. Provide ambulances for those with severe or life-threatening heat symptoms, based on the NRCS-trained volunteers will conduct basic triage (in case of showing the severe symptoms like unconsciousness, shock, nausea, vomiting, dizziness etc.		

		which can be identified by the volunteers) to prioritize cases requiring hospital referral.	
	**Protection, Gender and Inclusion**	**Budget**	**5,573 CHF**
		No. people targeted	1,600
Indicator:	# of people reached with GBV in emergencies messages	**Target:**	1,600
Readiness activities:		1. GBV in emergencies training for volunteers and staff	
Prepositioning activities:		N/a	
Prioritized Early Actions:		1, Disseminate protection, inclusion and GBV related messages in shading spaces	

	**Risk Reduction, climate adaptation and Recovery**	**Budget**	**46,730 CHF**
		No. people targeted	8,000
Indicator:	• # of people reached through the dissemination of heatwave forecast messages through media, loudspeakers and mobilization of volunteers • # of hand fans distributed	**Target:**	8,000 people
Readiness activities:		1. Integration of AA plan in existing municipal level HAP 2. Drill/simulation for early warning messaging 3. Identification of beneficiaries for targeted early actions 4. Design inclusive early warning messages focusing the targeted population 5. Orientation for the volunteers on heatwave forecast message dissemination 6. Standby agreement with FM radio and TV channels for broadcasting of forecast and early warning messages	
Prepositioning activities:		1. Purchase of hand fan for the distribution during early actions 2. Purchase of Cap for the distribution during early actions for Volunteers and beneficiaries 3. Purchase of summer towels (Gamchha) for the distribution during early actions for Volunteers and beneficiaries 4. Purchase of Umbrella for the distribution during early actions for Volunteers and beneficiaries 5. Purchase of water bottle for the volunteers mobilized during early actions 6. Purchase of a loudspeaker for dissemination of forecast and early warning messaging	
Prioritized Early Actions:		1. Dissemination of heatwave forecast messages through loudspeaker	

	2. Mobilization of volunteers for the dissemination of early warning messaging 3. Volunteer mobilization for the distribution of Locally made hand fan4. Dissemination of heatwave related risk messages through FM radio and TV channels

	**Community Engagement and Accountability**	**Budget**	**6,241 CHF**	
		People targeted	10,000	
Indicator:	• # of people reached through CEA activities		**Target:**	10,000 people
Readiness activities:	1. Develop and publicize inclusive early warning communication channel aligning with the local government. 2. Develop and establish a feedback mechanism to collect feedback, complaints and suggestions based on the community preferred and accessible communication channel 3. Train NRCS volunteers, municipality staff and FCHVs on feedback handling mechanism 4. Sensitization on community feedback mechanism through the mobilization of NRCS volunteers, municipality staff and FCHVs 5. Sensitization on community feedback mechanism and NRCS hotline services through the mobilization of NRCS volunteers, municipality staff and FCHV			
Prepositioning activities:	1. Purchase of complaint boxes to collect the complaints and suggestions			
Prioritized Early Actions:	1. Establish helpdesk at shading spaces 2. Volunteer mobilization for CEA activities			

ENABLING APPROACHES

	**Secretariat services**	**Budget**	**19,814 CHF**	
		No. People targeted		-
Indicator:			**Target:**	-
Readiness activities:	1. Program & PMER Support for annual readiness activities and reporting 2. Strengthen IFRC-Wide coordination to bring technical and operational complementarity and enhancing cooperation with external stakeholders			

	3. IFRC monitoring visit for effective implementation 4. Ensure synergy between this operation and Partner National Society supported activities in the selected cities
Prepositioning activities:	1. IFRC Logistic support to support for procurement and pre-position of items 2. IFRC Program part-time support for pre-positioning of items during pre-stock 3. IFRC Admin/Finance part-time support for pre-positioning of items during pre-stock 4. Purchase of 200 litre stainless water cooling storage and dispenser
Prioritized Early Actions:	1. Anticipatory Action Technical person support during early action 2. Process the funds for the early actions. 3. IFRC Admin/Finance part-time support to start early action

	National Society Strengthening	**Budget**	**34,207 CHF**	
		People targeted		-
Indicator:			**Target:**	-
Readiness activities:		1. Recruitment of NRCS focal person for heat sEAP(NHQs)- 1 person for 4 months 2. Recruitment of NRCS focal person for heat sEAP in each 4 districts for 2 months 3. Recruitment of NRCS Finance Officer (NHQs) - 1 person for 3 months 4. Top-up for Finance person in each 4 district for 1 months 5. Administrative and logistics cost (both in NHQ and District) 6. Monitoring cost (both in NHQs and District)		
Prepositioning activities:		1. Top-up for Finance person in each 4district for 1 months		
Prioritized Early Actions:		1. Recruitment of NRCS focal person for heat sEAP(NHQs)-1 person for 3 months 2. itment of NRCS focal person for heat sEAP in each 4 districts for 3 months 3. Recruitment of NRCS Finance Officer (NHQs) - 1 person for 3 months 4. Top-up for Finance person in each 4 district for 3 months 5. Lesson Learnt workshop		

CONDITIONS TO DELIVER THE EARLY ACTION

Experience and/or capacity to implement the early actions. *Assumptions or minimum conditions needed to deliver on the early actions (including issues to be resolved)*	NRCS is well-positioned to implement heat-related early actions due to its extensive experience in disaster preparedness, response, and community-based resilience building. With a widespread network of trained volunteers, strong local presence, and ongoing partnerships with municipalities and communities, NRCS has both the operational capacity and field experience necessary for the timely execution of anticipatory actions. NRCS has demonstrated effectiveness in disseminating early warning messages through various communication channels, including local volunteers, FM radios, community-based networks, and digital platforms. This capacity can be readily adapted to distribute forecast-based heatwave warnings in local languages *(*. ensuring communities receive timely and actionable information. In fact, NRCS with support from American Red Cross, British Red Cross and Finnish Red Cross have been running series of public awareness campaigns and heat action initiatives during heat season across the target cities. To address hydration-related risks, NRCS has prior experience in the storage and distribution of safe drinking water and electrolytes during emergencies. This will be scaled to support vulnerable populations during heatwaves, especially in urban areas where access to clean safe drinking water may be limited. The activation of Rapid Response Teams (RRTs), Medical Response Teams (MRTs), and Female Community Health Volunteers (FCHVs) is a core component of NRCS's emergency response model. These trained personnel can be swiftly mobilized to provide first aid, identify heat-related illnesses, and offer immediate support at community and household levels. NRCS also has proven capacity in implementing Cash and Voucher Assistance (CVA), having distributed multipurpose cash (MPC) in advance of floods in western Nepal during the 2024 monsoon season. This experience, combined with its integration of CVA into Forecast-based Financing (FbF) systems, enables NRCS to deliver targeted cash assistance to the most vulnerable populations at risk of heat stress, supporting their ability to take protective actions. For community-level heat protection, NRCS volunteers will distribute locally appropriate materials such as hand fans, gamchha (local towels), caps, and umbrellas, which are cost-effective and culturally accepted tools for reducing exposure during peak heat hours. Additionally, NRCS has the technical and logistical ability to install temporary cooling and misting systems in public spaces. This is supported by its past involvement in setting up cooling centres and water distribution points during extreme heatwave events in the target cities. Crucially, NRCS's ongoing collaboration with Danish Red Cross and other Movement partners through anticipatory action programming has supported the development of Standard Operating Procedures (SOPs) for forecast-based action. These SOPs, along with heat action plans already developed in the four target cities (Biratnagar, Nepalgunj, Siddharthanagar, and Dhangadi), will guide the effective and timely implementation of the heatwave Simplified Early Action Protocol (sEAP). While challenges such as logistical coordination, last-mile communication, and reaching the most at-risk populations remain, NRCS plans to address these through close collaboration with municipal governments, community-based volunteers, and by leveraging existing humanitarian partnerships. With continued technical support from Red Cross Movement partners and alignment with national anticipatory action frameworks currently under development by NDRRMA, NRCS is also positioned to integrate this SEAP with the annual heatwave preparedness and

	response plans typically issued ahead of the heat season. These efforts collectively strengthen NRCS's capacity to deliver timely, localized heat early actions that safeguard both lives and livelihoods.
Red Cross Red Crescent Movement partners, Governmental / other agencies consulted/involved on this simplified EAP	NRCS, with support from IFRC, the American Red Cross, Danish Red Cross, Finnish Red Cross, British Red Cross, Swiss Red Cross, and the Red Cross Red Crescent Climate Centre (RCCC), has jointly developed this Simplified Early Action Protocol (sEAP). The targeted municipalities have already formulated Heat Action Plans (HAPs), which outline short-, medium-, and long-term interventions to address heat risks. With technical assistance from RCCC, NRCS played a key role in facilitating the development of these plans. In each of the target cities, NRCS has actively supported local governments in operationalizing their Heat Action Plans and brings valuable experience in both heat preparedness and response. These Heat Action Plans of the respective municipalities/cities have been extensively referred during the formulation of this SEAP. In fact, this sEAP is designed to complement and reinforce those existing plans by enabling timely and coordinated early actions during forecasted heatwave events. During the development of this SEAP, NRCS conducted consultations with the National Disaster Risk Reduction and Management Authority (NDRRMA), the Department of Hydrology and Meteorology (DHM), and its district and local chapters including local communities to identify the target areas and the feasible heat related early action. Many of the early actions outlined in this sEAP were directly informed by interventions prioritized by local and district-level authorities and stakeholders. All these stakeholders, including municipal bodies, national authorities, and humanitarian partners will be actively engaged in the implementation of the sEAP. Red Cross partners are also supporting NDRRMA in the development of a legal framework for anticipatory action, aimed at mainstreaming early action initiatives into the country's broader disaster risk management system. At the federal level, NRCS and NDRRMA are collaborating to institutionalize anticipatory action for heatwaves through the development of a national roadmap. In parallel, other organizations under the START Network are also piloting and testing heat-related anticipatory actions in different Terai region of Nepal, further strengthening the collective response capacity during the heat season.

BUDGET

Early Action Protocol Summary

EAPcode - Nepal Red Cross Society
Heatwave

Operating Budget	Readiness	Pre-Pos Stock	Early Action	TOTAL
Planned Operations	**47,795**	**50,507**	**67,411**	**165,713**
Shelter and Basic Household Items	0	0	0	**0**
Livelihoods	0	0	0	**0**
Multi-purpose Cash	8,545	0	36,532	**45,077**
Health	14,452	22,972	24,668	**62,092**
Water, Sanitation & Hygiene	0	0	0	**0**
Protection, Gender and Inclusion	4,953	0	619	**5,573**
Education	0	0	0	**0**
Migration	0	0	0	**0**
Risk Red., Climate Adapt. and Recovery	14,644	27,387	4,700	**46,730**
Community Engagement and Accountability	5,201	149	892	**6,241**
Environmental Sustainability	0	0	0	**0**
Enabling Approaches	**29,067**	**11,517**	**13,436**	**54,021**
Coordination and Partnerships	0	0	0	**0**
Secretariat Services	4,334	11,145	4,334	**19,814**
National Society Strengthening	24,733	372	9,102	**34,207**
TOTAL BUDGET	**76,862**	**62,024**	**80,847**	**219,733**

all amounts in Swiss Francs (CHF)

Contact information

For further information, specifically related to this simplified EAP please contact:

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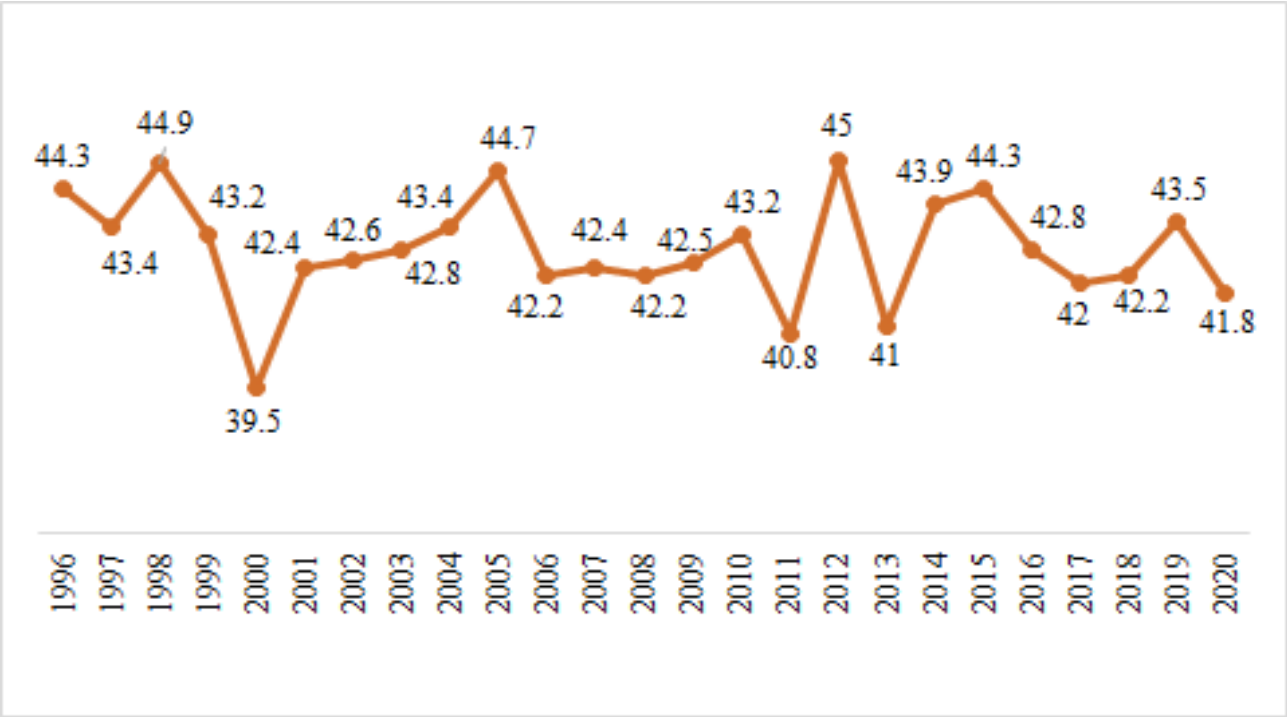
- **IFRC Geneva focal point:** Malika Noisette, DREF Senior Officer; email: malika.noisette@ifrc.org

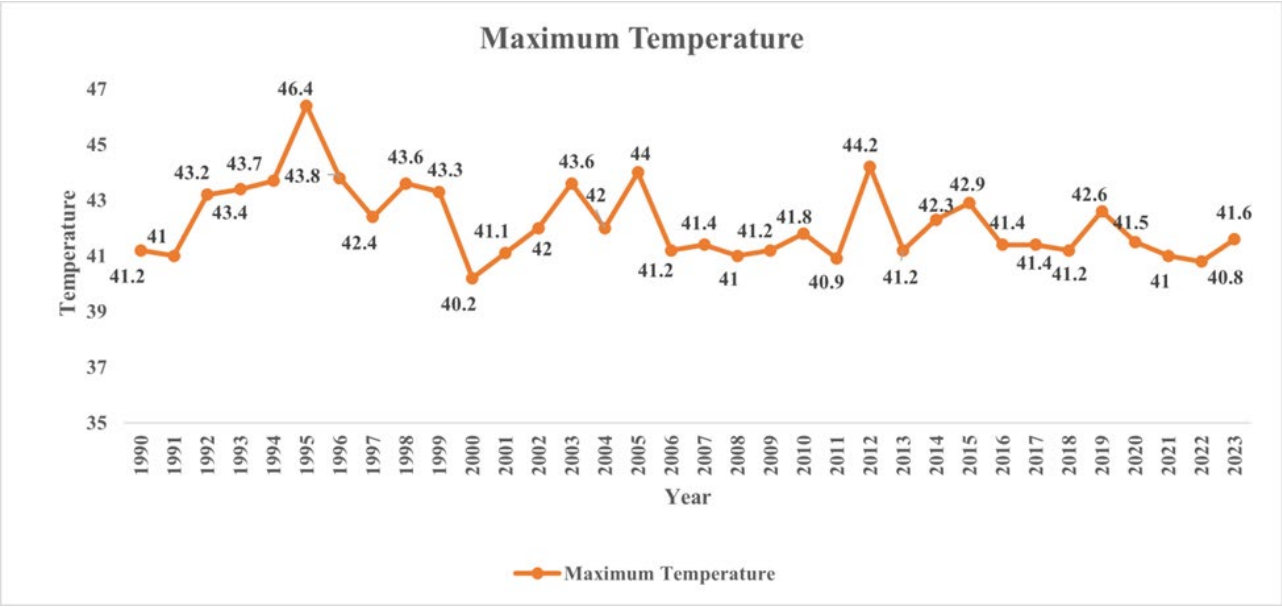
ANNEXES

Annex 1: Annual Maximum Temperatures in Nepalgunj, Dhangadi, Siddharthanagar and Biratnagar (As referenced from respective Heat Action Plans)

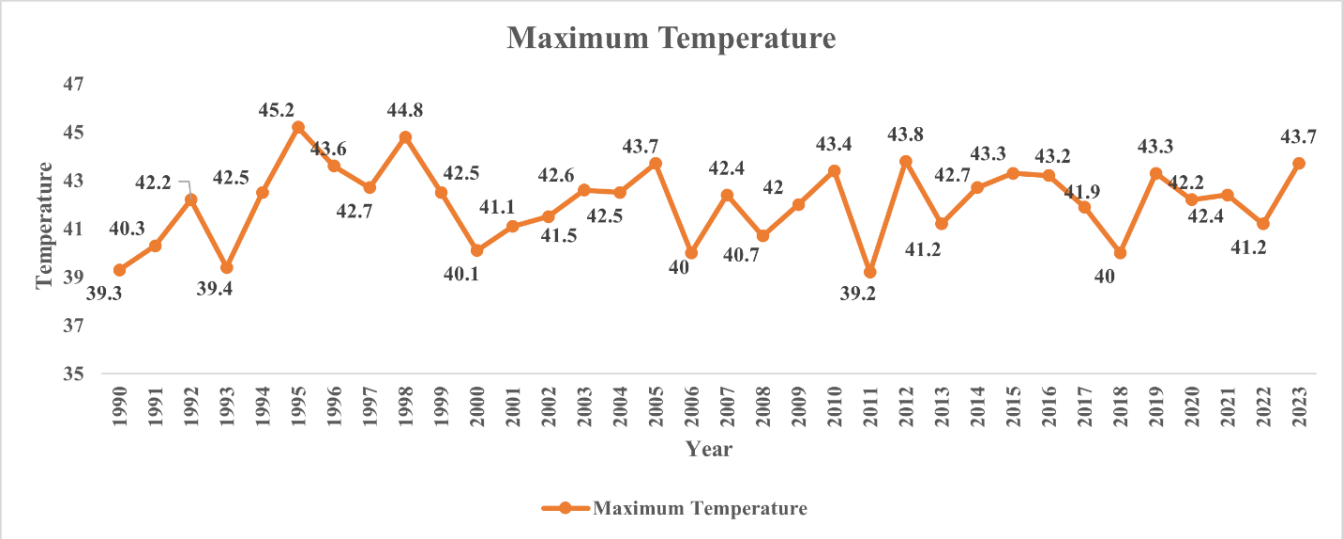
(a) Maximum temperature (° Celsius) of each year from 1996 to2020, Nepalgunj Airport Station, Nepalgunj (Source: DHM Data)



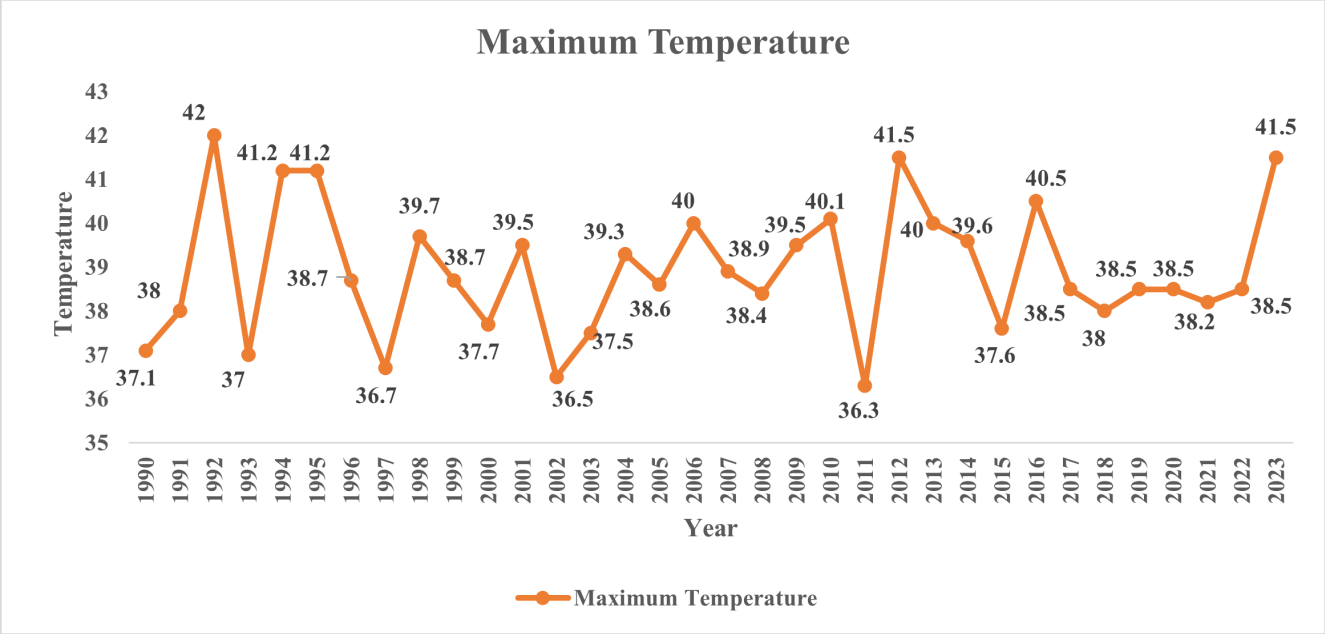
(b) Maximum temperature (° Celsius) of each year from 1990 to 2023, Dhangadi (Based on DHM Temperature Data)



(c) Maximum temperature (° Celsius) of each year from 1990 to 2023, Siddharthanagar (Based on DHM Temperature Data)

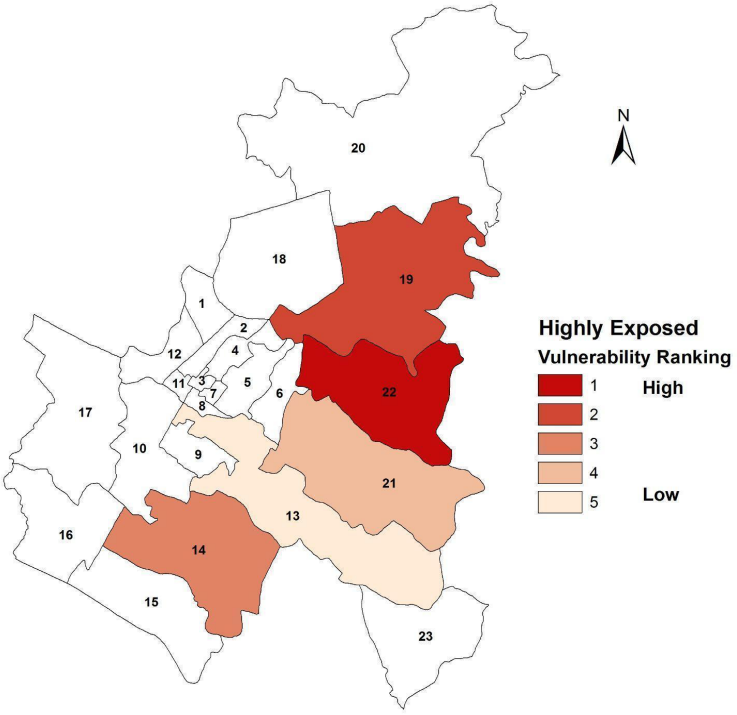


(d) Maximum temperature (° Celsius) of each year from 1990 to 2023, Biratnagar (Based on DHM Temperature Data)

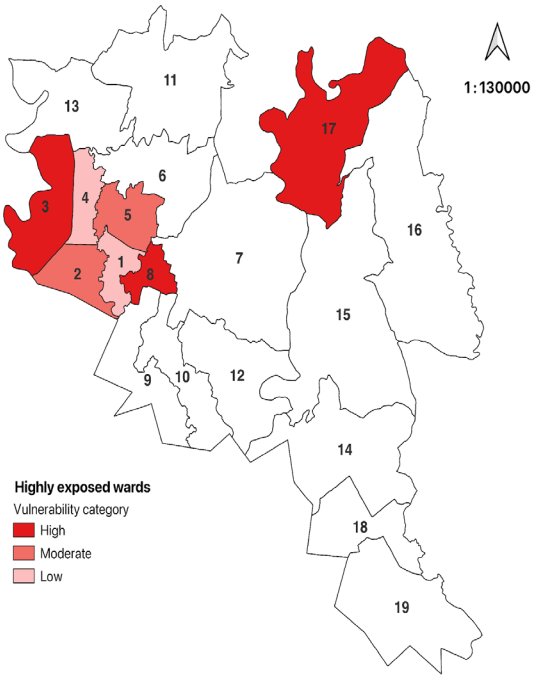


Annex 2: Heat Hotspots in Nepalgunj, Biratnagar, Dhangadi and Siddhartha Nagar (Source: Heat Action Plans (HAPs) of respective cities)

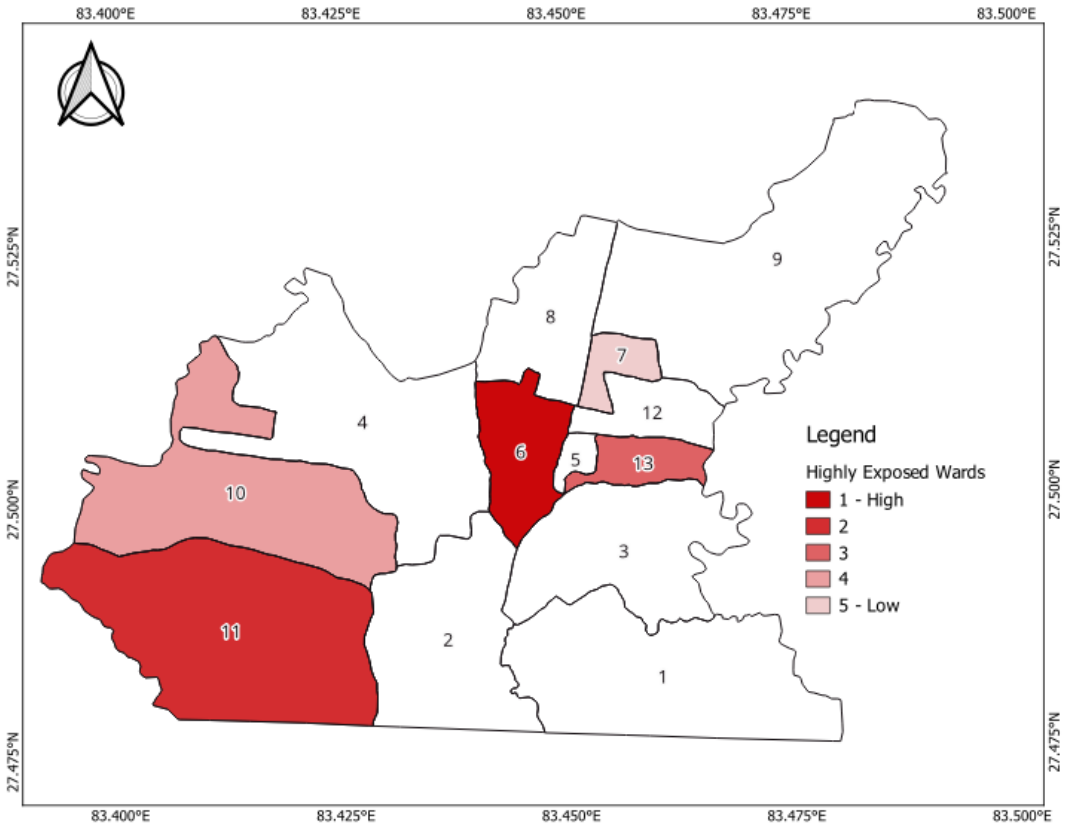
(b) Nepalgunj



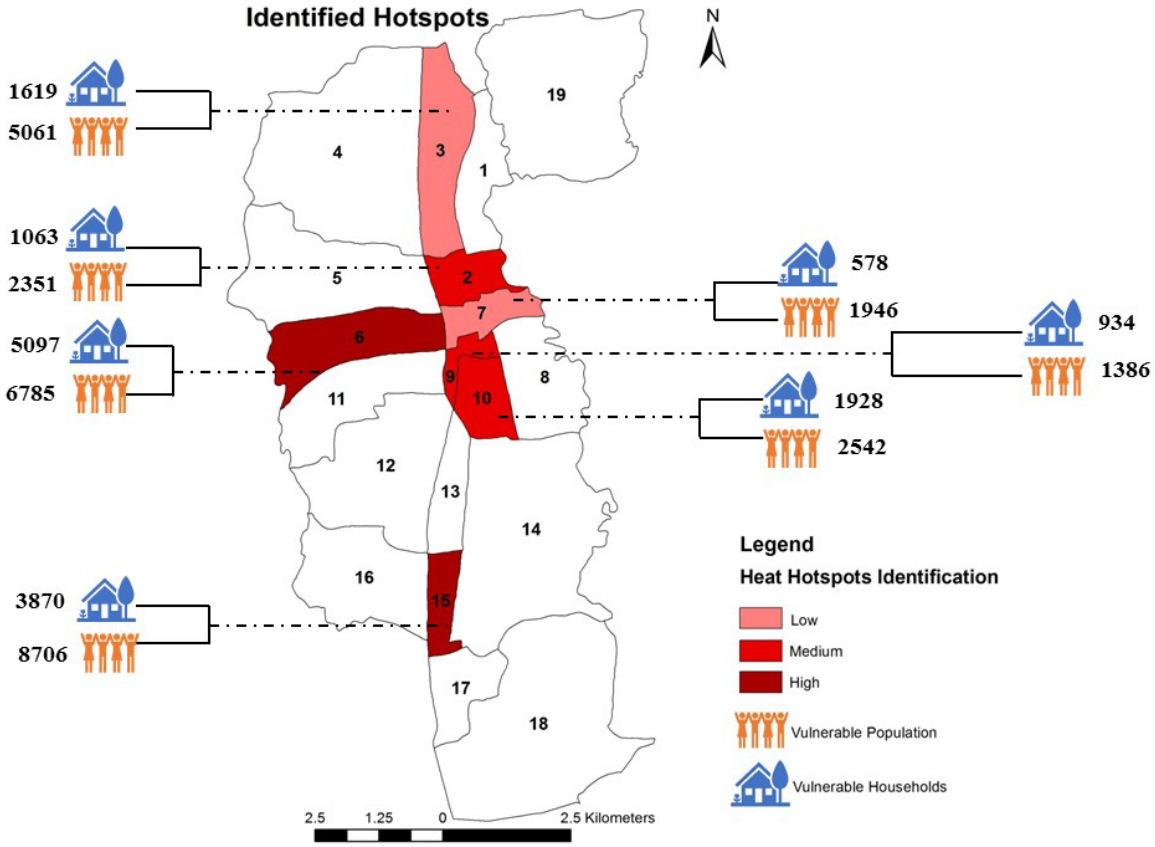
(c) Dhangadi



(d) Siddharthanagar

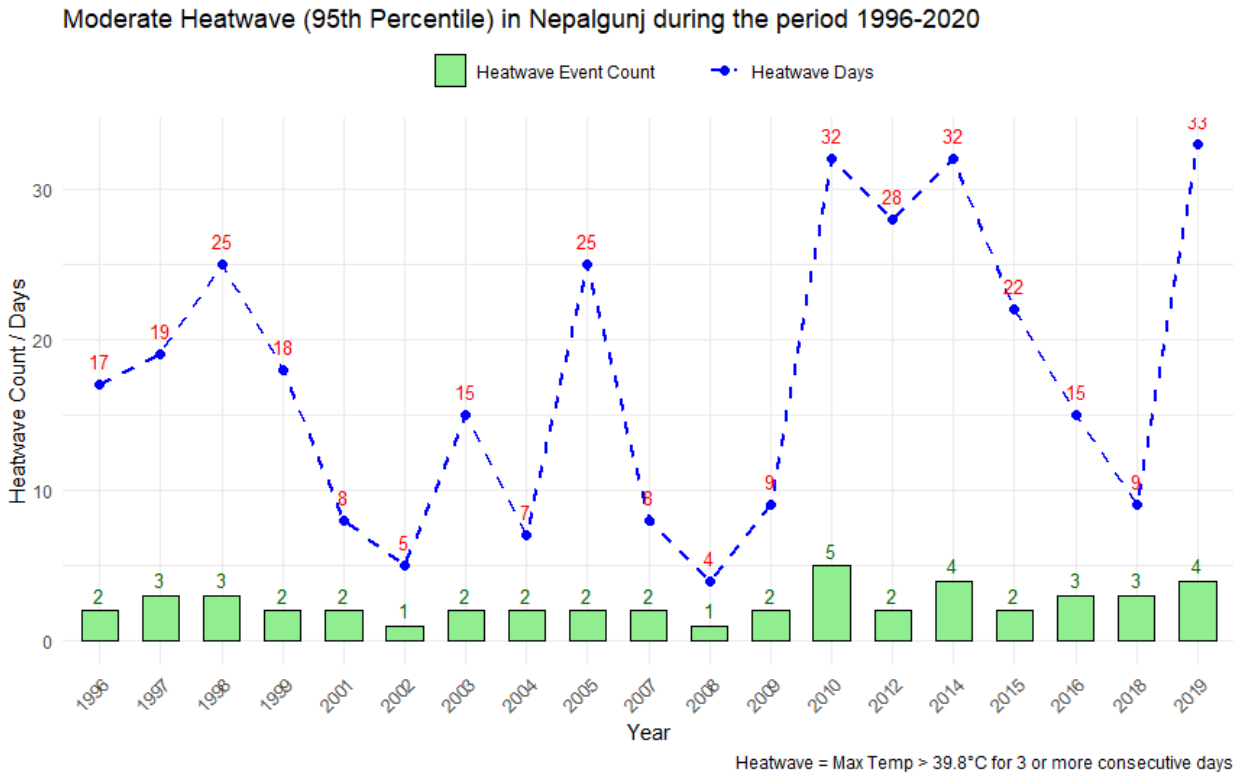


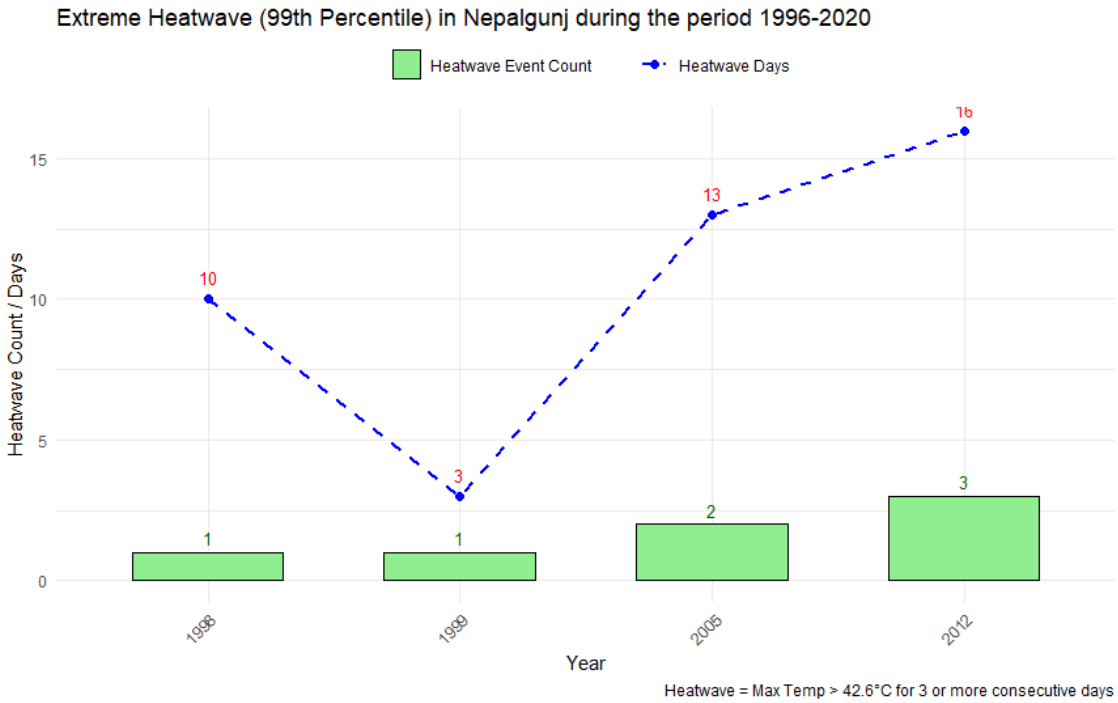
(e) Biratanagar



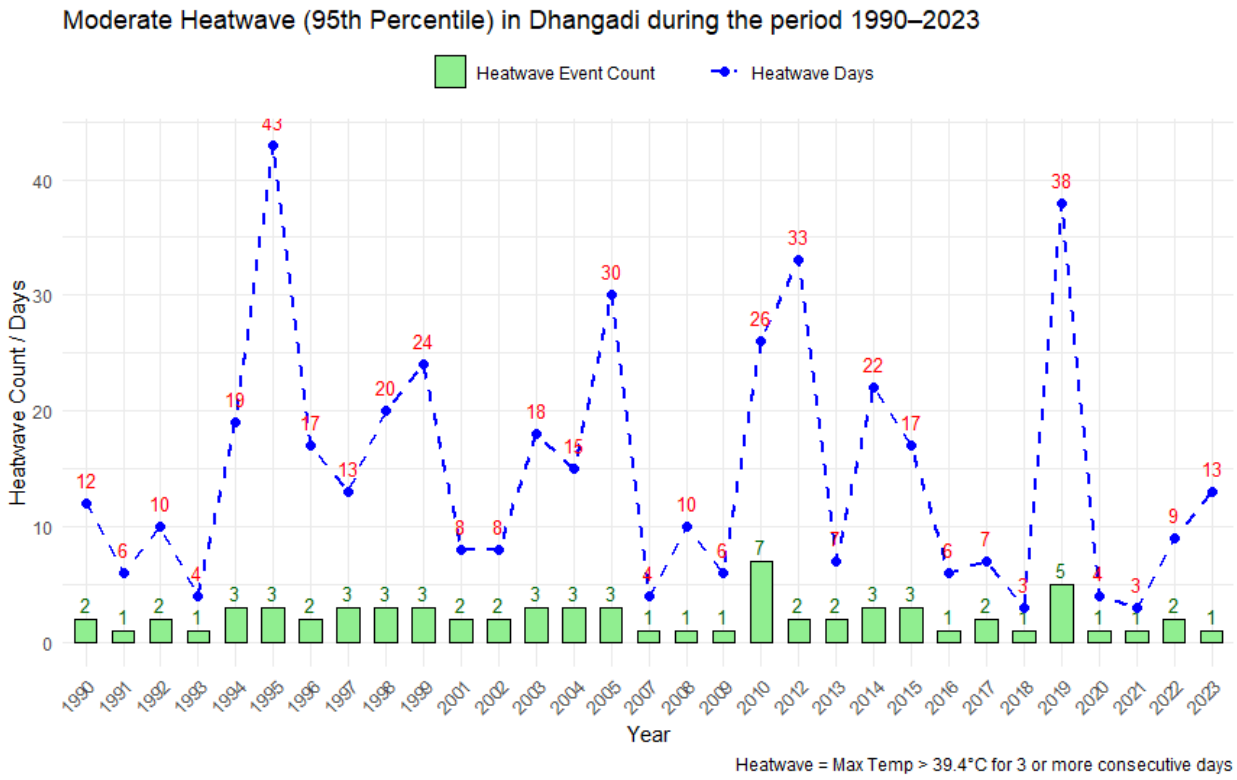
Annex 3: Frequency Analysis for the Heatwave Events in Nepalgunj, Dhangadi, Siddharthanagar and Biratnagar

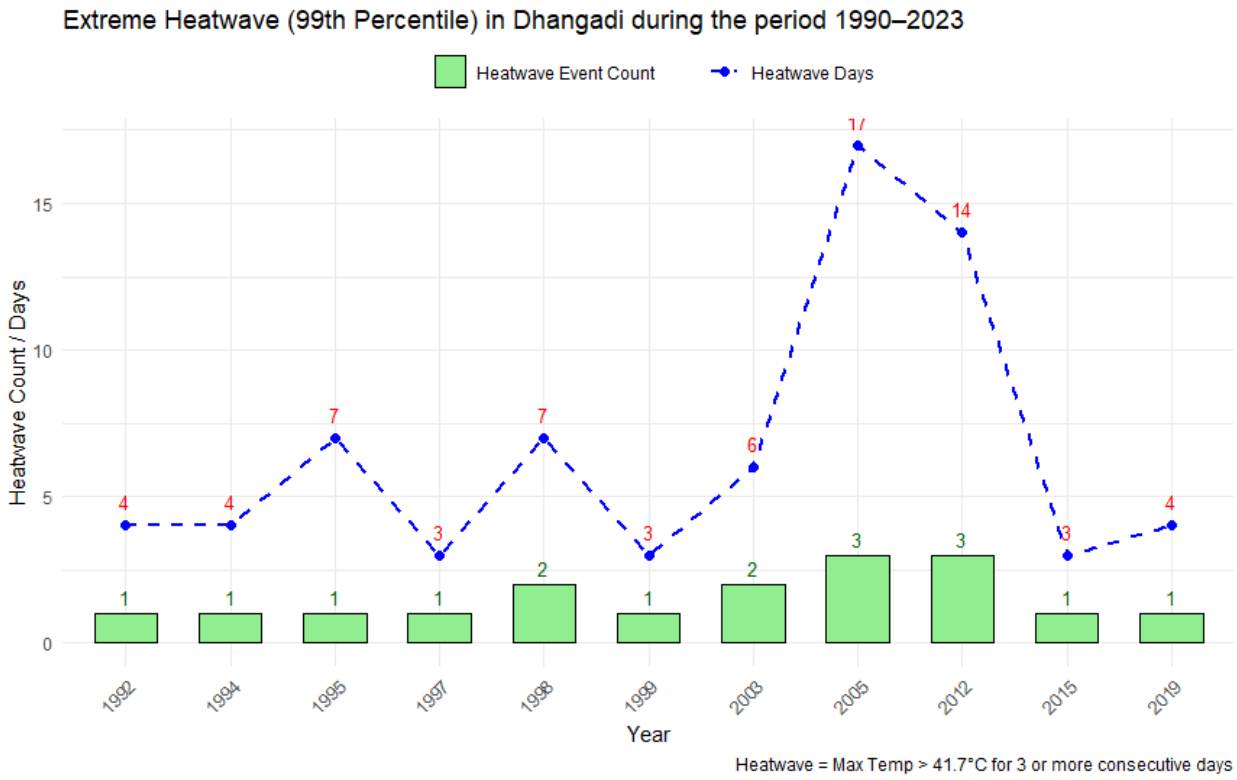
A. Nepalgunj



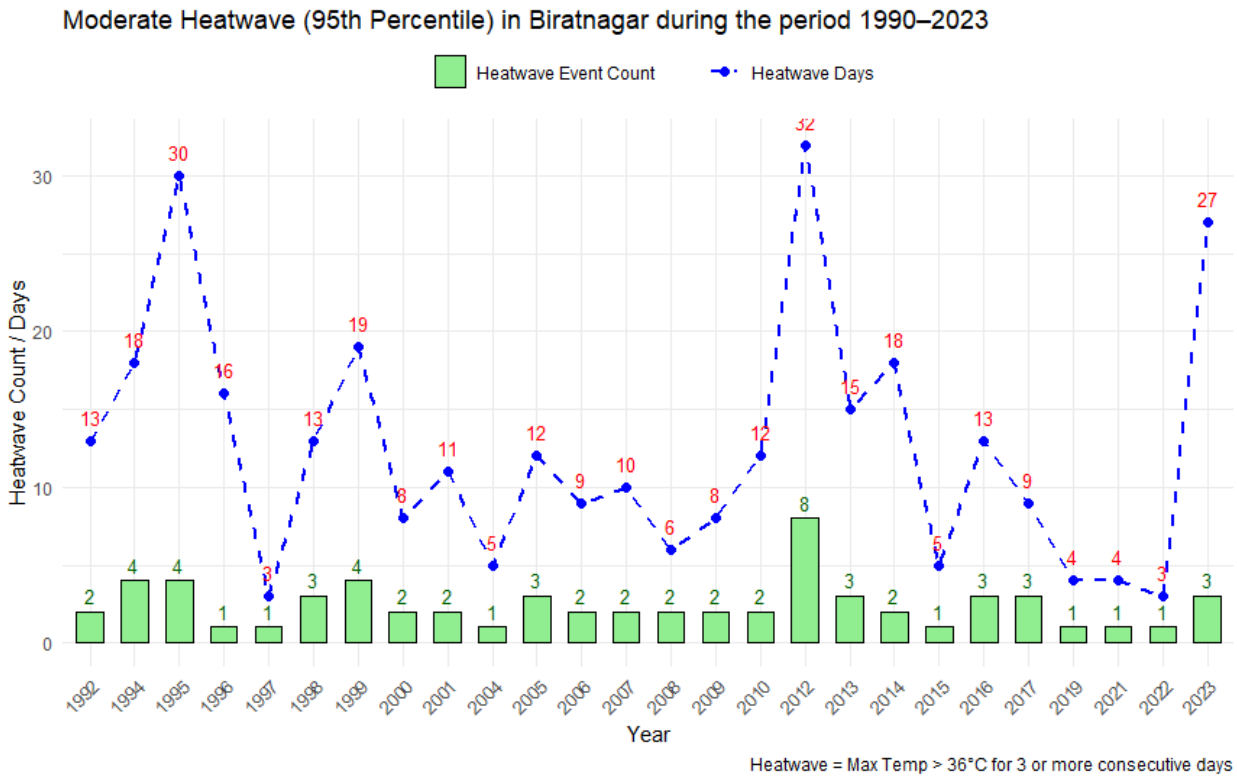


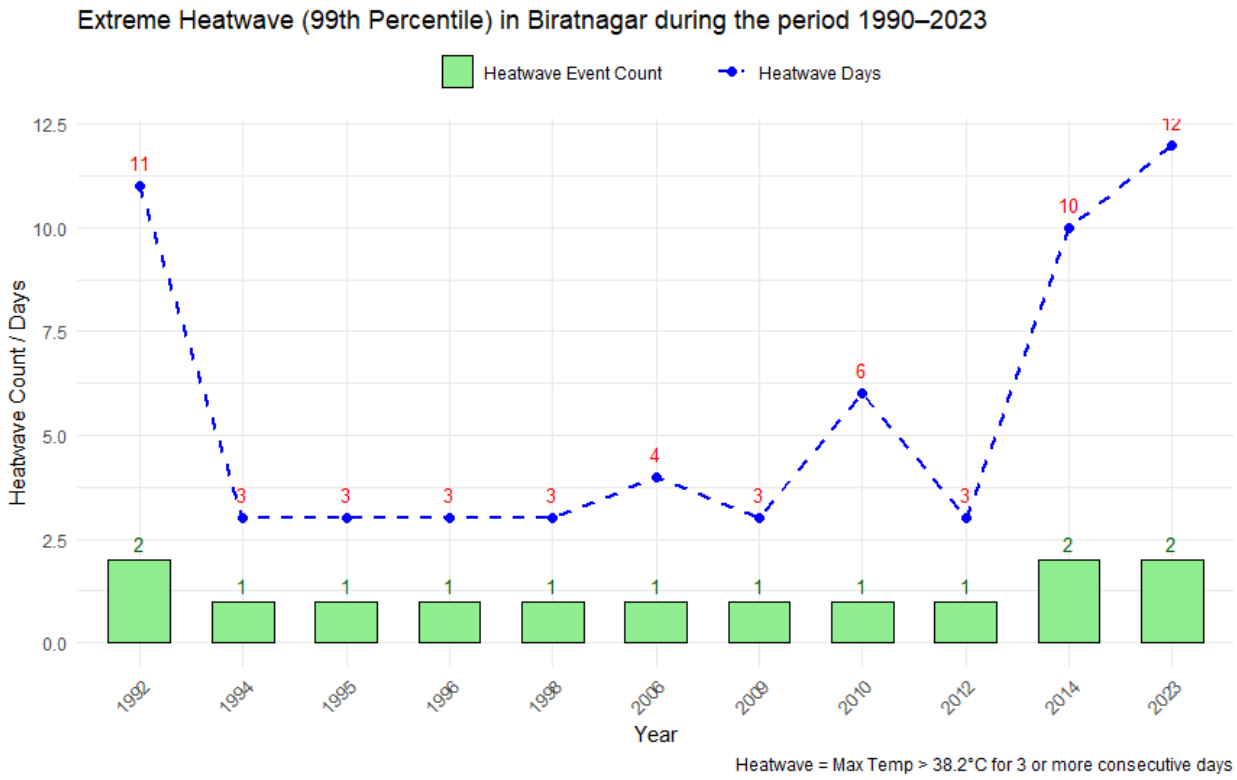
B. Dhangadi


Moderate Heatwave (95th Percentile) in Dhangadi during the period 1990–2023
Heatwave Event Count
Heatwave Days
Heatwave Count / Days
Year
Heatwave = Max Temp > 39.4°C for 3 or more consecutive days


Extreme Heatwave (99th Percentile) in Dhangadi during the period 1990–2023
Heatwave Event Count
Heatwave Days
Heatwave Count / Days
Year
Heatwave = Max Temp > 41.7°C for 3 or more consecutive days

C. Biratnagar





D. Siddharthanagar