



## INTERGENERATIONAL DIALOGUE ON CLIMATE CHANGE AND ADAPTATION

Rural: Sakuwa Parsauni, Parsa

Urban: Birgunj Metropolitan City



Submitted by: Mr Ujjwal Upadhyay, Facilitator

Social Organization District Coordination Committee (SODCC)  
Birgunj Metropolitan City, Madhesh Province, Nepal

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Ujjwal Upadhyay

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## Background

Climate change is a global phenomenon that affects the environment, weather, and human health on a global scale. The observed changes primarily involve key environmental factors such as temperature, precipitation, humidity, and air quality (Upadhyay, 2017). The 2021 IPCC report stated that human emissions have warmed the climate by almost 2 degrees Fahrenheit since 1850-1900. It predicts global temperatures to rise by 1.5 degrees Celsius in the next few decades, impacting all regions worldwide. Likewise, global warming is a facet of climate change, signifying the prolonged increase in the Earth's temperatures. This phenomenon results from heightened levels of greenhouse gasses in the atmosphere, primarily stemming from human activities like burning fossil fuels and cutting down trees (WWF Australia, 2018). These alterations are leading to extreme weather events all around the country particularly affecting both rural and urban livelihoods and associated activities like traditional lifestyles, cultural practices, traditions and rituals mainly in the underdeveloped and developing countries.

Countries like Nepal rely heavily on the Himalayas and their natural cycles, making the country particularly vulnerable to the effects of climate change. The rapid changes in the Himalayan landscapes caused by climate change further increase Nepal's susceptibility to its impacts (Singh et al., 2011). While being a global concern, climate change poses a significant environmental and social challenge for Nepal (Bhuju et al., 2019). Despite contributing only about 0.0056% (0.5 metric tons per capita annually) to the world's total greenhouse gas emissions, Nepal witnesses rising trends and the consequential impacts of climate change (World Bank, 2021). The country has already seen an increase in dry periods, heat waves, heavy rainfall, flash floods, landslides, forest fires, glacial retreats, and threats of Glacier Lake Outburst Floods (GLOFs) which collectively contribute to the vulnerability of marginalized populations both in rural and urban contexts (Upadhyay, 2017).

Similar challenges were observed in the rural community of Sakhawal Parsauni rural municipality and urban community of Birgunj metropolitan city in Parsa district located in *Tarai* (Southern plain) region. Rather than relying on traditional questionnaire surveys, an alternative approach was employed to understand the impacts of climate change. Dialogues were initiated with both the younger and older rural and urban residents to gain insight into the specific effects of climate change and the differing (and similar) perceptions between the two generations in two geographical regions having different socioeconomic settings. This unconventional method aimed to capture a more nuanced understanding of the experiences and perspectives of both youth and seniors in each area. By engaging in dialogues, a richer narrative emerged, providing a holistic view of how climate change is affecting the community and how these effects are interpreted by different age groups. The approach allowed for the exploration of personal experiences, local insights, and a deeper comprehension of the community's response to the changing climate.

Through these dialogues, it became possible to uncover not only the tangible impacts of climate change but also the emotional and cultural dimensions associated with these changes. The method acknowledged that climate change is not solely an environmental phenomenon but one that is intricately intertwined with the daily lives and perceptions of the people, showcasing the importance of community-based approaches in understanding and addressing such complex issues.

## **Objectives**

The primary aim of the intergenerational dialogue across urban and rural is to discern how younger and older generations perceive the impacts of climate change and their approaches to adaptation. This involved exploring the varied perspectives of both age groups regarding the effects of climate change and understanding their distinct methods of coping and adapting to these changes. By conducting the dialogues in both rural and urban areas, a further understanding of how the impact of climate change and its adaptation methods differ in different contexts is developed.

## **Methodology**

A qualitative approach was undertaken to understand the perceptions of the community. A total of six rounds of focus group discussions (FGD) were held to discuss the impacts of climate change and to uncover the adaptation practices. The first three were carried out in the rural community of Sakhwa Parsauni rural municipality while the remaining three were conducted in the bustles of the metropolitan city in Birgunj, both of these area lying within Parsa district. The members of the urban dialogues were all situated in Birgunj Chapkaiya area representing Ward number 1 of Birgunj Metro. The location where dialogues were conducted in rural and urban areas were community primary school and Annapurna Hotel respectively.

### **Rural Dialogues (November-December 2023)**

#### **Round 1- Rural Youth**

The initial session involved interacting with the youth in the village, where a focus group discussion (FGD) was conducted. Nineteen participants, aged between 18 and 25, took part, including 11 females and 8 males. Notably, a few participants were already engaged in work, providing a mix of perspectives from the younger generation, some of whom were actively involved in the workforce. The mode of communication was Nepali language which was understood by everyone.

#### **Round 2- Rural Elderly**

The subsequent session involved engaging with senior citizens from the village and conducting another focus group discussion (FGD). Sixteen participants, aged between 60 and 83, took part in this discussion, comprising nine females and seven males. This diverse group provided a broad spectrum of perspectives from the older generation within the community. Both Nepali and Bhojpuri (their local language) were spoken, which immediately was translated by the facilitator.

#### **Round 3- Rural Mixed**

The final session in the rural area brought together both youths and elders for mixed dialogues focused on the impacts of climate change and adaptation methods. In this session, a total of 15 participants were present, including 8 elderly individuals and 7 youths. The representation was balanced among senior members, with four participants from each gender. Among the youth participants, five were male and two were female, contributing to a diverse and inclusive discussion on the collective experiences and perceptions of climate

change within the community. The elderly mostly talked in Bhojpuri which was translated by the youths when sharing.

Upon completion of the rural dialogues in three sessions, a five-week time was taken to review and analyze the entire discussion. A report was developed in a written form in this duration and shared with everyone for the review and feedback. Also, planning for the next dialogue session to be conducted in the urban area was carried out in this interval. Upon identifying appropriate sites and the people that would typically represent urban communities, the next three dialogue sessions were planned and schedules were fixed accordingly.

### **Urban Dialogues (January 2024)**

#### **Round 4- Urban Youth**

The first session in the urban area involved interacting with the youth in the city, where a focus group discussion (FGD) was conducted at Annapurna Hotel in Birgunj. Fourteen participants, aged between 18 and 24, took part, including 6 females and 8 males. Notably, almost all participants were already engaged in work while also studying, providing a mix of perspectives from the younger generation. The mode of communication was Nepali language.

#### **Round 5- Urban Elderly**

The subsequent session involved engaging with senior citizens from the city, and conducting another focus group discussion (FGD). Seventeen participants, aged between 60 and 73, took part in this discussion, comprising ten females and seven males. Members of this group earned their livelihoods through diverse occupations, including tailoring, auto-rickshaw driving, shop keeping (grocery, shoes, electric appliances), labor work, and collecting scrap metal. The two eldest members relied on the government's monthly senior allowance for survival. This diverse group provided a broad spectrum of perspectives from the older generation within the community. Bhojpuri was spoken throughout the session which was partially understood by the outsiders (Restless Team along with photographers/videographers) present. However, it was also instantly translated by the facilitator himself along with staff members of local partner organizations without disrupting the session.

#### **Round 6- Urban Mixed**

The final session brought together both youths and elders for mixed dialogues focused on the impacts of climate change and adaptation methods. In this session, a total of 15 participants were present, including 9 elderly individuals and 6 youths. The senior members had five male and four female participants. Similarly among the youth participants, four were male and two were female, contributing to a diverse and inclusive discussion on the collective experiences and perceptions of climate change within the community. The dialogue was conducted in Bhojpuri language as it was all members' mother tongue that they were most comfortable in. Similar to the previous dialogues, the local organization's representative along with the session facilitator translated it to Nepali in real time without disrupting the session.

## **Proceedings**

In both dialogues with the rural and urban youths, the facilitator initiated the focus group discussion by posing straightforward questions about the environment, sparking dialogues among the youths. Following the identification of problems, participants were grouped into three, tasked with generating solutions. Each group presented innovative and thoughtful solutions, contributing to a collaborative and solution-oriented dialogue.

Likewise, with the senior participants both rural and urban, the facilitator began with similar broad questions about the environment, prompting immediate responses as participants shared concerns and recounted their experiences. However, when seeking solutions to the identified problems, the responses diminished significantly, leading to a more focused discussion on the challenges at hand. The dialogue with the senior group became predominantly centered on the issues raised, highlighting the unique dynamics of their perspectives on climate change.

During both of the mixed dialogue, both youths and elders shared the problems they had identified in the earlier discussions. Following this, participants were shuffled and divided into two groups, each consisting of both senior citizens and youths. They were tasked with discussing solutions, with a particular focus on the feasibility of these solutions for the elder participants. Subsequently, each group presented their proposed solutions along with an assessment of their practicality, fostering collaborative problem-solving between the generations. The mixed dialogues in the urban area centered more on the cultural evolutions due to the climate change impacts.

## Findings

### Climate Change Dialogue in Rural Community

#### Day 1 - Rural Youth

##### Overview of thoughts of youth:

- Hailstorms have not been seen for several years. This is a good thing since they won't destroy fields and crops as they used to.
- Winter used to bring widespread fog, but in recent years, there has been a significant reduction in its occurrence.
- A lot of money would be spent on warm clothes several years back in winter but fortunately because the winter is milder in recent years, that cost is spared.

##### Problems:

- The intensity of summer has steadily increased each year, reaching a juncture where the scorching **heat** has become truly unbearable.
- **Winter is less chilly** so it has become bearable.
- Monsoon **rain is unpredictable** so it hinders seasonal crop farming.
- **Hailstorms** could be seen every 2-3 years but since the last 4-5 years, it has not occurred.
- Similarly, the frequency of **lightning** has increased significantly along with casualties.
- **Strong winds** are observed increasingly around March/April (Chaitra/ Baisakh) bringing dust and haze. Since forest fires also occur during the same time, the ashes mix with the dust carried by the wind causing air pollution.
- Every year, **forest fires** have also increased in intensity and coverage due to human instigation and prolonged drought sessions from winter through late spring.
- The **groundwater level** has also decreased significantly around the village.



##### Solutions:

- To combat the **heat**, vegetation should be increased while farm activities should be conducted in morning or evening when the temperature is bearable. Similarly, trees and plants should be planted around the house as natural shades.

- To take advantage of the **less chilly winter**, sugarcane plantations should be encouraged with the help of the govt. because this crop requires less water.
- To ensure abundant **water in winter**, local government agencies should work on solutions that help to collect water. An example is building dams and rainwater harvesting.
- Such agencies should also subsidize the costs of water or provide underground pumps in various places to combat **water inconsistency** and scarcity.
- In an effort to mitigate the adverse effects of **lightning** and reduce casualties, governmental agencies should implement earthing systems within a one-kilometer radius within the village focusing on populated living areas.
- To reduce the impact of **strong winds**, roads should be black-topped to minimize dust, and planting trees alongside them can help slow down the wind.
- To prevent **forest fires** caused by human activities, raising awareness about their environmental impact is crucial. People should be informed about the consequences of such fires. Additionally, utilizing highly flammable materials like dead leaves and plants as compost for agriculture can reduce the risk of fires while promoting eco-friendly practices.

## Day 2 - Rural Elderly/ Older Generation

### Overview of thoughts of old population

- In the past, rainfall was abundant, ensuring lively rivers with ample water for swimming, drinking, and crop production. However, nowadays, these water sources like rivers, streams, and canals have diminished.
- “We have gone eight months whole without any rain.”
- Wild animals visiting their villages and causing harm have decreased due to deforestation.
- Deforestation is the main reason for water scarcity.
- All of these crises began around a decade ago.
- When they were recently married and relocated to the village, older women used to witness ample harvest, where a single crop yield could sustain the community for an entire year, with surplus remaining for the subsequent year.
- In times of abundant water, wheat harvesting was often overlooked, given its lower water requirements. However, with the current scarcity of water, wheat has become the primary focus of harvesting activities yet difficult to crop because of availability of minimum water to plant wheat.
- Flooding near the village is infrequent, occurring only during prolonged heavy rains in the Chure region.
- The only benefit from forest thinning is the reduction of wild animals endangering the lives of people and livestock.
- Due to water scarcity, more than 100 families from Sakuwa Parsauni village have already migrated after selling their lands and livestock. The remaining are the elderly only.

## Problems

- In the past, **rainfall** used to be abundant, but now, water sources like rivers, streams, and canals have dried up.
- Previously, channeling a pipe up to 5 ft was sufficient to draw **groundwater**. However, nowadays, water is scarcely accessible even at depths of 200 ft.
- Crop productions have witnessed a fifty percent decrease in recent years. Currently, only rice and wheat are viable for harvest.
- (**Livelihood**): The villagers are gradually becoming dependent on underground water and tap water distributed by the metropolitan close by. They cannot afford these services, so there is always a water crisis.
- Farming activities have declined significantly, leading to a lack of opportunities for the younger generation in rural areas. In response, parents are encouraging their children to migrate to metropolitan areas or even abroad in search of employment opportunities.
- (**Health**): Due to the intense heat, the older population have observed several health concerns such as high fatigue, indigestion, diarrhea and hypertension.
- **Vegetation farming** faces challenges beyond just crop production, with inconsistency arising from factors such as insufficient water, unpredictable climate conditions, and a rise in insect activity. Thus, vegetation production has declined as well.
- The sharp rise in **crop pests** has necessitated increased pesticide use, contributing to additional costs in farming. One of the causes for its increase is the use of underground water for farming. Both new and new types of pests have emerged due increased heat and humidity that are getting more resistant to pesticides.
- **Inconsistent farming**: Crop harvesting would normally start on a particular day i.e. **Ashar 15** (July 1) which is also celebrated as National Paddy Day. However, due to inconsistency in climate, weather and rainfall, crops are planted whenever it rains enough, usually, 2-3 weeks after this particular day





### Suggested solutions

- The older generation observes purchased water as the sole solution to alleviate water scarcity. However, recognizing its long-term impracticality, they see a bleak future in farming and agriculture.
- Having said that, for the remaining people to continue sustaining themselves in the village, government agencies should provide water either through underground pipelines or through tap water distributed at subsidized cost.
- While some have suggested it jokingly, a few individuals have even proposed the idea of migrating to hilly regions, such as Sindhupalchowk and Baglung districts for labor jobs.
- Water from boring should be made available and affordable by the respective agencies.
- Ensuring free higher education would enable youth from villages to pursue diverse career opportunities, breaking away from dependence on farming and allowing them to explore alternative avenues for income generation.
- To cope with daytime heat, locals seek refuge in the jungle, finding shade beneath the trees for the duration of sunlight. The type of vegetation chosen to get respite from the heat Sal, Camphor, Teak, etc.
- The ultimate solution for sustainability lies in the concerted effort to plant trees and conserve forests, thereby restoring and preserving water sources.

### Similarities between rural youth and rural old

1. Both the youth and elderly residents of rural areas have recognized shared phenomena, including a decrease in rainfall with heightened unpredictability, rising temperatures, milder winters, more frequent lightning, and a decline in strong winds.

2. Both generations have reached the consensus that the primary cause of water sources drying up is the deforestation of the jungle along with high intensity and low duration rainfall preventing water infiltration due to more runoff.
3. The decrease in the frequency of hailstorms is a positive development as it helps prevent damage to crops and vegetation.
4. A practical solution suggested to combat the intense heat is to engage in work early in the morning, before the sun reaches its peak. Villagers have already practiced 5 am to 11 am working hour during extreme sunlight.
5. A primary solution proposed to address water scarcity is the installation of deep ground water pipes by government agencies, as the locals lack the financial means to undertake such initiatives independently.

### **Differences between rural youth and rural old**

1. Rural youth have also identified forest fires and lightning as an imminent problem impacting their livelihoods. While the rural elderly mentioned frequent lightning, they don't perceive it as an immediate threat. On the other hand, the youth are more aware and acknowledge that many forest fires are caused by human actions, recognizing the wrongfulness of such activities.
2. Rural youths have suggested leveraging the mild winter conditions to plant sugarcane by seeking minimal assistance from the local government for this initiative.
3. While the older generations may not have recognized strong winds as a significant issue, the younger generation has identified it as problematic due to the dust particles carried in the air contributing to increased pollution.
4. Youths were quick to provide solutions to frequent lightning by suggesting implementation of earthing systems within a one-kilometer radius in the village focusing on populated living areas.
5. The rural older generation has also highlighted various livelihood impacts, including a growing reliance on expensive alternatives like ground water or metropolitan water distribution, a sense of hopelessness for the future generation in farming, and escalating health concerns due to intense heat.

### **Observations**

1. While the majority of rural elderly individuals highlighted various problems, the rural youth were proactive in identifying potential solutions.
2. The issues raised by the older generation were more personal and reflective of their experiential knowledge.
3. The tone expressed by the rural older generation was one of hopelessness and frustration, whereas the rural youth exhibited a mix of hopefulness and frustration in their expressions.
4. The solutions put forward by the elderly considered the welfare of future generations, whereas the youth proposed solutions aimed at immediately addressing the current issues at hand.
5. The older generation's difficulty to come up with solution may come from their inability to foresee a future in farming or agriculture.

6. The concerns voiced by the older generation centered around farming and agriculture, while the youth presented a more general narrative of their problems and solutions. This contrast may indicate the diverse fields of employment or career paths already pursued by the youth, which are not necessarily linked to farming or agriculture.

## **Findings from the joint dialogues**

### **Problems**

The issues raised in the previous dialogues remained consistent among both the youth and senior groups during the mixed dialogues. The commonly mentioned problems included heightened temperatures, milder winters, unpredictable rainfall, frequent lightning, declining groundwater levels, drying up of streams and rivers, and an increase in pests. This shared identification of key concerns emphasized the uniformity in the perceived challenges posed by climate change within the community.

### **Solutions**

The solutions were mainly proposed by the youths in the joint discussions with elders only agreeing to it if it was feasible. The proposed solutions for each of the problems were

Problems	Solutions
Heightened temperature	Farm activities should be conducted in the morning or evening when the temperature is bearable.  Trees and plants should be planted around the house as natural shades.
Unpredictable rainfall	Rainwater harvesting through dams, ponds, etc.
Frequent lightning	Implementing earthing systems within a one-kilometre radius within the village focusing on populated living areas
Declining groundwater levels	Subsidize the costs of water or provide underground pumps in various places.
Drying up of streams and rivers	Concerted effort to plant trees and conserve forests, thereby restoring and preserving water sources
Increase in pests	Use of household composts like cow dung, vegetable wastes, etc.

### **Dynamics (In joint dialogues)**

In the collaborative dialogues, both generations exhibited comfort and friendliness, with the youth taking the lead in group discussions. This camaraderie was likely facilitated by the shared nature of the problems faced by both age groups. While the older generation excelled in articulating their concerns, the youth took the forefront in proposing solutions. A

notable revelation during the mixed dialogues was the initial belief among elders that lightning was not a significant issue in recent years. However, when the youth presented evidence of increased lightning incidents, the seniors concurred. The smooth flow of the mixed dialogues may also be attributed to the prevailing culture of respect that the younger generation holds for the older generation. During presentations, the youth not only instilled hope in the seniors but also expressed eagerness to collaborate with external agencies, assuming leadership roles to instigate positive change and mitigate the impacts of climate change. This mutual respect and collaborative spirit between the generations played a pivotal role in fostering effective communication and problem-solving.

## Climate Change Dialogue in Urban Community

### Day 4: Urban Youth

#### Overview of thoughts of youth:

- The youths were prompt to grasp the discussion to be about climate change suggesting that more than a three-quarter of youth were familiar with the term.
- One of the youths even explained that the sole cause of worsening climate change impacts is due to human activities, particularly pollution.
- The youths all seem to agree that flooding, despite its challenges, has benefits for farming and agriculture. The mud left behind hydrates the soil and also leaves nutrients beneficial for crop production. Consequently, reduced flooding incurs additional costs for farmers, necessitating the use of water pumps and fertilizers..
- A notable weather anomaly observed by the youth was rainfall during the traditional Holi festival in March, a time typically associated with hot and dry weather.

#### Observed patterns:

- Over the past decade, the **summer pattern** in Birgunj has been marked by an increase in both the duration and heat intensity, particularly making June, July, and August unbearable.
- **Winters** have become **less chilly**, offering a bearable climate and saving costs on warm clothing.
- Similarly, the frequency of **lightning** has risen bringing more cases on casualties and injuries.
- **Hailstorms** have not been observed in the last few years even though they occurred frequently in their parents' time.
- The youths' sole memory of **flooding** dates back to 2019 when water reached their house situated 20-30 meters from the river. Even minor floods have become rare in the last five years.
- Gust winds have become less frequent, and unexpectedly, **tornadoes like whirlwinds winds (not tornadoes)** have begun affecting metropolitan areas in recent years.
- The **groundwater level** has also decreased significantly, leading to substantial drying up of the nearby major river, Sirsiya River.
- The **monsoon season** is **delayed** causing the harvesting time to be stalled as well.

- Birgunj has experienced a substantial decrease in rainfall to the extent that rain is absent for consecutive months.



### Solutions:

- To combat the **heat**, youth suggest temporarily migrating to hilly regions where the weather is more tolerable or planting trees for natural shade. They recommend maximizing the effectiveness of coolers and ACs by closing windows and shades, saving on electricity costs. Additionally, they advocate for health measures like showering with cold water and staying hydrated to mitigate heat-related health issues.
- To reduce casualties from **increased lightning**, youth recommend installing earthing systems in houses, avoiding outdoor activities during lightning, and ensuring electronic devices are turned off.
- Addressing the challenge of unusual **tornadoes like whirlwinds**, the youth propose planting trees to minimize wind impact, conserving existing trees, and managing debris to prevent damage to structures and reduce casualties.
- In response to the **groundwater depletion** issue, youth suggest reducing the use of chemicals harmful to plants, thereby preserving water-storing capacities. They also emphasize the importance of planting trees and implementing penalties for unauthorized tree cutting to safeguard against water depletion.

## Day 5 - Urban Elderly/ Older Generation

### Overview of thoughts of old population

- Almost all members of the urban elderly group were still working as tailors, auto-rickshaw drivers, shopkeepers, workers, and scrap metal collectors. The oldest two members present survive through a senior allowance given by the government every month.

### Observed Patterns

- **Winters** have notably become less severe compared to the past when harsh cold weather would cause numbness in hands and feet. This year in particular, they

perceive that winter has not peaked even in January since they only saw fog for 2-3 days last week.

- Rather than experiencing gust wind, they experience **unusual wind patterns**, including tornadoes like whirlwinds.
- A significant **decrease in flooding** is evident in recent years, attributed to the complete cessation of rainfall.
- **Rainfall** has become insignificant, occurring sporadically and minimally in the present times. Even in the typical rainy seasons like Monsoon, rains are not coming enough.
- **Lightning** incidents have increased, with a plausible connection drawn to reduced rainfall leading to dry conditions.
- There have not been any occurrences of hailstorms, gust winds or dust storms in the last 5 years which is perceived positively as it prevents crops, cattle and property damages.
- The **extended** duration of **summer**, sometimes lasting until November, contributes to a rise in skin and heart diseases. The necessity of coolers/ACs during summer incurs additional costs, including clinic expenses for diseases and increased electricity costs.
- The cases of **heat induced illness** have significantly increased in the city that are attributed to the crowding of patients in hospitals in scorching summers. Most of the patients visit hospitals at this time with the problems like skin diseases, dehydration, heart and kidney problems.
- Extreme heat in summer **disrupts education** as schools close down, affecting both children and adults unable to work efficiently due to overheated roads and constant sweating. There have been frequent cases of children fainting in the class due to excessive heat. Mothers of such children who were present in the dialogue session recall their time where such fainting was not seen at all.
- Extremely hot summer makes movement in the city quite difficult and this has further **impacted the livelihood of traders** who have observed a steep decline in customers during summer. Some of them reported no turn up of the customers for the three consecutive days, as people do not come out of their homes unless there is an emergency.
- The **depletion of groundwater** level has led to the drying of all groundwater pumps, necessitating the installation of taps through metropolitan lines and incurring additional water costs.
- **Mosquitoes** have increased significantly however, the threat is mitigated by the readily available mosquito repellents. Due to less severe winters, mosquitoes are unexpectedly available in the peak winter seasons making mosquitoes available in all seasons.
- **Snakes** are more common near riverbanks due to the heat, but the impact is limited as their numbers have decreased with urbanization, primarily affecting marginalized individuals situated directly at the banks.
- Though water scarcity in summer is getting alarmingly high, nobody seems to have any idea about **rainwater harvesting** techniques and practices.



### Suggested solutions

- The older generation recognizes that a major contributor to **groundwater depletion** is the presence of blacktopped roads and cemented areas around ground water taps, hindering used water from seeping into the ground for recharge. The solution proposed to address the water crisis is reducing such cemented shields that impede water replenishment in the ground.
- An unique suggestion from urban elders for **lightning** mitigation involves constructing houses with a maximum of 2 stories from the idea that if lightning strikes, it would target the tallest trees instead.
- To **combat the water crisis**, an overarching solution proposed is government assistance for installing boring (deep groundwater pump) and tap services to each municipal household. The high costs involved make this option unaffordable for everyone without external support.
- The urban population has already established a reliance on coolers and ACs as an adaptation measure to **extreme heat**.

### Day 6: Joint dialogue between Urban elderly and Urban youths

The mixed intergenerational dialogue in the urban area slightly differed from the rural dialogues as the conversations during the group discussion flowed endlessly around the cultural impacts of climate change and how they have been adapting to it over time. Both the elderly and youth eagerly shared the evolution of traditions they have witnessed due to climate change.

## **Cultural impacts along with their adapting methods**

### **Weddings**

Weddings in *Terai* (Southern Plains) are a huge occasion for the community. As part of the wedding tradition, the act of giving *dahej* or *daijo* (dowry) by the bride's family to the groom's family is also huge. Common gifts over the years have always been motorbikes, cash, furniture or electric appliances. Due to the extreme heat in the summer, demands for Air Conditioners as *dahej* have surged. In their youth, the elderly members reminisced that weddings lacked soft drinks or iced beverages, featuring only water, tea or sharbat (a juice made from concentrated syrup and water). Over the years, the food and drink culture has evolved due to extreme heat, with soft drinks and ice-cream becoming a common item at these events. Although wedding timings are typically chosen based on auspicious days throughout the year, many people prefer January or February, considering them the coolest months in Birgunj. Likewise, the preferred wedding venue has also evolved from homes to hotels equipped with proper cooling systems, adding to the financial burden for the bridegroom's parents as they bear all the wedding costs. Some elderly even zestfully expressed that winter is the ideal season for marriage ceremonies. In winter, they can wear fancy clothes and put heavy makeups on the face without sweating excessively, and the cooler temperatures allow for better digestion of the delicious food, unlike the challenges posed by the intense summer heat.

### **Chhath**

Chhath is a Hindu festival worshipping the sun usually celebrated in October or November depending on the lunar calendar. The Chhath *puja* (prayer) is done by dipping half of the body in rivers or lakes for long periods of time facing the sun. An unexpected benefit of climate change for the Hindu locals during Chhath is that the river water has become warmer due to the increased heat even in the month of October/November. In the past, the water used to be so cold that the elderly had to warm themselves in front of a fire immediately after getting out. However, with the current warmer river temperatures, taking extended dips in the river has become a more rewarding experience.

### **Gender impact due to climate change**

As conversation arose about the hardships of extreme heat and groundwater depletion in Birgunj, both younger generations and older generation males and females seem to agree that women have it harder adapting to it due to cultural aspects. Senior male members expressed that if the heat becomes unbearable inside their homes, they have the freedom to escape to places with cooling systems. However, they acknowledged that women, responsible for household chores and lacking the freedom to leave the house whenever they want, endure the heat more intensely. Additionally, some mentioned that men have the freedom to wear as little as they want to escape the heat, whereas women have to cover themselves from head to toe, making the heat more challenging for them. Even during events or gatherings, it is the women who have to manage water for the kitchen, even in the face of shortages.

## Daily cultural rituals

Young members enthusiastically shared the differences between their parents'/grandparents' rituals and theirs due to the current environmental changes due to climate change. One cultural aspect that the youth shared, and the elderly fully agree on, is the impact of the water crisis not only on weddings but also on death rituals. These rituals require ample water for prayers and also require fasting, which becomes challenging during water shortages and extreme heat. Similarly, another challenge shared by female Muslim youth was the difficulty in fulfilling their religious duties due to water shortages and extreme heat. Before praying, they must purify themselves by washing, and the scarcity of water made this ritual challenging. Additionally, the continuous sweating made it difficult to concentrate on their prayers as it is essential to cover themselves while praying. She further added that, in the time of Ramadan (Holy month of Muslims celebrated before Eid) they cannot eat anything or even drink water between dawn to dusk, that made fasting in this season extremely difficult due to excessive hot climate. Youths and elderly both added the additional health risks such as heart issues, skin diseases and mental stress caused by such environmental occurrences.





### Interesting occurrences and observations by the participants

Last year, the youths expressed that marriages were all postponed due to the water shortage caused by groundwater depletion. However, last July, one of the youths' neighbors had to marry so the family had to appeal to the metropolitan to supply them with water for the wedding by paying a hefty amount of NPR 65,000 (USD 500).

Similarly, when fasting for *Ramadan* during the water crisis, they had to stock water in a jar in the early mornings in order to clean themselves for the fasting ahead.

Several youths shared that both genders, especially females, are slowly adopting western attire for daily wear such as t-shirts and loose pants because of the heat instead of a more traditional *Saari*.

Others added that due to increased health issues due to extreme heat, the overall life expectancy of people have also slightly decreased.

Some social issues arising due to harsh weather include an increase in petty crime due to the expensive lifestyle and a reduction in community engagements, as people tend to avoid going outside during the heat.

One positive aspect of the extreme weather for the elderly is that, with more free time during the day in summer, they have utilized it by excelling in using technology such as smartphones and computers to pass the time.

A story shared by Rita Devi Kalwar:

"When I was very little, around 8 years old, Birgunj experienced dense fog for two whole months. During that time, fire became a necessity for warmth. The wheat and grains stored were all wasted due to molds, so we had to get by eating only corn. Additionally, frequent flooding occurred during those times. Mosquitoes were rampant, and we used smoke from the subdued fire as a natural repellent to control their presence."

### **Dynamics (In joint dialogues)**

In the collaborative dialogues, both the youths and elders had no issue being candid in front of each other. Both generations showed respect for what each group was saying. When a person shared their observations or ideas, other members were quick to add and share more about their experiences. Sometimes, when the elderly had difficulty articulating their ideas, the youths were quick to step up and assist.

### **Similarities between urban youth and urban old**

1. Both the youth and elderly residents of urban areas have recognized shared phenomena, including a longer and more intense summer, more frequent lightning, and groundwater depletion causing the taps to dry.

### **Differences between urban youth and urban old**

1. The urban elderly were vocal about their problems but struggled to offer concrete solutions. On the contrary, the urban youth demonstrated a balanced approach, effectively addressing issues and providing solutions.
2. One of the suggested ideas by the urban youth to escape the heat was temporarily relocating. Interestingly, during the discussions with urban old, they expressed adamancy in staying in Birgunj, regardless of the difficulties, instead of considering relocation.
3. A recurring concern voiced by the urban elderly was the impact of school closures due to heat on children's education. In contrast, the main focus of urban youth centered around the critical issue of water depletion.

### **Observations**

1. Both generations are aware of the unusual phenomenon brought about by climate change with few members from each generation even understanding the scientific aspects of the problem.
2. The older generation understands the importance of engaging in dialogues on imminent issues such as climate change and thus, expresses eagerness to expand their understanding of such matters.
3. While both generations shared concerns about the threat of climate change, the older generation exhibited slightly more interest in comprehending and addressing the issue.

4. Urban youth articulated the problems with a professional demeanor, whereas urban elderly conveyed a more anxious tone, suggesting the climate crisis's palpable impact on their livelihood.

## Comparing Rural and Urban Discussions

S.N	Rural Youth and Elderly	Urban Youth and Elderly
1.	The problems articulated were predominantly centred around agriculture and farming, underscoring the agricultural challenges faced by the community.	The expressed concerns primarily revolved around their livelihood, specifically addressing issues like water depletion and the hindrance posed by extreme heat to their work.
2.	The rural elderly consistently voiced concerns for the younger generation.	The urban elderly primarily centred their focus on their livelihood. Their perspective carried a more liberal attitude, indicating the notion that when children get older, it will be their issue to contend with.
3.	Members did not pursue specific temporary solutions for the issues they faced due to financial constraints.	Most members were able to afford basic utilities that could temporarily alleviate the concerns they faced.
4.	Rural elderly lacked confidence in government assistance and were prepared to relocate to the hills if necessary.	Urban elderly, on the other hand, were hopeful for government support to alleviate the water crisis and had no plans to relocate elsewhere.
5.	Rural youths exhibited greater enthusiasm and confidence as social agents to address environmental issues, even expressing a willingness to collaborate with the local government.	Urban youths conveyed their ideas in a neutral tone, suggesting a reliance on a third party to implement these solutions rather than actively advocating for them.

### Similarities

1. Senior participants from both areas were vocal in expressing issues, yet less proactive in offering solutions. In contrast, both rural and urban youths took the lead in discussions, particularly focusing on proposing solutions for the problems they succinctly expressed.

## Conclusion

The information shared in rural and urban dialogues provide rich information that provides an understanding into the unique challenges posed by climate change and the varied ways communities are adapting to these changes. Key concerns shared by both generations in rural and urban areas highlights the uniformity in the perceived challenges posed by climate change within the community. The solutions proposed, particularly by the youths, reflect a proactive approach to address issues such as heightened temperatures, unpredictable rainfall and depleting groundwater levels.

In the rural context, the focus was mainly on the agricultural challenges that emphasized the impact of climate change on the farmers' source of living. The proposed solutions, such as conducting farm activities during bearable temperatures and implementing earthing systems for lightning protection, showcase a practical understanding of the local environment. On the contrary, the urban dialogues delved into the cultural impacts of climate change on daily activities, health, education, weddings and religious rituals. The evolving traditions and adaptations to extreme heat, such as the increased demand for air conditioners in dowry exchanges, illustrated the cultural shifts within the urban community. The gendered impact of climate change, particularly on women, is acknowledged by both generations, highlighting the need for gender-sensitive and children focused climate adaptation strategies. The fundamental difference between urban and rural dialogues was rural youth seemed more proactive than their urban counterparts in terms of leading and collaborating with any initiatives that are related to climate adaptation.

The findings suggest that while both rural and urban communities face distinct challenges, there is a common thread of resilience and adaptability. The collaborative nature of the dialogues, with open communication between generations, provides a platform for shared experiences and learning. For rural areas, suggested adaptation measures include community-led initiatives for rainwater harvesting to address unpredictable rainfall patterns. Similarly, external mediation between the local government and the community for subsidies for water costs or the installation of underground pumps to mitigate declining groundwater levels should also be further explored. Similarly, for urban areas, it is imminent to develop and implement climate-resilient infrastructure to address water scarcity and extreme heat challenges. As a cross-cutting solution, children and gender-sensitive policies and interventions to address the disproportionate impact of climate change on women should be advocated in both rural and urban areas.

In conclusion, the collaborative dialogues offer a foundation for community-driven climate change adaptation, emphasizing the importance of inclusive and context-specific strategies.

## Quotes

### Day 1

#### Dialogues with Rural Youth

1. "We used to have floods a decade ago. When we were children, we used to run to get a glimpse of it. It's been years since we saw any flood since then."  
-Sangita Shrestha, 23
2. "Winter used to peak in January/ February. It's almost winter, yet we are still soaked in sweat."  
- Ram Kadel, 25
3. "Heat is unbearable during summer when we need to work in fields. Weather is perfect during winter, but we do not have any work then so we just sit in our jackets all day."  
- Sangita Shrestha, 23

### Day 2

#### Dialogues with Rural Elderly

1. " Field work has decreased so much that we encourage our children to go abroad rather than follow our footsteps."  
- Parminiya, Uraw, 60
2. "When I got married and moved here, crops would be so abundant that it used to be sufficient for the whole year and would still have some of it left."  
- Parminiya Uraw, 50
3. " All the trees that store water around here have been cut which is why we have scarcity of water."  
- Sailo Shrestha, 68
4. "Us and our spouses are the only ones left here. All our children have settled in cities. There is no hope here because there isn't any crop farming left to do without water. There are no employment opportunities here either for sustenance."  
- Anupi Devi, 63

### Day 4

#### Dialogues with Urban Youth

1. "...Climate change is such an issue that is happening solely due to the impacts of human activities such as pollution." -Nakul Thakur Lohar
2. "Traditionally, harvesting day is July 1 but this year, it got delayed unusually by around three weeks." - Aditya Kumar Shah
3. " Since the last decade, we have not experienced any major flooding so we have stopped fearing it altogether." - Aditya Kumar Shah

4. "Flooding is good because the soil it left behind is used to hydrate and energy the fields. But now, we have to ready the fields ourselves for harvest by using a pump to bring water." -Sajid Aalam
5. "One of the reasons why there is a decrease in rainfall might also be due to overconsumption of water." - Sahina Khatun

## Day 5

### Dialogues with Urban Elderly

1. "The blazing sun that we experience today wasn't this intense two-three decades back." -Ram Avatar Tiwari
2. "We used to have such freezing winters a decade back that our hands and legs would be numb and shivering due to cold." - Ramdev Mahatto
3. "It's already January yet winter is still not here yet. We've only had fog for two three days, that's it." - Rita Devi Kalwar
4. "When we were younger, it would be hot around mid-April and would get hotter till the end of May. Now, mid-April is really hot and May is simply intolerable." - Muhammad Wakil Miya
5. "All the groundwater pumps have dried up so the municipality had to supply tanks of water to us in the summer.' - Ram Avatar Tiwari
6. "When I was 8 years old, fog covered the whole city for a whole of 2 months, preventing any sunlight from seeping through. During that time, all our stored grains were spoiled due to lack of sunlight so we had to survive by only eating corn" - Rita Devi Kalwar

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