SIGRA

Strengthening Investments in Gender-Responsive Climate Adaptation

CLIMATE RISK AND VULNERABILITY ASSESSMENT

AKATSI NORTH DISTRICT

SUMMARY VERSION

Plate 1: *Only engineered dam in ANDA partially covered with water plants in Ave Afiadenyigba*
Credit: *Portia Adade Williams and team, 2024*

Cowater Ghana

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KEY TAKEAWAYS

Akatsi North is experiencing intensifying climate variability marked by erratic rainfall, dry spells, and localized flooding, which are threatening agriculture, water security, and livelihoods across the district. Vulnerable groups—especially women, youth, and persons with disabilities—face the greatest burden but remain under-resourced and underrepresented in adaptation planning. Agriculture and water emerged as the most climate-sensitive sectors, with projections under high-emission scenarios pointing to hotter and drier conditions in the coming decades. Community consultations reveal that while local coping strategies exist, they remain fragmented and under-supported, particularly for high-risk communities like Nyitawuta, Dedzepe, and Hadave. The Climate Risk and Vulnerability Assessment (**CRVA**) highlights the urgent need for a costed, district-level Climate Adaptation Plan that prioritizes gender equity, localized resilience building, and inclusive decision-making. Aligning local realities with national adaptation frameworks will support Akatsi North to turn climate vulnerability into an opportunity for sustainable and inclusive development.

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01

Climate change is already disrupting farming, water access, and incomes across Akatsi North.

Communities like Ave Xevi, Avevi, and Kpeduhoe report worsening droughts, erratic rainfall, and heatwaves that are reducing crop yields, drying up local dams, and threatening food security and income.

02

Women are bearing the brunt of climate impacts with fewer resources to adapt.

In areas like Ave Dakpa and Ave Dedzefe, women walk longer distances for water, manage dwindling food supplies, and juggle caregiving responsibilities during climate shocks—all while lacking access to land, credit, and agricultural inputs.

03

Youth are disengaging from farming due to climate pressures and limited opportunities.

Younger residents in communities such as Nyitawuta and Ave Xevi are increasingly frustrated by low yields and lack of vocational training opportunities, leading to migration and departure from traditional livelihoods.

04

Access to water is a critical challenge across the district.

Broken boreholes and drying dams in Avevi, Ave Xevi, and Kpeduhoe leave entire households—especially female-headed ones—without reliable water for farming or household use, increasing stress and health risks.

05

Health and education systems are under strain from climate hazards.

Heatwaves and flooding are disrupting school attendance and increasing cases of malaria and waterborne diseases, especially in underserved communities like Avevi and Kpeduhoe where health services are limited.

06

Local adaptation efforts exist but remain small-scale and under-supported.

Some farmers are using improved seeds, composting, and diversified crops, but without access to reliable markets, tools, or technical guidance, these climate-smart practices struggle to expand.

07

Poor infrastructure is amplifying climate risks.

Bad road conditions in Nyitawuta and Ave Xevi increase post-harvest losses and make it difficult to access markets or evacuate during emergencies, while non-functional dams and boreholes worsen water stress.

08

Women, youth, and persons with disabilities remain underrepresented in adaptation decisions.

Despite being highly vulnerable, these groups often lack a voice in community meetings and planning forums. This limits the effectiveness and fairness of local adaptation strategies.

09

Traditional knowledge is valuable but overlooked in formal planning.

Farmers and elders across Akatsi North have deep knowledge of seasonal changes, land use, and risk reduction. However, this wisdom is rarely integrated into official district plans or technical projects.

10

A well-funded, inclusive Climate Adaptation Plan is urgently needed.

The CRVA shows that Akatsi North must invest in practical, community-led solutions—especially for water, agriculture, infrastructure, and gender equity. A costed adaptation plan can guide action, attract funding, and ensure no group is left behind.

A INTRODUCTION

Akatsi North District faces rising climate-related pressures that threaten lives, livelihoods, and local development. This Climate Risk and Vulnerability Assessment (CRVA) was conducted to generate locally grounded evidence to guide inclusive adaptation planning. The assessment focused on how climate risks such as erratic rainfall, heatwaves, and seasonal flooding affect key sectors like agriculture, water, and health—particularly for vulnerable groups such as women, youth, and persons with disabilities. The findings are intended to support a district-level Climate Adaptation Plan that responds directly to on-the-ground realities.

Plate 2: *Only engineered dam in Ave-Afiadenigba partly covered with plants*
Credit: *Portia Adade Williams and team, 2024*

A1. Background

This summary report presents key findings and recommendations from the Climate Risk and Vulnerability Assessment (CRVA) conducted in Akatsi North District under the Strengthening Investments in Gender-Responsive Climate Adaptation (SIGRA) project. Funded by Global Affairs Canada and implemented by Cowater International, SIGRA supports Ghana's National Adaptation Plan (NAP) by helping local governments strengthen their systems, plan for climate risks, and promote inclusive adaptation strategies.

Coordinated by the Environmental Protection Agency (EPA), the NAP prioritizes **decentralized, locally driven adaptation**. As climate impacts become more frequent and severe, districts like Akatsi North face growing challenges—ranging from flooding and drought to water scarcity and agricultural disruption. Responding effectively requires not only technical solutions but also fair and inclusive approaches that consider the unique needs of women, youth, and other vulnerable groups.

A2. Scope and Objectives of the Assessment

The Akatsi North CRVA was undertaken to:

- Identify key climate hazards such as droughts, flooding, water scarcity, and heatwaves.
- Assess the district's physical, social, and economic vulnerabilities across sectors.

- Elevate community-level perspectives—especially from vulnerable and underserved groups.
- Recommend context-specific and inclusive adaptation priorities aligned with district development goals.

A3. Prioritizing Gender and Vulnerability

Social inclusion and gender equity were central to the Akatsi North assessment. Groups most vulnerable to climate shocks—including **women, youth, elderly and persons with disabilities (PWD)**—were meaningfully engaged throughout the process.

Special attention was given to:

- The disproportionate burden on women during climate stress (e.g., water collection, caregiving, food insecurity).
- Women's limited access to land, credit, agricultural extension, and leadership platforms.
- The exclusion of vulnerable groups—especially women, youth, and persons with disabilities—from decision-making and adaptation planning forums.
- The perspectives of young men, particularly those disengaging from farming due to declining yields and lack of alternative livelihoods.

A4. Profile of Akatsi North District

A4.1 Geography and Climate

The Akatsi North District, located in the southeastern part of Ghana's Volta Region, lies at approximately 6° 21'46" N latitude and 0° 51' 45" E longitude. With **Ave Dakpa** being its administrative capital, the district covers an area of approximately 324 km^2. It lies within the coastal savannah equatorial climate zone, with a gently undulating landscape and elevations ranging from 10 to 50 meters above sea level.

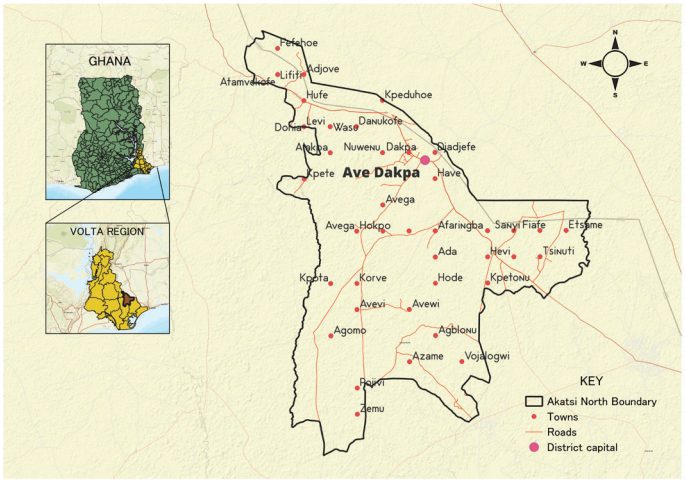


Figure 1. Map showing the Akatsi North District with major communities

The district is bordered by Agortime Ziope, Akatsi South, Ketu North, and the Republic of Togo. The area experiences high temperatures (21°C to 34.5°C), relative humidity of 85%, and a bimodal rainfall pattern, making it suitable for agriculture but prone to flooding and erosion. Key rivers such as the Lotor and Tordzie support the district's drainage system.

Figure 1 presents historical climate data for Akatsi, detailing temperature patterns, rainfall distribution, and seasonal trends over the past 30 years.

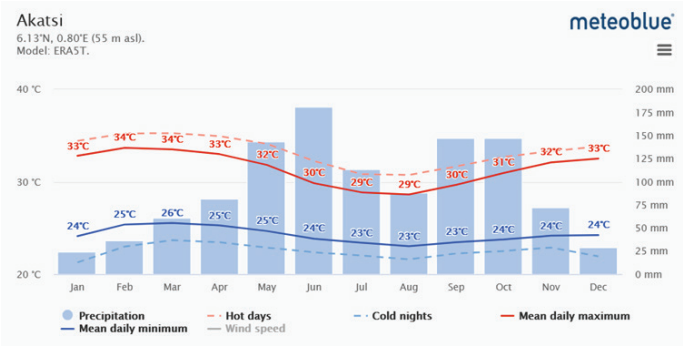


Figure 2: Maximum temperature patterns in Akatsi District
Source: www.meteoblue.com (2024)

A4.2 Social Demographics

The district is predominantly rural, with key settlements in Ave-Dakpa and Xevi. It has a 2.6% annual population growth rate and is characterized by extended family structures. (GSS, 2014). Infrastructure is limited, with only one major road linking the district to regional centers. Educational attainment is low, and access to health and social services remains a challenge, particularly for women and vulnerable groups.

A4.3 Economic Activities

Akatsi North faces a growing climate crisis marked by increasingly **erratic rainfall, prolonged dry spells, seasonal flooding**, and **rising temperatures**. These hazards are disrupting livelihoods, threatening food and water security, and intensifying socio-economic vulnerabilities across the district.

Key climate-related hazards include:

- **Erratic and delayed rainfall,** affecting planting seasons and crop yields.
- **Prolonged dry spells and heatwaves**, leading to water shortages and livestock stress.
- **Seasonal floods**, particularly in low-lying areas, causing erosion, displacement, and damage to infrastructure.
- **Windstorms and bushfires**, occasionally reported, which destroy assets and deepen environmental degradation.

These risks are further amplified by:

- The district's **low elevation and high dependence on rain-fed agriculture**.
- Widespread reliance on **natural water sources** (dams, streams) vulnerable to seasonal changes.
- **Gendered and social disparities** in access to land, finance, extension services, and decision-making spaces.

Women, youth, and persons with disabilities—already constrained by limited adaptive resources—face the **highest exposure and lowest resilience**. Without targeted interventions, climate shocks are likely to deepen poverty, food insecurity, and migration pressures in Akatsi North.

B METHODOLOGICAL APPROACH

The CRVA followed a participatory and gender-responsive approach, combining scientific climate data with community-based insights. Ten communities were selected across different risk zones using participatory ranking. The process included a stakeholder workshop, 373 household surveys, and over 30 focus group discussions. Climate projections were drawn from CHIRPS, ERA5, and CMIP6 datasets under SSP2-4.5 and SSP5-8.5 scenarios. The integrated methodology allowed for a comprehensive understanding of both biophysical hazards and social vulnerabilities across the district.

Plate 3: *Focus group discussions*
Credit: *Portia Adade Williams and team, 2024*

B1. Introduction

The Climate Risk and Vulnerability Assessment (CRVA) conducted in Akatsi North District employed a participatory, mixed-methods approach grounded in the Intergovernmental Panel on Climate Change (IPCC) AR5/AR6 frameworks. This approach analyzed climate risks as the interplay of three interdependent elements: **hazards**, **exposure**, and **vulnerability**. The assessment placed a strong emphasis on **gender dynamics**, recognizing that women, youth, migrants, persons with disabilities (PWDs), and elderly populations face **disproportionate climate burdens and lower adaptive capacity**.

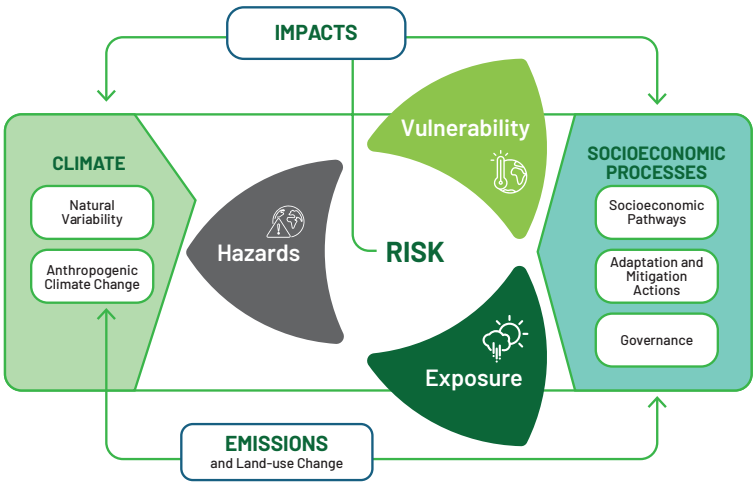


Figure 3. The IPCC Risk and Vulnerability Framework illustrating the interaction of hazards, exposure, and vulnerability in shaping climate risks, with socio-economic processes influencing overall resilience

B2. Three-Stage Assessment Process

The three-stage approach was followed to systematically identify, analyze, and validate climate risks and adaptation priorities (Figure 4). This structure ensured scientific rigor, local relevance, and inclusive participation across all phases of the study.

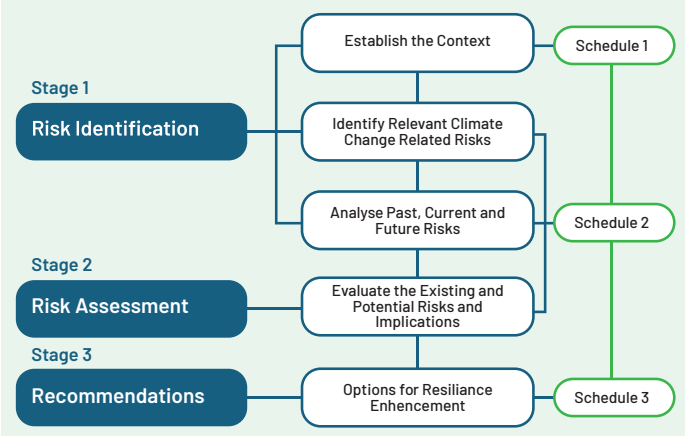


Figure 4: Methodology for climate change risk assessment for the Akatsi North

B2.1. Risk Identification

The risk identification phase was grounded in a comprehensive **desktop review**, synthesizing available data on climate hazards, vulnerabilities, and development constraints across Akatsi North. Sources consulted included:

- Ghana's National Adaptation Plan (NAP).
- The Akatsi North District Medium-Term Development Plan (2022–2025).
- Reports from the Ghana Meteorological Agency and Water Resources Commission.

- Peer-reviewed literature and climate vulnerability studies relevant to the Volta Region.

From this review, **five core climate hazards** emerged as most critical for Akatsi North:

- **Seasonal floods**, particularly in low-lying communities like Avevi, Zemu, and Dedzepe.
- **Prolonged droughts and dry spells**, affecting areas such as Nyitawuta and Hadave.
- **Erratic rainfall**, undermining agricultural predictability and planting seasons.
- **Soil erosion**, driven by deforestation and poor land use practices.
- **Heatwaves and temperature extremes**, which are increasingly affecting health and crop viability.

The desktop phase also surfaced **underlying structural vulnerabilities**—notably **gender inequality** in access to land, water, agricultural inputs, and decision-making spaces. These social dynamics significantly amplify the exposure and sensitivity of certain groups, particularly **women, youth, and persons with disabilities**.

B2.2. Risk Assessment

This stage involved multi-tiered fieldwork using both qualitative and quantitative tools to deepen the understanding of exposure, adaptive capacity, and gendered vulnerabilities.

Stakeholder Workshop and Participatory Exercises

A district-wide stakeholder workshop brought together over 50 people, including traditional leaders, Assembly members, women's groups, youth, CSOs, and technical officers. Participants:

- Mapped local hazards (floods, drought, water scarcity),
- Identified the most vulnerable communities,
- Created seasonal calendars and risk timelines,
- Held gender-focused sessions to understand how climate risks affect women and men differently.

These insights formed the foundation for selecting communities and designing further research activities.

Plate 4: Photocall of participation in the first stakeholder engagement workshop at the Akatsi North District Assembly building.
Credit: Portia Adade Williams and team, 2024

Participatory Community Selection

Ten communities were selected using a participatory ranking system based on vulnerability. Factors considered included:

- Exposure to hazards like drought or floods,
- Poor access to services or infrastructure,
- Poverty levels and land degradation.

The selected communities represented different risk levels and geographic zones, allowing for a balanced view of climate vulnerability across the district as seen in **Table 1**.

No.	Level of Vulnerability	Selected Community for FGD	Selected Community for Survey
1	2 = Moderate	Avevi	Avevi
2	3 = High	Ave Dedzefe	Ashiagborvi
3	2 = Moderate	Ave Afiadenyigba	Ave Afiadenyigba
4	1 = Low	Ave Dakpa	Ave Dakpa
5	2 = Moderate	Ave Xevi	Ave Xevi
6	3 = High	Nyitawuta	Nyitawuta
7	3 = High		Dedzepe
8	2 = Moderate		Kpegbadza
9	3 = High		Hadave
10	3 = High		Zemu

Table 1: Communities selected for FGD and survey
Source: Akatsi North Stakeholder Workshop

Focus Group Discussions (FGDs)

In each of the ten communities, separate FGDs were held with women, men, youth, and other groups. These group discussions explored:

- First-hand experiences with climate shocks,
- Local coping strategies,
- Barriers to adaptation — such as lack of land rights or finance for women,
- Community perceptions of climate change.

The FGDs allowed for deep, open conversations that revealed how gender, age, and social roles shape vulnerability and resilience.

Plate 5: Focus group discussions. Credit: Portia Adade Williams and team, 2024

Household Questionnaire Surveys

A structured household survey was conducted in all ten selected communities. A total of **373 households** were randomly selected based on population size and vulnerability level.

The questionnaire covered:

- Income sources and food security,
- Awareness of climate risks,
- Coping strategies and access to adaptation support,
- Gender roles in decision-making and access to resources.

The survey provided valuable data on how different households are impacted and what they need to adapt better.

Climate Modeling and Scenario Analysis

To understand future risks, the study employed:

- **CHIRPS** for historical rainfall (1991–2020).
- **ERA5** for historical temperature extremes.
- **CMIP6** ensemble projections for SSP2-4.5 and SSP5-8.5 pathways.

Climate indices used included:

- **Precipitation:** Rx1day, Rx5day, CDD, R95p
- **Temperature:** TXx, TNx, TXn, TNn

Time horizons assessed:

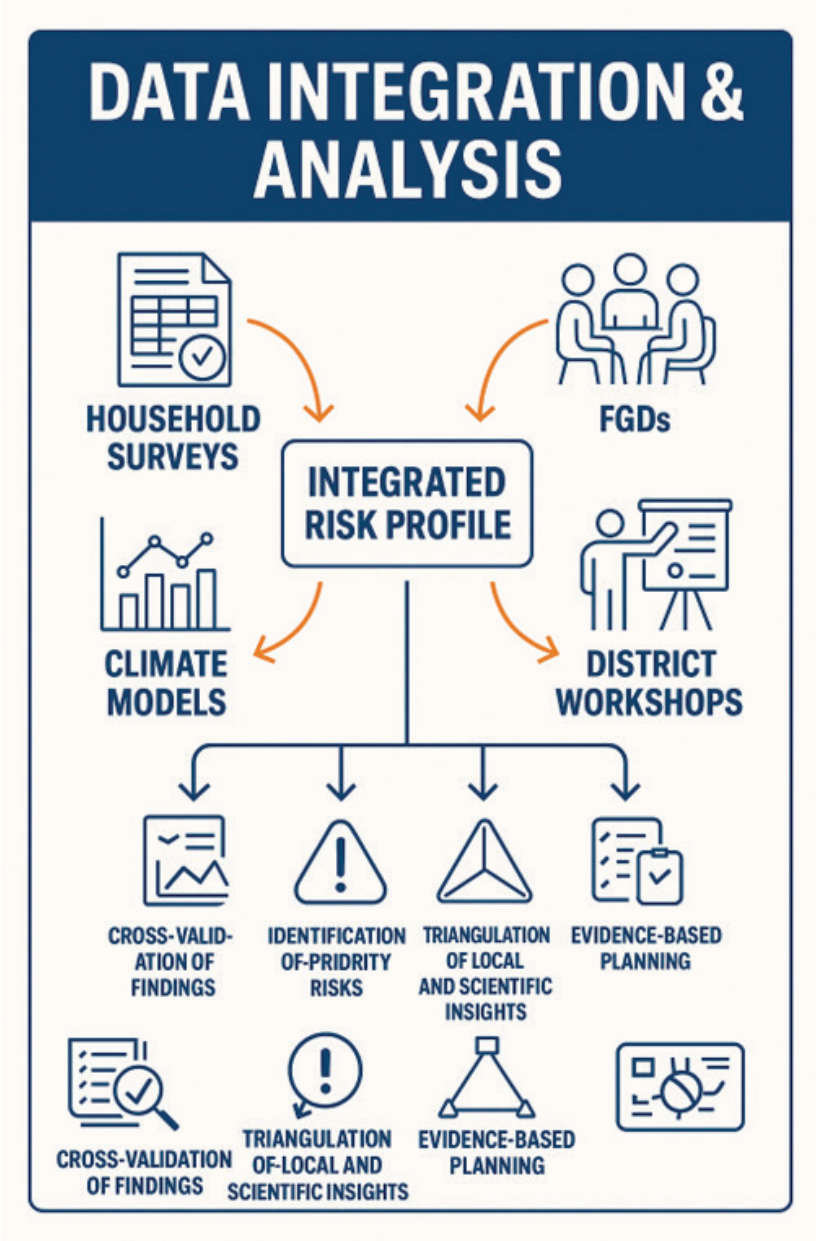
- Near-term: 2021–2040
- Mid-century: 2041–2060
- End-century: 2081–2100

Model outputs were contextualized using **seasonal calendars and FGD insights**, ensuring alignment between climate science and community experience.

All the data — from surveys, FGDs, workshops, and climate models — were brought together and analyzed side-by-side. This allowed the team to:

- Cross-check findings and identify common trends,
- Compare community insights with technical projections,
- Pinpoint the most at-risk groups and sectors.

This combined approach provided a well-rounded picture of vulnerability in Akatsi North and set the stage for targeted, inclusive adaptation actions.



This table illustrates the timing of key agricultural, social, and hazard-related activities in Akatsi North over the calendar year.

Events	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Planting			maize, tomato, cassava, beans, groundnut, rice					maize, tomato, cassava, beans, groundnut, rice				
Disease pattern (malaria/cold)			Malaria/cold						Malaria/cold			
Harvesting							Farm produce				Farm produce	
Trading	Farm produce, clothing, beverages, toiletries, cosmetics											
Drought/ bush burning	Collecting of firewood											Collecting of firewood
Food scarcity												
Childcare	Vaccination, Nutrition, Growth monitoring, Hygiene & Sanitation											
Festival		Ave-Bliza										
Cattle herding	All year round											

Table 2: Seasonal calendar of climate induced activities
Source: District Stakeholder Survey, September 2024

This matrix shows how men and women engage differently with climate-related activities throughout the year, revealing gendered responsibilities and risks.

Events	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Drought & bush burning	+											+
Land preparation		+ o					+ o					
Planting (GAP)			o	+				o +				
Harvesting	o						o					o
Post-harvest activities	o						o	o	o			o
Cattle grazing	+	+	+	+	+	+	+	+	+	+	+	+
Firewood harvesting											+	o
Traditional festivals			+ o	+ o								
Food security	+ o	+ o							+ o	+ o		
Marketing	o							o	o			o
Agro-processing	o +	o +	o +								+ o	+ o
Dry season farming	+ o											+ o
Domestic water	+ o	+ o	+ o	+ o	+ o	+ o	+ o	+ o	+ o	+ o	+ o	+ o

Table 3: Vulnerability matrix of annual climate induced activities
Source: District Stakeholder Engagement, September 2024

Key: O = Women *+ = Men*

This table assesses how various climate hazards (like droughts, floods, pests) impact specific livelihood activities, indicating the severity of risk faced by different groups.

Event	Erratic Rains	Flood	Drought	Bush Fires	Pest Outbreak	Diseases
Fires	1 3	2 3	3 2	3 3	3 3	3 2
Crop production	3 1	3 2	3 1	3 2		
Post-harvest activities	1 3	2 3	3 3	1 3	1 3	3 3
Livestock	3 1	3 2	1 2			
Agro-processing	3 1	3 1	2 2			3 1
Marketing	3 1	2 2	3 2			2 1
Domestic water	3 2	3 2	3 3	3 3	2 2	2 2
Food security						

Table 4: Vulnerability matrix of climate impact of activities
Source: District Stakeholder Engagement, September 2024. Level of Vulnerability: 1 - Low, 2 - Medium, 3 - Hi

Key: Women Men

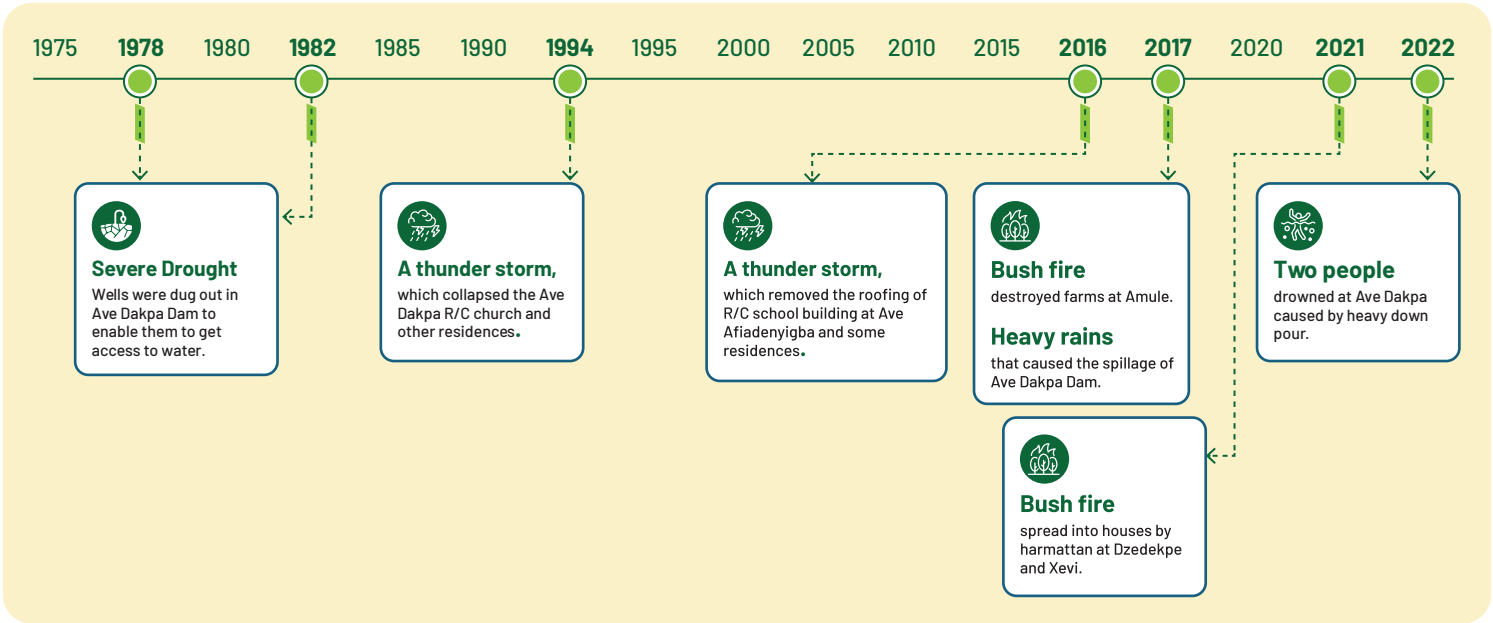


Figure 5: Historical timeline of major events in Akatsi North. Source: District Stakeholder Survey, September 2024

C

KEY FINDINGS AND ADAPTATION PRIORITIES FOR AKATSI NORTH DISTRICT

The assessment revealed that Akatsi North is increasingly vulnerable to climate hazards such as prolonged dry spells, shifting rainfall patterns, and periodic flooding. These risks are intensifying food insecurity, water stress, and health burdens—especially for low-income and resource-constrained households. Women face added challenges due to unpaid care work and limited access to adaptation resources. Youth disengagement from farming and weak infrastructure further amplify the district's vulnerability. Climate projections show rising temperatures and more erratic rainfall, with stronger impacts expected under high-emissions scenarios.

Plate 6: *Main community dam at Xevi, almost fully covered with plants*
Credit: *Portia Adade Williams and team, 2024*

C1. Climate Hazards and Exposure

Akatsi North District is facing more frequent and intense droughts, floods, heatwaves, and unpredictable rains—putting pressure on farming, water, health, and daily life, especially for women, children, and vulnerable communities:

This section outlines the key climate hazards affecting the district, identifies the most exposed sectors and populations, and highlights emerging spatial and seasonal trends in risk exposure based on historical data, stakeholder consultations, and community-level participatory mapping.

C1.1. Major Hazards

Drought and Prolonged Dry Spells

Drought was ranked as the most critical hazard by stakeholders during the participatory workshop. Evidence from both climate data (e.g., CHIRPS precipitation

trends) and local testimonies indicates that the district is experiencing longer dry seasons, often extending beyond expected harmattan periods. Drought affects multiple sectors:

- **Agriculture:** Rain-fed crop production suffers from delayed planting, poor germination, and reduced yields—particularly for maize, cassava, and vegetables.
- **Water Access:** Drying of streams, shallow wells, and boreholes increases the burden on women and children, who travel longer distances to fetch water.
- **Livestock:** Pasture availability declines during prolonged dry periods, leading to malnutrition and high mortality rates among small ruminants.

Communities such as Nyitawuta, Hadave, and Ashiagborvi—categorized as highly vulnerable—reported annual drought impacts on both food security and water supply. FGD participants also noted increased conflicts over water access in the dry season.

C1.2. Flooding and Waterlogging

While drought dominates in impact, **seasonal flooding** is also a recurring hazard—especially in low-lying areas like Zemu, Avevi, and parts of Ave Afiadenyigba. Floods in Akatsi North are driven by:

- Intense rainfall events (as seen in Rx1day and Rx5day indices).
- Poor drainage infrastructure in settlements.
- Water overflow from rivers and streams.

Flood impacts include:

- Destruction of homes, especially mud-walled structures.
- Crop damage, particularly to groundnut and vegetable farms.
- Increased risk of waterborne diseases such as cholera and typhoid.
- School disruptions and road inaccessibility during peak flooding months (May–July).

FGDs with women highlighted that children often fall sick or miss school during flood events, and caregiving responsibilities rise sharply. Markets and economic activities are also disrupted, disproportionately affecting female vendors.

Extreme Heat and High Temperatures

Rising daytime and nighttime temperatures are becoming a serious threat in Akatsi North. Climate indices such as TXx and TNx indicate a long-term warming trend, with frequent episodes of heat stress during the dry season.

- In Ave Dakpa and Ave Xevi, FGDs revealed that households increasingly alter work routines to avoid peak afternoon heat.
- Public health concerns include increased cases of dehydration, heat exhaustion, and worsened conditions for elderly and pregnant women.
- Farmers noted a decline in poultry survival rates and reduced animal productivity during heatwave periods.

While less destructive than floods or droughts, extreme heat amplifies the impact of other hazards and contributes to long-term health deterioration.

Erratic and Unpredictable Rainfall

Seasonal calendars created during participatory workshops revealed community concerns about increasingly **unpredictable rainfall patterns**. Traditional indicators for planting seasons (e.g., early March rains) are now unreliable, and rainfall onset and cessation dates fluctuate widely. This affects:

- Planting cycles and crop yield predictability.
- Reliance on traditional farming knowledge, which is becoming obsolete.
- Investment decisions around fertilizers and improved seed varieties.

Erratic rainfall also contributes to both flooding and drought, depending on whether intense rainfall is followed by long dry periods or sustained storms.

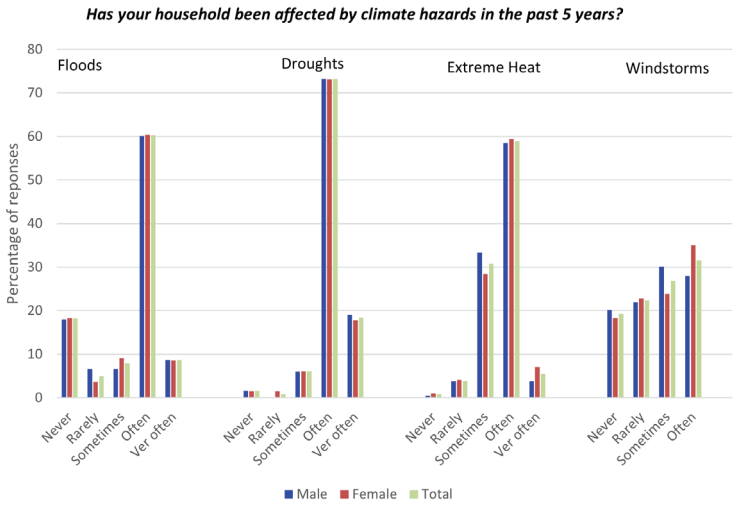


Figure 6: *Household exposure to climate hazards*
Source: *Akatsi North Household survey*

Compound Risks and Climate Uncertainty

Akatsi North is increasingly exposed to overlapping and unpredictable climate threats that intensify their combined effects. Key concerns include:

- **Concurrent and cascading hazards:** Droughts followed by sudden heavy rains led to soil erosion, crop failure, and localized floods—compounding losses across agriculture, infrastructure, and health.
- **Shocks that reinforce each other:** Prolonged heatwaves deplete water sources, worsen disease outbreaks, and increase food insecurity—especially in vulnerable communities like Avevi, Nyitawuta, and Kpeduhoe.
- **Unpredictable seasonal patterns:** Traditional signs for rainfall and planting seasons are becoming unreliable, complicating farming decisions and reducing preparedness.
- **Disproportionate impacts on vulnerable groups:** Women, youth, and persons with disabilities often lack the resources and decision-making power to respond to fast-changing climate risks.
- **Weak coping systems:** Limited early warning mechanisms, poor infrastructure, and minimal support services reduce the district's ability to manage compound risks effectively.

EXPOSURE ANALYSIS

Exposure refers to the extent to which people, assets, and systems are located in areas susceptible to climate hazards. In Akatsi North. exposure profile is shaped by:

Geographic Features
Low-lying, flood-prone zones e.g. Zemu and Avevi
upland drought-prone zara e.g. Nyitawuta

Population Distribution
Settlements concentrated around Ave Dakpa (district capital) and along poorly

Infrastructure Deficits
Limited culverts, storm d drains, and water storage systems exacerbate hazard impacts

Gendered Exposure
Women's roles in food roduction, caregiving, and water collection increase their vulnerability

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Women's roles in food production, caregiving, and water collection increase their vulnerability

Climate hazards in Akats! North - particularly drought, flooding. extreme heat, and erratic rainfaall–pose immediate and long-term threats to lives and livellhoods.

SEASONAL CLIMATE EXPOSURE

Month	Hazard(s)
February-April	Drought, Extreme Heat (Ny tawuta, Hadave, Ashiagbarvi)
May-July	Flooding, Waterborne Diseases (Zemu, Avevi, Dezeppe)
August-Octeber	Erratic Rainfail, Crop-damage
Novem-bember	Drought Onset; Heatwaves (especiolly, upland zones)

LOCAL KNOWLEDGE ON HAZARDS AND EARLY WARNING GAPS

- No functional district--level early warning protocol
- Mobile alerts limited by poor network coverage
- Seasonal forecasts lack accessibility or local langible

C2. Vulnerability Analysis

C2.1. Socio-Economic Vulnerabilities

Poverty and Livelihood Insecurity

Akatsi North is characterized by high levels of poverty and subsistence agriculture dependence. The majority of households derive their income from small-scale farming, with limited access to credit, insurance, or off-farm livelihood opportunities. This economic fragility heightens sensitivity to climate shocks:

- Crop losses from drought or flood events often translate directly into food insecurity and income shortfalls.
- FGDs revealed that many households sell assets or reduce meals during drought periods—negative coping mechanisms that erode resilience.

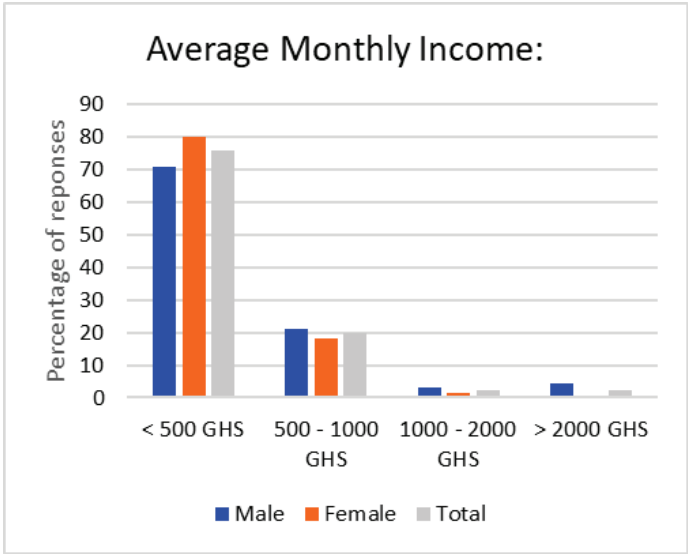


Figure 7: *Household average monthly income*
Source: *Akatsi North Household survey*

Low Education and Climate Literacy

Household survey data indicates low educational attainment, especially among women and the elderly. This limits access to climate information and reduces the capacity to engage with early warning systems or adopt new adaptation technologies. FGDs in Dedzepe and Hadave revealed limited knowledge of new climate-resilient farming practices or financial literacy to access adaptation financing.

Youth Unemployment and Migration

Youths face a double vulnerability: limited livelihood opportunities locally and increasing climate-related disruption of farming-based inheritance systems. In Avevi and Ave Xevi, youth groups expressed concern about rising migration to urban centers due to failed crops and land degradation, which weakens social cohesion and rural workforce capacity.

C2.2. Physical and Environmental Vulnerabilities

Ecosystem Degradation and Land Use Change

Overcultivation, deforestation for fuelwood, and poor soil conservation practices have accelerated environmental degradation in Akatsi North. Key issues include:

- Declining soil fertility and erosion on sloped lands in Ave Dakpa and Nyitawuta.
- Shrinking wetlands and seasonal water bodies, particularly in Ave Afiadenyigba.
- Loss of forest cover, reducing buffer zones for flood control and biodiversity resilience.

These environmental trends increase both the sensitivity of ecosystems and the populations that depend on them.

Poor Infrastructure and Settlements in Hazard-Prone Zones

Several settlements are located in areas highly susceptible to floods (e.g., Zemu, Kpegbadza) or drought (e.g., Nyitawuta). Housing structures are often unplanned and built with vulnerable materials (mud, thatch), making them prone to collapse or inundation. Infrastructure gaps exacerbate vulnerability:

- Lack of proper drainage increases flood risk.
- Weak transportation networks isolate communities during extreme weather events.
- Limited storage facilities for crops increase post-harvest losses.

C2.3. Gender and Social Group Vulnerabilities

The vulnerability of women, youth, persons with disabilities (PWDs), and elderly persons in Akatsi North is shaped by unequal access to resources, decision-making, and livelihood assets. Gendered vulnerability emerged as a central theme across all FGDs and KIIs.

Women's Vulnerabilities

Women carry disproportionate caregiving responsibilities, face limited land ownership, and have unequal access to finance and information. Key findings include:

- Women reported increased workload during drought periods—spending more hours fetching water or sourcing food substitutes.
- During floods, women face higher risks of domestic violence, loss of market income, and caregiving strain.
- In some communities (e.g., Ave Dedzefe), women lack representation in climate-related decision-making bodies.

FGDs noted that climate stress often deepens gender inequality by reinforcing traditional roles and overburdening women's time and health.

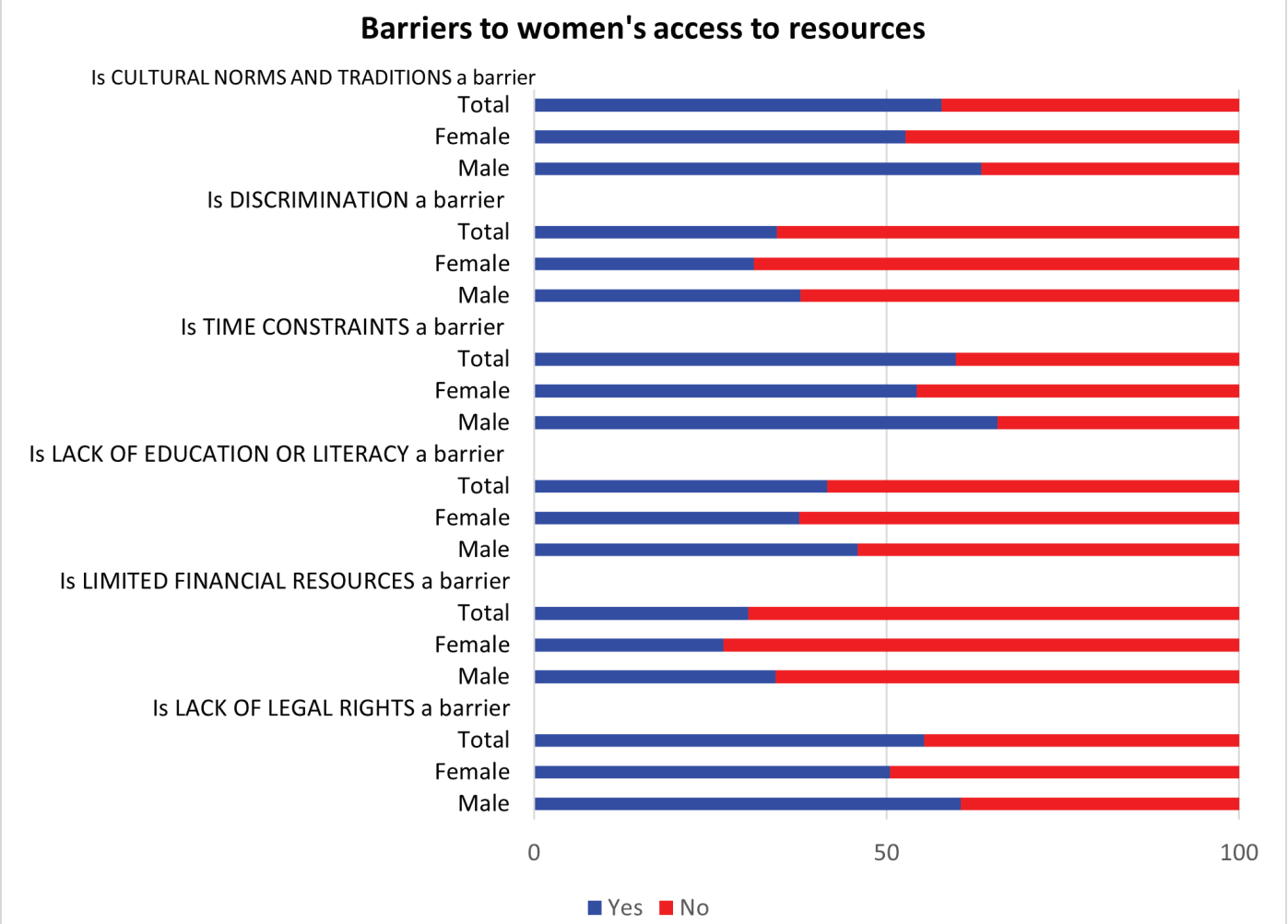


Figure 8: *Barriers to women's access to resources*
Source: *Akatsi North Household survey*

Youth Vulnerabilities

Youth face limited access to land, tools, and training for modern farming practices. They also lack inclusion in climate governance or access to credit to start adaptive businesses. This leads to:

- High out-migration rates.
- Reduced local innovation capacity.
- Disenchantment with local adaptation efforts.

Persons with Disabilities (PWDs) and the Elderly

PWDs and older adults experience mobility limitations during extreme weather events. They often live in structurally weaker homes and are excluded from early warning communication systems. During FGDs, stakeholders reported that PWDs were less likely to receive relief or participate in community planning sessions.

C2.4. Sector-Specific Vulnerabilities

Agriculture

Agriculture is the most climate-sensitive sector in Akatsi North and the backbone of household livelihoods. Vulnerabilities include:

- Heavy dependence on rain-fed systems.
- Low adoption of drought-resistant or early maturing seed varieties.
- Inadequate extension services and post-harvest storage.

Survey data indicated that over 60% of farming households experienced crop loss due to drought or erratic rains in the past three years. Floods also destroy seedbeds and wash away inputs, particularly in Avevi and Zemu.

Water Resources

Access to clean and reliable water is highly vulnerable to climate variability. Shallow wells and boreholes dry up during droughts and are contaminated during floods. Water access is also unequal:

- Women and girls shoulder the burden of water collection.
- In FGDs, some women reported walking over 5 km during the dry season to fetch water.

Communities like Hadave and Ashiagborvi face recurrent water scarcity, heightening their overall vulnerability.

Health

Healthcare access and infrastructure are fragile, especially in interior zones. CHPS compounds are under-resourced, and heat and flood-related diseases are rising. Identified vulnerabilities include:

- Malaria outbreaks during flood seasons (May–July).
- Heat stress cases among elderly and children.
- Increased burden on women caregivers.

Health service delivery is also affected by poor road access, leading to delayed or missed care during hazard events.

Education

Climate hazards impact education in several ways:

- Flooded schools or impassable roads disrupt attendance.
- Water scarcity affects school sanitation, especially for girls.
- Care duties during hazard periods (e.g., collecting water, farming) lead to dropout or absenteeism among children, particularly girls.

FGDs with youth revealed that repeated hazard impacts lead to declining interest in school continuity, particularly in poorer households.

Infrastructure and Transport

As noted in Section C1, roads, culverts, and storm drains are insufficient or poorly maintained. Vulnerable infrastructure contributes to:

- Isolation of communities during floods.
- Crop transportation delays and post-harvest losses.
- Difficulty in reaching health facilities during emergencies.

Ave Xevi and Dedzepe were cited as communities that frequently face transport isolation during the rainy season.

C2.5. Institutional and Governance Vulnerabilities

The ability of Akatsi North District Assembly and sectoral departments to plan and respond to climate risks is constrained by systemic challenges:

- Low budgetary allocation for adaptation activities.
- Limited technical capacity and climate data access.
- Weak inter-agency coordination.
- Lack of integration of local knowledge into formal planning.

Local climate governance remains top-down and fragmented, with limited community input. FGDs noted the absence of functional early warning systems, and a lack of transparency in targeting support after extreme weather events.

Gender-responsive budgeting and inclusion of PWDs in planning remain inconsistent. Although women's groups exist in the district, their influence in adaptation planning is limited by patriarchal norms and lack of capacity.

C2.6. Spatial Dimensions of Vulnerability

Participatory mapping and exposure-sensitivity scoring identified communities with heightened vulnerability:

Community	Dominant Hazard	Vulnerability Level	Key Issues
Nyitawuta	Drought	High	Water scarcity, poor roads, youth migration
Hadave	Drought/ Flood	High	Water access, female workload, health challenges
Zemu	Flooding	High	Inundated homes, school closures
Avevi	Flooding	Moderate–High	Market disruptions, housing vulnerability
Ave Dakpa	Heat/ Drought	Moderate	Urbanization stress, high youth unemployment
Ashiagborvi	Drought	High	Crop failure, weak social services, PWD exclusion
Ave Xevi	Erratic Rainfall	Moderate	Erosion, land degradation, isolation

Table 5: Spatial Dimensions of Vulnerability

These spatial disparities call for targeted adaptation strategies that reflect local conditions, hazard types, and social inequalities.

C3. Projected Climate Trends

Temperatures in Akatsi North are expected to rise and rainfall will become more unpredictable, leading to more heatwaves, longer dry spells, and intense rainstorms—posing serious risks to farming, water, and health if action isn't taken soon.

C3.1 Summary of projections

To understand how future climate conditions may evolve in Akatsi North, the CRVA incorporated a combination of observed data and scientifically modeled projections. The analysis drew on:

- CHIRPS for historical rainfall trends
- ERA5 reanalysis data for temperature baselines
- CMIP6 models under two emission scenarios:
  - **SSP2-4.5** – a moderate emissions pathway.
  - **SSP5-8.5** – a high emission, fossil-fuel intensive pathway.

Climate projections were analyzed across four time periods:

- **Historical (1990–2020)**
- **Near Future (NF: 2026–2050)**
- **Mid Future (MF: 2051–2075)**
- **Far Future (FF: 2076–2100)**

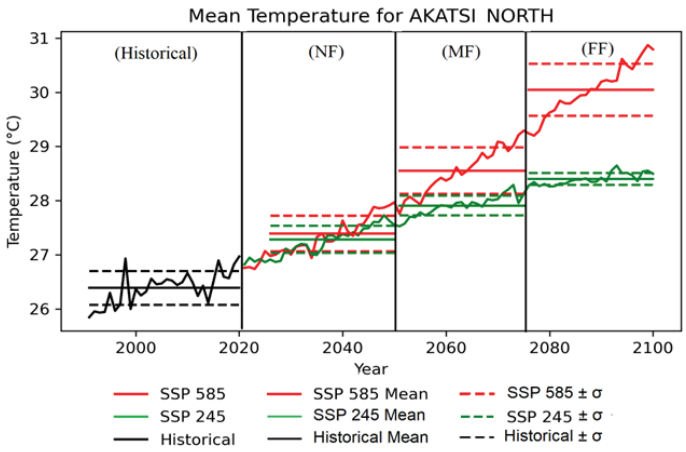


Figure 9: Historical and projected mean temperature for Akatsi North (four periods)

Figure 9 shows projected mean temperatures for Akatsi North under both SSP2-4.5 (green) and SSP5-8.5 (red). The SSP5-8.5 scenario indicates a steady and more intense rise in temperatures across all future periods, especially from mid-century onwards.

- Historical and projected means are marked with solid horizontal lines.
- Dashed lines represent standard deviations for each period.

Key Implications: Rising temperatures—particularly under SSP5-8.5 — will likely increase heatwaves, evapotranspiration losses, and energy demand, while negatively affecting health, crop yields, and water availability.

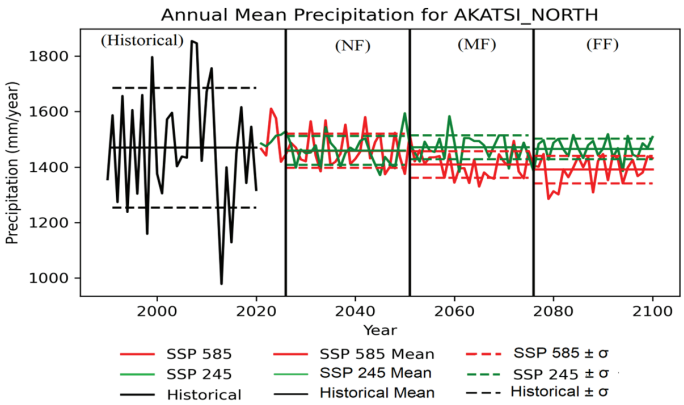


Figure 10: Historical and projected annual mean precipitation for Akatsi North

Figure 10 illustrates projected annual mean precipitation. While the historical record shows high year-to-year variability, both SSP scenarios suggest relatively flat but diverging trends:

- SSP2-4.5 maintains a more stable average rainfall.
- SSP5-8.5 suggests a slight long-term decline in precipitation.

Key Implications: Although total rainfall may not drastically change, the timing, intensity, and predictability of rain events are expected to worsen. This has serious consequences for rain-fed agriculture, groundwater recharge, and flood risks.

Figure 11 presents key climate extreme indices for Akatsi North, comparing historical observations (black bars) with future projections under two emission scenarios: SSP2-4.5 (moderate emissions, blue bars) and SSP5-8.5 (high emissions, red bars). The results indicate a clear increase in extreme events over time.

Notable trends include:

- Longer dry spells (CDD) and more consecutive wet days (CWD),
- Higher intensity rainfall events (R95p, R95pTOT, SDII),
- Increased days with heavy precipitation (R10mm, Rx1, Rx5),
- Greater variability in both wet and dry days (WD, DD).

These patterns signal growing risks to farming, water security, and community resilience, reinforcing the need for proactive adaptation planning.

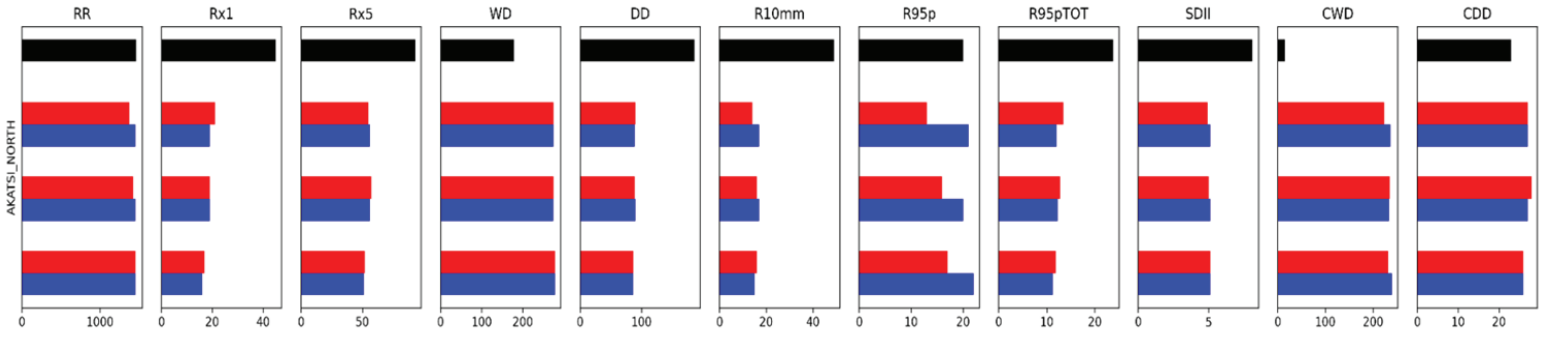


Figure 11: Trends in Historical and Projected Climate Extremes in Akatsi North.

C3.2 District-Specific Risks in Akatsi North

Climate hazards will not impact all communities equally. Based on stakeholder consultations, climate modeling, and field data:

- **Zemu and Avevi:** At high risk of flash floods due to low-lying terrain and poor drainage infrastructure.
- **Nyitawuta and Ave Xevi:** Increasingly vulnerable to water scarcity and borehole pressure during longer dry spells.
- **Avevi and Ave Dakpa:** Expected to face intensified heatwaves, affecting farmers, schoolchildren, and outdoor vendors.
- **Kpegbadza and Avevi:** Likely to see an uptick in agricultural losses and road inaccessibility during heavy rainfall events.

Climate Variable	Key Findings	Implications
Rainfall Patterns	• Rainy days remain stable at over 1000 days under both SSP scenarios. • Wet days (WD) increase to over 200 days, while dry days decline to about 80 days compared to over 150 historically.	Stable rainy days and increased wet days can support farming activities but may elevate risks of floods and waterlogging.
Annual Precipitation	• Historical variability of 1000–1800 mm reduces under future projections. • SSP 5-8.5 shows a significant decline in precipitation in the far future (~2060–2100). • SSP 2-4.5 indicates stable precipitation with fewer signs of long-term decline.	Reduced variability under SSP 2-4.5 could benefit agricultural planning, while long-term declines under SSP 5-8.5 may exacerbate heightened risks of water stress.
Rainfall Extremes	• Heavy rain days (R95p) and intensity (SDII) are projected to decrease significantly. • Consecutive wet days (CWD) increase, while consecutive dry days (CDD) rise to over 40 days compared to approximately 30 days historically. • Intense rainfall days (R10mm) drop significantly to around 3 days compared to over 30 days historically.	Fewer extreme rainfall events reduce flash flood risks but may lead to prolonged dry spells and decreased water availability for crops.
Mean Temperature	• Temperatures are projected to increase throughout the 21st century, with 31°C projected under SSP 5-8.5 by century's end. • A 3°C difference between SSP 2-4.5 and SSP 5-8.5 highlights the impact of emissions on warming.	Increased temperatures can heighten evapotranspiration, stress crops, and reduce agricultural productivity, intensifying drought and water management challenges.

Table 6: Summary of projected climate trends in Akatsi North District

Community	Climate Change	Women	Men	Youth	PWD
Avevi	Erratic rainfall, prolonged dry spells	Increased responsibility in household water collection and food security.	Focus on rebuilding infrastructure and securing income.	Increased involvement in agricultural labour, especially in family-owned farms.	Dependence on others for mobility and support.
Ashiagborvi	Deforestation, erratic rainfall, increased bush burning, temperature changes	Responsible for food preservation and managing household resources during heat stress.	Role in ensuring farm irrigation systems function.	Increased pressure to support family livelihoods.	Increased reliance on family for mobility and tasks.
Ave Afiadenyigba	Flooding and waterlogging	Increased responsibility in managing household safety and flood recovery.	Managing financial resources for flood recovery and infrastructure repair.	Increased responsibilities in rebuilding community assets and resources.	Difficulty with mobility and independence during recovery.
Ave Dakpa	Droughts and reduced rainfall	Increased role in collecting water and ensuring food sufficiency.	Managing livestock and crop adaptation strategies.	Pressure to contribute to family welfare.	Difficulty engaging in agricultural and household tasks.
Ave Xevi	Heatwaves, water scarcity	Handling daily chores with increased strain from heat and water scarcity.	Pressure to provide for family's water needs and food security.	Increased community responsibilities due to strained resources.	Strain in managing mobility and independence.
Nyitawuta	Prolonged dry periods, drying of water bodies, irregular rainfall	Increased responsibility for water collection and food management during droughts.	Efforts to secure water for agriculture and livestock.	Increased responsibilities in terms of livelihood support.	Increased reliance on family for water and assistance.
Hadave	Heavy rains, inconsistent patterns	Managing household safety and ensuring the upkeep of home during floods.	Repairing damages to household infrastructure and securing water for irrigation.	Increased pressure to help with farm work or migrate for better opportunities.	Strained responsibilities due to mobility and accessibility issues.
Dzadzepe	Flooding Soil erosion,	Increased efforts to protect household and community resources from soil erosion.	Greater pressure to maintain farmland and livestock.	Increased involvement in soil restoration activities.	Reduced engagement in soil restoration activities due to mobility constraints.
Kpegbadza	Flooding and river overflows	Taking on added responsibility for flood management and household safety.	Maintaining farm resources and infrastructure during floods.	Increased need to assist in rebuilding efforts or seek alternative livelihoods.	Increased isolation and reliance on others for community rebuilding.
Zemu	Seasonal variability, crop failures	Managing food storage and family resources during seasonal variations.	Increased role in securing livelihoods through alternative methods.	Increased pressure to support family and community efforts in resource management.	Difficulty in carrying out responsibilities due to reduced mobility and access.

Table 7: Projected impacts of climate change on responsibilities within households and communities from the participatory stakeholder engagement and FGDs

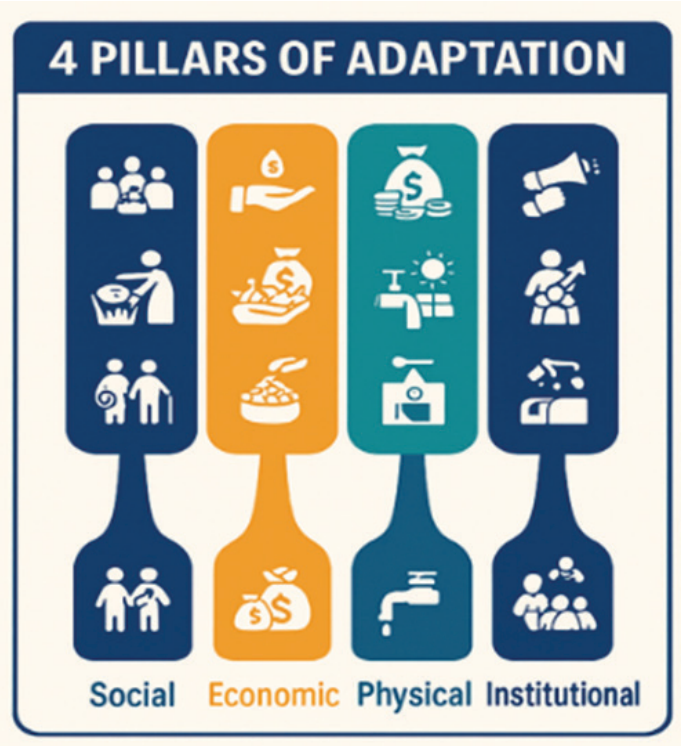
D

ADAPTATION PRIORITIES AND RECOMMENDATIONS

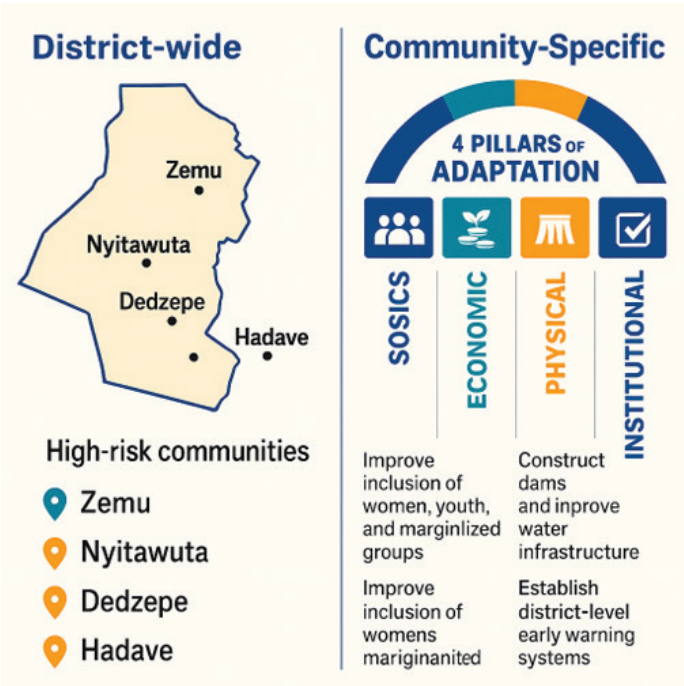
The CRVA outlines district-wide and community-specific adaptation needs. District-level priorities are anchored in four pillars: social inclusion, economic resilience, improved infrastructure, and institutional strengthening. Community-level actions focus on local realities—for instance, borehole drilling in water-scarce areas like Nyitawuta, erosion control in Avevi and Dedzepe, and support for women's agro-enterprises in Hadave. These actions should be packaged into a costed District Climate Action Adaptation Plan and integrated into planning processes like the Medium-Term Development Plan.

Plate 7: *The only community primary school*
Credit: *Portia Adade Williams and team, 2024*

D1. Strategic Adaptation Options



Climate change adaptation in Akatsi North must be **holistic, inclusive, and locally grounded**, addressing both the climatic hazards and the social and economic vulnerabilities that amplify risk. Based on participatory consultations, climate modeling, and vulnerability analysis, this section outlines four strategic pillars for building resilience across the district.



D1.1. Social Interventions

Strengthening the social fabric and addressing gendered inequalities will ensure adaptation efforts are inclusive and sustainable.

- **Inclusive Governance for Climate Action**

  Establish and operationalize community-based adaptation committees in each area, ensuring active representation of women, youth, persons with disabilities (PWDs), and the elderly. These platforms will enhance local ownership, transparency, and gender-balanced decision-making in climate planning.

- **Gender-Responsive Education and Awareness**

  Scale up climate change education through schools, community forums, and local radio programs. Educational efforts should highlight gender-differentiated risks and promote inclusive adaptation practices.

- **Health System Strengthening**

  Improve climate-resilient healthcare delivery in vulnerable communities such as Zemu and Hadave. This includes expanding mobile clinics, equipping CHPS compounds, and training health workers on managing heat stress, malaria, and waterborne diseases linked to climate extremes.

- **Support for Caregiving and Mental Health**

  Facilitate caregiving support groups and safe shelters for women and children during climate-related crises. Integrate mental health services into community health programs to support residents facing climate-related trauma and stress.

D1.2. Economic Strategies

Boosting local livelihoods and expanding income options is critical in a district where most households depend on rain-fed agriculture.

- **Climate-Smart Agriculture (CSA)**

  Promote the adoption of drought-resistant crops, agroforestry, and conservation farming. Extension services must be gender-responsive to ensure women farmers have equal access to knowledge, inputs, and tools.

- **Livelihood Diversification**

  Support training and start-up assistance for alternative livelihoods, especially for women and youth. Viable options include beekeeping, agro-processing, soapmaking, and climate-resilient craft production.

- **Access to Finance and Credit**

  Strengthen community-based savings groups (e.g., VSLAs) and improve access to microcredit and mobile money platforms for women-led cooperatives. These schemes should include climate risk buffers and resilience-building goals.

D1.3. Physical and Infrastructure Upgrades

Closing infrastructure gaps is essential for reducing climate risks, especially in communities with poor drainage and weak road access.

- **Flood and Erosion Control**

  Invest in climate-resilient drainage systems, culverts, and erosion barriers in high-risk areas such as Avevi, Kpegbadza, and Zemu. Combine civil engineering works with nature-based solutions like riparian reforestation and grass bunds.

- **Water Security Measures**

  Expand borehole drilling, rainwater harvesting, and water storage facilities in drought-prone communities. Empower water user associations to manage these systems sustainably and equitably.

- **Energy and Shelter Resilience**

  Promote improved cookstove technologies to reduce deforestation and indoor pollution. Incorporate climate-

resilient features in the design and renovation of schools, clinics, and other public buildings.

D1.4. Institutional and Policy Reforms

Effective adaptation also requires strong institutions, data-driven planning, and inclusive governance at the district level.

- **Local Government Capacity Strengthening**

  Train district officials on climate risk screening, gender-responsive budgeting, and integration of adaptation into planning and budgeting cycles. Support early warning systems and disaster preparedness tools.

- **Policy Integration and Alignment**

  Embed CRVA recommendations into the District Medium-Term Development Plan (DMTDP), Environmental Sanitation Strategy, and District Disaster Management Plans to ensure long-term coherence.

- **Gender-Responsive Budgeting and Monitoring**

  Allocate dedicated resources for gender-equitable climate actions. Establish monitoring frameworks to track disaggregated benefits by gender, age, and vulnerability status.

- **Partnerships and Coordination**

  Facilitate coordination between the District Assembly, traditional authorities, civil society organizations (CSOs), and external partners. Establish a district-level climate coordination platform to harmonize interventions and mobilize funding.

D2. Community-Specific Recommendations

Recognizing that vulnerability levels and risk profiles vary widely across the district, the following **table 8** outlines tailored recommendations for each community assessed during the CRVA:

Community	Vulnerability Level	Key Climate Risks	Priority Recommendations
Avevi	Moderate	Seasonal flooding, erosion	- Construct stormwater drains. - Promote flood-resilient housing designs. - Strengthen community preparedness groups.
Ashiagborvi	High	Crop failure, heat stress	- Expand CSA training - Introduce mobile health clinics - Establish community water harvesting tanks
Ave Afiadenyigba	Moderate	Variable rainfall, drought	- Introduce drought-resistant seed banks - Facilitate women's access to VSLA credit - Rehabilitate broken boreholes
Ave Dakpa	Low	Occasional water scarcity	- Strengthen water conservation campaigns - Map early warning info into school curricula - Mainstream CRVA into DMTDP reviews
Ave Xevi	Moderate	Agricultural vulnerability	- Provide farmer extension support - Diversify income sources for youth - Introduce soil moisture conservation demos
Nyitawuta	High	Water shortages, disease	- Drill boreholes with solar pumping - Train volunteers on climate-health linkage - Mobilize communal tree planting efforts
Hadave	High	Floods, erosion	- Construct check dams - Protect degraded wetlands - Establish community disaster watch groups
Dzadzepe	Moderate	Sanitation-linked hazards	- Build raised latrines and safe waste zones - Map and fortify high-risk erosion areas - Offer climate-focused hygiene education
Kpegbadza	High	Drought, livelihood loss	- Provide solar dryers for women's agro-processing - Promote alternative livelihoods (e.g., shea butter, batik) - Create early-warning SMS alert system
Zemu	High	Multi-hazard: heat, floods, erosion	- Build multi-use evacuation center - Install flood-resistant culverts - Expand reforestation efforts with schools

Table 8: Community-Specific Climate Adaptation Recommendations

E
CONCLUSION AND NEXT STEPS

Akatsi North stands at a critical juncture where rising climate threats demand urgent and inclusive responses. The CRVA offers a roadmap for strengthening resilience through locally relevant, equity-centered adaptation measures. The next step is to translate these findings into a practical Climate Action Adaptation Plan, secure funding for implementation, and ensure ongoing participation from women, youth, and other marginalized groups. With collective effort, the district can move toward a climate-resilient future that leaves no one behind.

Plate 8: *Avevi only community mechanized borehole*
Credit: *Portia Adade Williams and team, 2024*

E1. Summary of Findings and Key Emerging Insights

Addressing climate challenges in Akatsi North demands integrated, equity-focused solutions that empower vulnerable groups and strengthen local resilience through coordinated action:

- The Climate Risk and Vulnerability Assessment of Akatsi North District reveals an urgent need for climate-responsive, gender-inclusive, and community-driven adaptation. Recurrent climate hazards—floods, droughts, extreme heat, and erratic rainfall—are exacerbating pre-existing vulnerabilities across sectors such as agriculture, water, health, and education. These hazards disproportionately impact already marginalized groups, including women, youth, the elderly, and persons with disabilities.

- The assessment highlights significant socio-economic disparities, with many households living below the poverty line and lacking access to credit, resilient infrastructure, or livelihood alternatives. Gender-differentiated impacts are particularly severe: women face increased caregiving burdens, reduced access to resources, and minimal representation in decision-making. Youth outmigration, deteriorating infrastructure, and weak institutional support systems further diminish the district's adaptive capacity.

- Despite these challenges, communities are not passive victims. The CRVA documents various local coping strategies—such as soil conservation, small-scale irrigation, and livelihood diversification—that offer entry points for scalable adaptation. However, these efforts are often constrained by resource limitations, lack of technical support, and weak policy integration. There is a pressing need to align local adaptation actions with national frameworks like Ghana's National Adaptation Plan and global development agendas such as SDGs 5 (Gender Equality) and 13 (Climate Action).

E2. Call to Action

To safeguard its development future, Akatsi North must transition from reactive responses to inclusive, forward-looking climate resilience anchored in community leadership and strategic investment:

Akatsi North stands at a crossroads. Without targeted investment and inclusive governance, climate change will continue to erode the district's development gains and entrench inequality.

Key imperatives include:

- Strengthening district-level planning and budgeting processes to integrate gender and climate resilience.
- Scaling up investments in climate-resilient infrastructure, sustainable livelihoods, and health services.
- Empowering local adaptation committees to lead community-based actions with clear representation of women, youth, and persons with disabilities.
- Bridging the gap between local adaptation knowledge and national policy frameworks through participatory planning, knowledge sharing, and institutional partnerships.

Community voices across the district have emphasized the same priorities: better water access, reliable irrigation, improved road networks, and diversified livelihood options. These must be addressed not just as development needs, but as critical levers of resilience in the face of a changing climate.

E3. Next Steps: Toward a Costed Climate Adaptation Plan

As a direct follow-up to this CRVA, Akatsi North District Assembly and partners under the SIGRA project will develop a costed, gender-responsive Climate Adaptation Plan (CAP).

This plan will:

- Prioritize high-risk communities and sectors using CRVA evidence.
- Outline concrete adaptation measures with clear timelines and budget estimates.
- Embed gender equity, youth engagement, and disability inclusion in all adaptation targets.
- Align with district development frameworks and attract funding from national and international sources.

The CAP will serve as a strategic blueprint for resilience building—ensuring that adaptation is not only effective, but equitable, inclusive, and locally owned.

SIGRA
Strengthening Investments in Gender-Responsive Climate Adaptation

Cowater Ghana

In partnership with Canada

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