



Government College of Arts,
Science and Commerce, Quepem

Local Realities of Climate Impact In Goa's Villages

A Call for Climate Action Plans (CAPs)

May 2026





LOCAL REALITIES OF CLIMATE IMPACT IN GOA'S VILLAGES

A Call for Climate Action Plans (CAPs)

Study conducted by:

**Goa Institute of Public Administration &
Rural Development, Ella Farm, Old Goa**

In Collaboration with:

**Government College of Arts, Science and
Commerce, Quepem**

ABBREVIATIONS

AC	Air Conditioner
BMC	Biodiversity Management Committee
BMI	Body Mass Index
BP	Blood Pressure
CAP	Climate Action Plan
CBO	Community Based Organisation
CHC	Community Health Centre
CIF	Community Investment Fund
DAHVS	Department of Animal Husbandry and Veterinary Services
DDMA	District Disaster Management Authority
DHS	Directorate of Health Services
DOP	Directorate of Panchayats
FGD	Focus Group Discussion
GCASCQ	Government College of Arts, Science, and Commerce, Quepem
GIPARD	Goa Institute of Public Administration and Rural Development
GPDP	Gram Panchayat Development Plan
GSBB	Goa State Biodiversity Board
GSCCC	Goa State Climate Change Cell
GSWA	Goa State Wetland Authority
HAP	Heat Action Plan
ICAR	Indian Council of Agricultural Research
IFAD	International Fund for Agriculture Development
IPCC	Intergovernmental Panel on Climate Change
KVK	Krishi Vigyan Kendra

LPG	Liquefied Petroleum Gas
NAPCC	National Action Plan on Climate Change
NGO	Non-governmental Organisation
NPK	Nitrogen, Phosphorus, and Potassium (Fertilizer)
NRM	Natural Resource Management
NMSKCC	National Mission for Strategic Knowledge on Climate Change
PBR	People's Biodiversity Register
PHC	Primary Health Centre
PM	Particulate Matter (e.g., PM2.5, PM10)
PWD	Public Works Department
PwDs	People with Disabilities
RDA	Rural Development Agency
RTO	Road Transport Office
SAPCC	State Action Plan on Climate Change
SDMA	State Disaster Management Authority
SECAP	Social, Environmental, and Climate Assessment Procedures
SHG	Self-Help Group
SOP	Standard Operating Procedure
TCHP	Traditional Community Healthcare Providers
TCP	Town and Country Planning
VB-G RAM (G)	Viksit Bharat Guarantee for Rozgar and Ajeevika Mission (Gramin)
VO	Village Organisation
VP	Village Panchayat
WRD	Water Resources Department

MESSAGE

At the Goa Institute of Public Administration and Rural Development (GIPARD), our mission is to empower local governance through knowledge and actionable insights. It gives me immense pride to present this participatory insights report, "From Past to Present: Local Realities of Climate Impacts in Goa's Villages," which captures the authentic voices of the citizens of Xeldem and Rivona panchayats.

Climate change is often discussed in terms of global statistics and abstract models; however, for the rural communities of Goa, it is a lived, multi-dimensional reality. This booklet is the result of intensive Focus Group Discussions (FGDs) with citizens, including Self-Help Groups (SHGs), Farmers, Senior Citizens, and Youth, who shared their observations on how their environment has shifted over generations.

Beyond agriculture, the report highlights critical links between a warming climate and community health, noting a rise in lifestyle diseases and heat-related fatigue. It also documents the increasing human-wildlife conflict.

This publication is not merely a record of change; it is a Call for Action. These lived experiences reveal urgent gaps that must be addressed through Village Panchayat-level Climate Action Plans (CAPs). By integrating these community voices into our Gram Panchayat Development Plans (GPDPs) and aligning them with the State Action Plan on Climate Change (SAPCC), we can build a more resilient Goa.

I hope that this report serves as a blueprint for replication across all Panchayats in Goa, ensuring that our path toward the future is grounded in the wisdom of our past.

Smt. Chesta Yadav, IAS
Director General

FOREWORD

In an era where climate change is often framed through global scientific models and international treaties, the true measure of its impact lies in the lived experiences of our local communities. At the Goa Institute of Public Administration and Rural Development (GIPARD), we believe that effective governance begins with listening. It is with great pride that we present "From Past to Present: Local Realities of Climate Impacts in Goa's Villages," an effort that brings the voices of the communities to the forefront of the climate conversation. This is the beginning of a larger exercise of working on the climate impacts at grassroot level.

This report is the culmination of intensive, participatory research involving citizens from the Village Panchayats of Xeldem and Rivona. By engaging with SHGs, Farmers, Senior Citizens, and Youth, we have captured a generational shift, a "Past vs. Present" narrative that reveals how deeply the climate crisis is woven into the social and economic fabric of rural Goa.

The insights gathered across the five parameters of Agriculture & Horticulture, Health & Well-being, Natural Resource Management, Livelihood & Lifestyle, and the Environment & Biodiversity are both illuminating and urgent.

As an apex State Training Institute, GIPARD's objective is to translate these "rich insights" into actionable policies. This booklet serves as a vital evidence base for the development of Village Panchayat-level Climate Action Plans (CAPs). By aligning community wisdom with frameworks like the Gram Panchayat Development Plan (GPDP) and the State Action Plan on Climate Change (SAPCC), we aim to build a future that is not only technologically advanced but ecologically resilient.

I commend the participants and the research team for their dedication to this participatory process. It is my hope that this document serves as a blueprint for every Village Panchayat in Goa to move "from voices to action," ensuring that our development remains grounded in the realities of those who know the land best.

Shri. Vasudev Shetye
Director - Training

ACKNOWLEDGEMENT

This publication, “From Past to Present: Local Realities of Climate Impacts in Goa's Villages,” has been a collective journey of learning and collaboration, I would like to extend my deepest gratitude to everyone who contributed their time, wisdom, and effort to this vital initiative with the support of various stakeholders.

First and foremost, profound thanks go to all the citizens of Xeldem and Rivona Village Panchayats since this booklet is built upon lived experiences. We are especially grateful to all the Self-Help Groups (SHGs), Farmers, Senior Citizens, and Youth who participated in the Focus Group Discussions (FGDs).

I would like to thank Smt. Chesta Yadav, IAS, Director General and Shri. Vasudev Shetye, Director at GIPARD for their visionary guidance and for fostering an environment where participatory governance is prioritized. Their commitment to bridging the gap between state policy and local reality has been the driving force behind this publication.

We owe a special word of appreciation to Smt. Kavita Dessai, Sarpanch, Xeldem VP and Smt. Vaishali Naik, Sarpanch, Rivona VP. Their leadership and support were instrumental in mobilizing the community and providing the necessary study area profiles that grounded our research.

A special mention is reserved for the Government College of Arts, Science and Commerce, Quepem for the collaboration under this special project. GIPARD extends its heartfelt gratitude to Dr. Pravina Kerkar, Officiating Principal for the selfless support given and Smt. Siddhi Shet Mashelkar, Assistant Professor for the facilitation at both the locations with their student volunteers.

Similarly, the efforts of the faculty at GIPARD, Dr. Sarita Patil & Shri. Neelay Desai are appreciated towards this participatory compilation. I thank Shri. Laxmikant Desai, Faculty, GIPARD for preparing the CAP template as well as taking special efforts towards designing formats for data collection and compilation of this report.

We also acknowledge the support from the Department of Environment and Climate Change and the Directorate of Panchayats, whose frameworks, such as the State Action Plan on Climate Change (SAPCC) and Gram Panchayat Development Plans (GPDPs), provide an essential policy alignment for our recommended actions.

Finally, we thank the community members who shared their hopes for the future as it is our hope that this booklet serves as a powerful catalyst for the creation of Village Panchayat-level Climate Action Plans (CAPs), ensuring a resilient and sustainable future for all of Goa.

Dr. Seema Fernandes
Assistant Director

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Published by: **Goa Institute of Public Administration & Rural Development**
(GIPARD) Ella Farm, Old Goa, 403 402

May, 2026

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EXECUTIVE SUMMARY

This participatory insight report captures the critical intersection of climate change and local development in the Village Panchayats of Xeldem, Quepem-Goa, and Rivona, Sanguem-Goa, India. Through structured Focus Group Discussions (FGDs) with the residents from both the villages ranging from traditional farmers to digitally savvy-native youth, we have documented a community in a profound state of ecological and social transition. The overarching narrative across all demographics is a profound "Loss of seasonal boundaries". Residents describe a fundamental socio-ecological shift where the predictable natural rhythms have been superseded by an era of extreme climatological unpredictability.

Catastrophic Loss of Agrobiodiversity: An alarming majority of farmers reported a complete abandonment of traditional crops. High-nutrition pulses such as moong and millets such as *nachni*, *varri* have been largely replaced by market-dependent varieties or discontinued entirely due to erratic weather and wildlife incursion.

Agricultural Vulnerability: High-value crops like cashew and mango are facing unprecedented failures. The phenomenon of "salty dew" (*Dav*), combined with heat stress, is destroying flowering cycles and threatening the primary economic base of the village.

Direct Health-Climate Correlations: The "harsher sun" is a physical reality in Xeldem. Beyond general heat stress, there is a documented surge in migraines, blood pressure (BP), and vector-borne diseases (Malaria/Dengue). Critically, elderly participants highlighted a rising incidence of kidney stones, likely linked to heat-induced dehydration. Beyond lifestyle diseases like Diabetes and Hypertension, the community reports high-gravity health indicators, including a perceived increase in cancer cases and the early onset of puberty in young girls, which residents link to a broken food chain and environmental stressors.

The Development Paradox: The introduction of quepem the canal represents a strategic tension. While it solved historical drinking water hardships and enabled summer farming, it incentivized a shift to chemical-heavy NPK fertilizers and led to the neglect of traditional wells and the decline of freshwater fish biodiversity.

Market Dependency: Rivona is transitioning from a self-sufficient, "own-land" ecosystem to a "market-dependent" lifestyle, increasing financial precariousness in the face of crop failures.

A Temporary Resilience Window: Counter-intuitively, Xeldem's groundwater remains currently stable, and wells do not yet run dry. This represents a critical, but likely temporary, window of resilience that the CAP must leverage before further urbanization and climate stress deplete these reserves.

Wildlife Menace: A rising "monkey and peacock menace" is not merely a population increase but a result of shifting land-use patterns. The abandonment of traditional hill-grazing for domestic cattle has removed the historical "buffer" that kept wildlife away from village farms.

Erosion of Traditional Knowledge: There is a critical decline in the community's adaptive capacity as traditional knowledge fades. This is exemplified by the loss of *Vaidu's* (Traditional Community Healthcare Provider) identification skills and the abandonment of the *Panchang* (a traditional hindu celestial calendar) for agricultural forecasting.

A Call to Action: To move from "voices to actions," the Climate Action Plan (CAP) must prioritize ward-level interventions, specifically the establishment of Community based committees for monitoring and evaluation along with seed banks for indigenous varieties. The lived experiences of citizens of Rivona confirm that the village has crossed critical climatological thresholds. The reported unpredictability necessitates the immediate formulation of a Village CAP. To bridge the gap between grassroots reality and policy, these plans must integrate local observations with technical resilience strategies, ensuring that the village is well-equipped to manage increasing environmental loads.

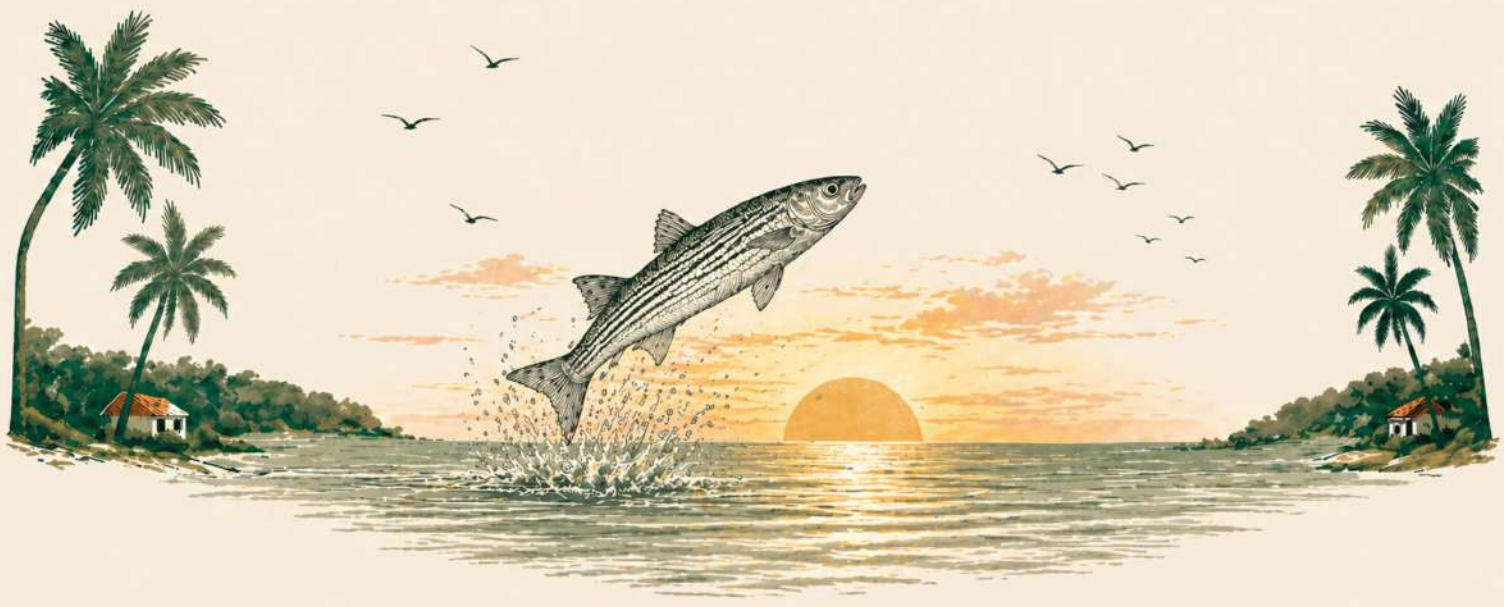
The findings within this document serve as the qualitative evidence base for the Village CAP. These local insights are not merely observations; they are the foundation for a resilient Gram Panchayat Development Plan (GPDP).

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References



1. INTRODUCTION

Goa's lush landscapes and vibrant villages have long defined its charm, but rising temperatures and shifting weather patterns now threaten these rural heartlands. As native Goans residing in these hinterlands, they have witnessed firsthand how climate change disrupts daily life, from flooded fields to eroded coasts, from the past to the present.

The State of Goa is increasingly defined by climate vulnerability, characterised by rising ambient temperatures and monsoons that have lost their traditional “predictability.”

The Goa State Climate Change Cell (GSCCC), established under the National Mission for Strategic Knowledge on Climate Change (NMSKCC), is housed at the Goa State Biodiversity Board, Saligao, Goa. The State Climate Change Cell works to leverage climate change-related content across all departments by promoting research, knowledge generation, and capacity building, thus connecting the State Action Plan on Climate Change (SAPCC) with NMSKCC priorities of action under the National Action Plan on Climate Change (NAPCC). While the State Action Plan on Climate Change (SAPCC) provides the framework, the frontline of adaptation is the villages.

Community-based adaptation is predicated on the belief that those who work on the land are the primary experts on its change. This report utilizes the “lived experience” of residents to build a case for localized Climate Action Plans (CAPs). By linking these insights to the national mandate for climate-integrated Gram Panchayat Development Plans (GPDPs), we aim to move beyond high-level reporting into the realm of actionable, ward-level resilience.

Both the Focused Group Discussions (FGDs) at Xeldem and Rivona were conducted with the following objectives:

1. To document and reveal the climate-related hardships faced across generations by the communities residing in the villages of Goa.
2. To publish these learnings as case studies towards building climate-resilient villages in Goa.
3. To motivate all the village panchayats across Goa to prepare their own CAPs.

Goa's Shifting Climate Patterns:

Goa's average temperatures have climbed over 1°C since 1901, with projections showing rises of 1.7°C to 4.8°C by century's end under varying emission scenarios.

Recent heatwaves have pushed "feels-like" temperatures to 42.6°C amid high humidity, straining health and agriculture. Monsoons grow erratic, more intense bursts cause floods, while delays spark droughts, as seen in 2023's late onset after 2021's relentless rains. Rural areas bear the brunt, with cashew yields dropping 50-60% from heat and water stress. Inland villages face groundwater salinity, while fishing communities grapple with warming oceans, altering fish stocks.

Coastal and Rural Vulnerabilities Exposed:

About 14.7% of Goa's land sits below 15m elevation, mostly coastal, priming villages for floods and sea-level rise at 1.5mm/year in Mormugao. Talukas like Salcete, Tiswadi, Bardez, and Canacona, home to spots like Agonda and Palolem rank highest in risk, with erosion hitting 23% of the 105km shoreline. Cyclone *Tauktae* in 2021 pierced sand spits, and flash floods like Canacona's 2009 deluge (271mm in 7 hours) wrecked homes and crops.

Villagers in Khazan fields and estuaries lose livelihoods to salinity and infrastructure damage, amplifying poverty in these 80% population hubs.

Voices from the Ground:

Local stories reveal impacts no data fully captures, farmers delaying rice planting, fishermen finding empty nets, women managing scarce water. Participatory methods, like village consultations and Climate Sabhas, build trust and tailor solutions, from mangrove restoration to resilient seeds. These approaches empower marginalized groups, fostering ownership over top-down fixes.

Linking to Policies:

Goa's State Action Plan on Climate Change (SAPCC) 2023-33 targets net-zero emissions via sector plans in agriculture, water, and coasts, blending sea-walls with ecosystem restoration. Gram Panchayat Development Plans (GPDs) mandate vulnerability assessments for the poor, integrating adaptation into local budgeting under national rural missions. Aligning village CAPs with SAPCC ensures funds flow to participatory projects like agroforestry and flood-resilient bunds construction.

This booklet amplifies village realities to spur CAP blueprints co-created by communities for resilient futures. By weaving local insights into policy, Goa can turn vulnerability into strength. These FGDs shall build a strong foundational basis for the CAPs to be designed for Xeldem and Rivona, respectively.

2. PROFILE OF THE STUDY AREAS

Xeldem Village Panchayat

Xeldem is a peaceful village in the Quepem Taluka of Kushavati District of Goa surrounded by green forests and hills that is rapidly transitioning into an urbanized town. This dual nature creates unique vulnerabilities as traditional ecological knowledge competes with modern urban pressures. The village shows the real rural life of Goa, away from busy beaches and crowded areas. The natural beauty of Xeldem comes from its nearby rivers and forests.



View of the Western Ghats surrounding Xeldem Village

This helps farming and make the village calm and fresh. Most people in the village depend on farming and related work for their living. Xeldem is known for simple living, strong traditions, and unity among people. Festivals and religious events are celebrated happily, showing the rich culture of Goa.

Livelihood

Most people in Xeldem earn their living from farming and horticulture. They grow rice, vegetables, fruits, and other seasonal crops. Some people also do small jobs, work in nearby forests, run small shops, or go to nearby towns for work.

Ecology

Xeldem has a rich natural environment with green forests, hills, and nearby rivers. The area supports farming and provides clean air and water. The biodiversity includes plants, trees, birds, and small wildlife. The peaceful surroundings make it an important eco-friendly rural area of Goa.



A herd of domestic buffaloes grazing & resting in the village fields.

Administrative and Demographic Overview

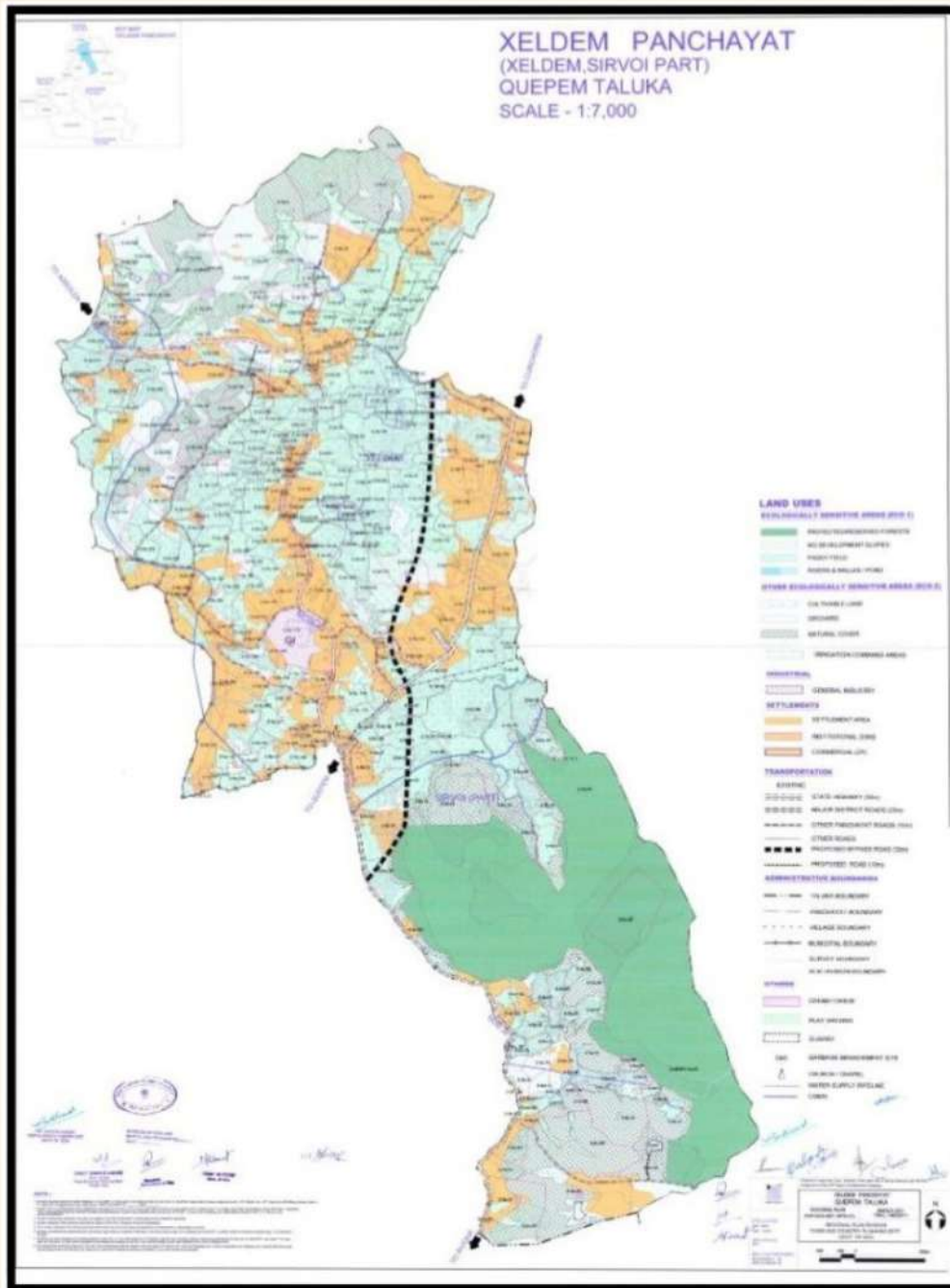
Parameter	Details
Taluka/District	Quepem, Kushavati
Geographic Coordinates	Latitude: 15.25° N, Longitude: 74.20° E
Administrative Structure	Village Panchayat (11 Wards)
Total Population (2011 Census)	7,434
Total Households	1,815
Sex Ratio	1:1
Literacy Rate	81.93%

The local government provides basic facilities like water, drainage, and roads. The village is governed by the Xeldem Village Panchayat, led by the Sarpanch and supported by the Panchayat Secretary. Xeldem is divided into 11 wards, each represented by elected members. While the village maintains strong demographic indicators, ward-level disparities are emerging. Residents of Pedamol Ward in Xeldem, for instance, report significant early-morning tap water pressure issues, where water is only accessible if the line pressure is exceptionally high, a localized infrastructure gap that climate-induced demand will only worsen.



Vegetation around Xeldem Village

Map of the Xeldem Village Panchayat



Rivona Village Panchayat

Rivona is a small village in Sanguem taluka of Kushavati district of Goa, located about 2 kms from Zambaulim. It is known for its natural beauty, greenery, and fresh water springs. The village is near the Kushavati river and shows that Goa has more than just beaches. It is characterized by laterite formations and ancient rock carvings (Prehistoric petroglyphs) estimated to be 4000 - 6000 years old.



View of the Western Ghats surrounding Rivona Village

Rivona is also important for its history and culture. It has ancient caves called the *Rivona Caves* or *Pandava Caves*, which were used by Buddhist monks for meditation and forest dwelling. These carvings and caves are protected heritage sites. Another important place is the Shri Vimleshwar Temple, which has an old *Shivalinga* and is important for local people.

Livelihood

The main livelihood in Rivona is farming. People grow crops like cashew nuts, areca nuts, coconuts, sugarcane, and rice. Many families depend on farming for their daily income. Some people also do small businesses and are part of self-help groups. These activities help improve their living conditions and support the village economy.

Ecology

Rivona has a rich natural environment with dense greenery, freshwater springs, and the Kushavati river flowing nearby. The area also has forests and natural environment that supports many plants and animals and makes the village peaceful and beautiful. It also provides clean water and fresh air for the people. The greenery helps maintain a healthy and balanced ecosystem.



Vegetation around Rivona Village

Administrative and Demographic Overview

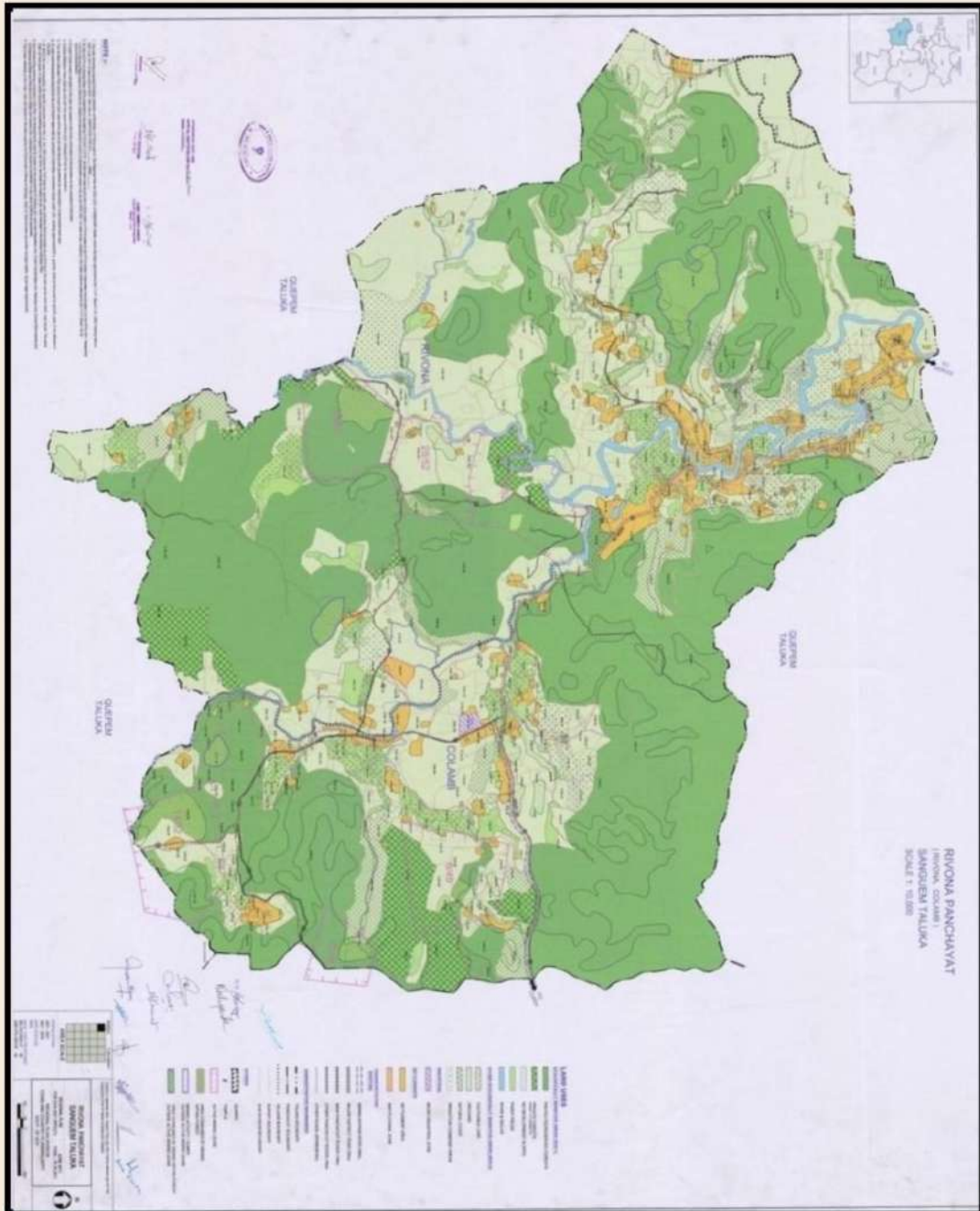
Parameter	Details
Taluka/District	Sanguem, Kushavati
Geographic Coordinates	Latitude: 15.16° N, Longitude: 74.10° E
Administrative Structure	Village Panchayat (09 Wards)
Total Population (2011 Census)	5993
Total Households	1126
Sex Ratio	1:1
Literacy Rate	83.64%

The village is governed by the Rivona Village Panchayat, with Sarpanch and the Panchayat Secretary. Rivona is divided into 9 wards, each having elected members. The village covers an area of 5,411 hectares and has an organised structure. It also has 27 Self-Help Groups (SHGs) and 2 Village Organisations (VOs), which contribute to local development and community participation.



A typical landscape in Rivona Village

Map of the Rivona Village Panchayat



3. METHODOLOGY

Why were these 2 panchayats chosen?

Out of 191 panchayats in Goa, Xeldem and Rivona Panchayats showed their interest in hosting the FGDs on Climate Change as there was a growing sense of realisation among the citizens about the visible transition their villages had undergone over the years.



FGD for SHGs at Xeldem VP

Process:

The insights within this report were gathered through a structured qualitative focus group discussions involving citizens from Xeldem and Rivona, divided into four key focus groups:

- 1. Women (SHGs):** Investigated household resilience, health shifts, and diversified livelihoods.
- 2. Farmers:** Understood soil health, irrigation changes, and cropping patterns along with productivity.
- 3. Senior Citizens:** Provided a 40-year generational "Before vs. After" perspective.
- 4. Youth:** Focused on digital dependency, lifestyle shifts, and future anxieties.



FGD for Senior Citizens at Rivona VP

Each group was convened by a faculty from GIPARD and assisted by students from Government College of Arts, Science & Commerce, Quepem.

The discussions were mapped across:

- 1. Agriculture & Horticulture,**
- 2. Health & Well-being,**
- 3. Natural Resource Management (NRM),**
- 4. Livelihood & Lifestyle,**
- 5. Environment & Biodiversity.**

Facilitators utilized a "Past vs. Present" approach to identify specific climate markers, such as the disappearance of local species and the loss of a seasonal timeline.

The data collected however is from a small sample and of the qualitative type but the insights gained are rich.

4. CORE HIGHLIGHTS

Xeldem Village Panchayat

The observations recorded during the FGDs are highlighted below under each of the parameters considered.

Agriculture & Horticulture

Agriculture in Xeldem has shifted from a system of nutritious self-sufficiency to one of high-input market dependency. The most staggering finding is the drastic decline in traditional crop cultivation.

The Rice Transition:

Senior citizens recall a time when indigenous rice varieties like *Kennal* and *Babri* dominated the fields. These have been entirely replaced by *Jaya*, *Jyoti*, and *Karjat*. While productivity has increased, farmers note a loss of "physical strength" in the grain and a total reliance on NPK chemical fertilizers as the soil has moved from being *Supik* (naturally fertile) to chemical-dependent.



Rice Cultivation in Xeldem VP

"Dis bhar vavarta ani kai melana" (Working all day, yielding nothing)

The Sanjivani Sugar Factory in Dharbandora, Goa once drove an industrial shift in local cropping. However, sugarcane cultivation was largely abandoned due to rats & snakes menace, specifically the "*Kolundir*" (field rat) which decimated yields.

The aforementioned quote from a local farmer encapsulates the economic crisis of climate-stressed agriculture. Rice prices have jumped from ₹5/kg to ₹80/kg, while the cost of inputs and labour now largely dependent on migrants has eroded profit margins.

The Quepem Canal: The canal is the central feature of Xeldem's development paradox. Before the canal, residents faced extreme hardship, traveling to rivers for water. The canal ended this physical labor and enabled summer farming, by being an irrigation system.

Past vs. Present: Farming has transitioned from a purely monsoon-dependent activity to year-round cultivation due to the construction of the quepem canal.

Health & Well-being:

Climate change in Xeldem is felt by the physical body. The consensus among all groups is that today's sun is "harsher" and the heat is "intense" than in previous decades.

Emerging Pathologies: Beyond common dehydration, participants specifically linked the "harsher sun" to a rise in migraines and neurological issues. Senior citizens noted a rise in kidney stones, which they attribute to changing water quality and heat-induced health stress.

The Maternal Health Gap: A poignant social shift was noted by the elders. They recalled "strong women" of the past who worked in fields until the day of delivery. Today, "bedrest" is a common requirement for expectant mothers, which the community links to the decline in nutritious traditional foods like *nachni*, *varri* and the shift to processed/refined oils.

Vector-borne Surge:

The changing environment has made conditions more favourable for mosquitoes, leading to a rise in Malaria and Dengue.



A typical hotspot for mosquito breeding in Xeldem VP

Past vs. Present: Senior citizens recall being "stronger" due to physical labour, whereas the present is marked by "lifestyle diseases" like Diabetes and spike in Blood Pressure occurring even before the age of 30.

GOA STANDS HIGHEST WITH DIABETES & HYPERTENSION CASES IN INDIA: ICMR STUDY			
PLACE	DIABETES	PREDIABETES	HYPERTENSION
GOA	26.4%	20.3%	20.3%
PUDUCHERRY	26.3%	25.8%	25.8%
KERALA	25.5%	18.3%	18.3%
CHANDIGARH	20.4%	15.6%	15.6%
DELHI	17.8%	18.0%	18.0%

Source: oHeraldo (Local Goan Newspaper)

Natural Resource Management (NRM)

Xeldem presents a unique anomaly in the Goan climate narrative: groundwater levels are currently stable.

The Paradox of Plenty: Residents report that wells do not dry up even in peak summer. However, this is a "blind spot" in resilience. Because PWD tap water is now available, traditional wells are left uncleaned and neglected. If the tap system fails, the community's backup (the wells) will be unsuitable for drinking.

Biodiversity Loss: The availability of freshwater fish once a staple caught in local ponds has "drastically gone down." The taste and quality of local jackfruits and mangoes are also reported to have changed, with quality declining under climate induced heat stress.



Jackfruit (*Artocarpus heterophyllus*)



Saw-scaled viper (*Echis carinatus*)



Indian Monitor Lizard (*Varanus bengalensis*)

Past vs. Present: *There was extreme hardship in finding drinking water, requiring travel to rivers and natural springs (Zhari); today, tap water provides convenience but has led to a neglect of traditional wells.*

Livelihood & Lifestyle

The transition from rural living to an urban thriving has fundamentally altered the village's thermal footprint.

The Heat Trap: Traditional mud houses with cow-dung floors provided natural cooling. These have been replaced by concrete structures. Consequently, heat is "trapped," and electricity consumption has surged. Whereas a house once had a single fan, most now require multiple fans and at least two AC units to remain habitable.

Social Fragmentation: The shift from joint to nuclear families has coincided with a lack of agricultural manpower. Youth are increasingly disconnected from the land, driven by "digital dependency" and a lack of awareness regarding the correct quantity of water or fertilizers needed for farming.

Past vs. Present: A shift from large joint families living in mud houses to nuclear families in concrete buildings.

Environment & Biodiversity

This parameter is dominated by the human-wildlife conflict, which has become the primary driver for land abandonment.

The Victim List: Langurs, Macaques, and peafowls are observed to have been destroying chilli, banana, and cashew plantations. Small-scale kitchen gardens, once the backbone of household nutrition, are now impossible to maintain.

Loss of the Wild Fruits/Vegetables: Local wildberries that once supplemented the diet—*chunna*, *kanna*, *chara*, *jambala*, *bedsa*, and *ashali* have significantly reduced in number. Similarly, numbers of wild varieties of some leafy vegetables such as *Taikhilo*, *Kudduka*, *Fagla*, *Aakur*, etc. have gone down in comparison to the past.

Lost Medicine: Traditional knowledge is fast fading. The paste made from the "Touch-me-not" plant (*lajare*), once used as a vital cure for piles, is rarely prepared now as the younger generation cannot identify the medicinal herbs.

Past vs. Present: Weather was once predictable; now, "rains come in any season," leading to unprecedented crop losses.



Rose Apple (*Syzygium spp.*)



Touch-me not (*Mimosa pudica*)



Indian Cobra (*Naja naja*)



Indian Harvest Ant (*Pheidole sykesi*) Nest

Rivona Village Panchayat

The observations recorded during the FGDs are highlighted below under each of the parameters considered.

Agriculture & Horticulture

Farmers noted that "heat stress" and erratic weather cause mango and cashew flowers to dry prematurely.

Women reported that the production of *Jyoti* rice and *Ragi* millet has declined significantly.



FGD for farmers at Rivona Village Panchayat

"Amo dav padun karpun gelo" (The fruiting flowers of Mango trees have been destroyed due to excess dew and/or very hot summers)

Past vs. Present: Cultivation of traditional crops like groundnuts and sweet potatoes has drastically reduced than before.

Health & Well-being:

Women had reported a rise in gynaecological problems, joint pain, and an earlier onset of puberty in girls.

Senior citizens believed that the "food cycle" has been broken, leading to a general decrease in life span.

Citizens were of the opinion that the breath of fresh air did not feel the same as 2-3 decades before.



FGD for SHGs at Rivona Village Panchayat

Past vs. Present: Diet has shifted from nutritious *Ragi Bhakri* to "junk food" like Maggi and refined oil fried foods.

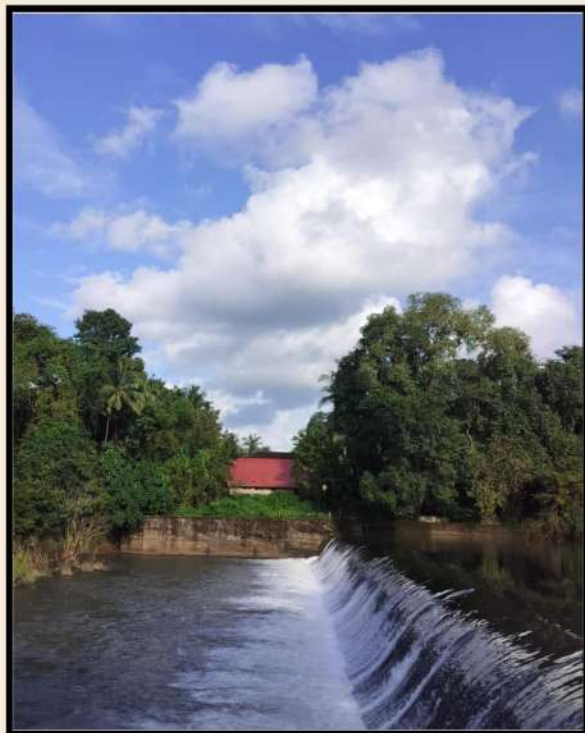
Natural Resource Management (NRM)

Women noted that while wells are the main source of water, their levels are decreasing, leading to summer dependence on water tankers by private players.

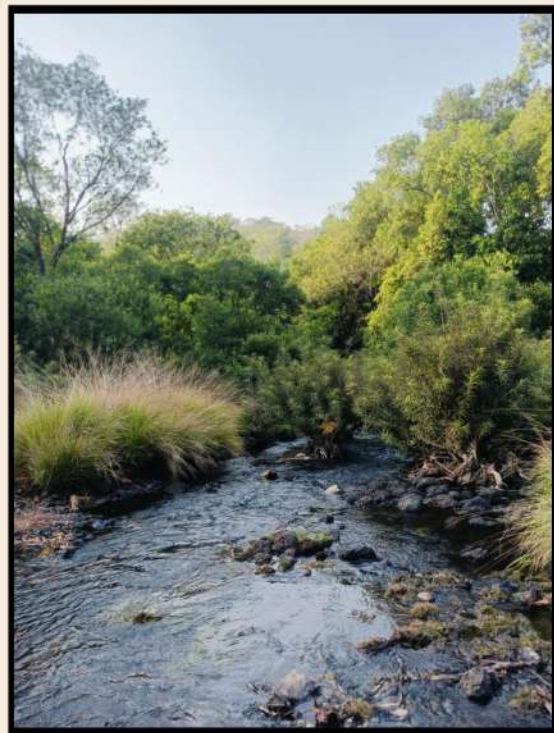
Farmers reported that there are no rainwater harvesting practices in the village despite heavy monsoons.



Rice Cultivation in Rivona VP



Water Resources Checkdam in Rivona VP



A forest stream in Rivona VP

Past vs. Present: Thick Forest cover and wild abundance have been replaced by controlled, less fertile environments.

Livelihood & Lifestyle

Women noted that tourism spots in the village provide no profit to local SHGs. They also reported seasonality in income, such as low demand for certain consumables during hot summers.

Senior citizens observed the disappearance of traditional "Gavti" cattle, replaced by dairy-specific breeds like Jersey cows.

Mechanisation of farming has increased, reducing manual labour but also affecting employment opportunities for the youth.



Kushavati river flowing through Rivona VP

Past vs. Present: *Traditional manual labour (washing by hand, stone grinding) has been replaced by machines, which villagers link to reduced physical energy levels.*

Environment & Biodiversity

Senior citizens noticed that while birds and bees have reduced, the monkey and bison population has surged, entering farms due to reduced forest produce.

Women clearly link the start of environmental degradation to the onset of mining activities years before.

"Life has become unpredictable because the natural cycles of rain and heat no longer follow a set calendar", mentioned one of the senior farmers practicing agriculture.



Local *Tarvoti* (Chilli) variety



Blue Mormon (*Papilio a. polymnestor*) Butterfly

Past vs. Present: *"Seasonal boundaries" have been lost; November is now experienced as "Summer" season.*

5. RECOMMENDED ACTIONS

Xeldem Village Panchayat

Issues/Concerns	Potential Solutions	Affected	Expected Support
Agriculture & Horticulture			
Decline in Crop Yield	Cultivate climate resilient crops	Villagers, Farmers	Agriculture Department, Indian Council of Agriculture Research (ICAR)
Use of chemical fertilizers	Switch over to organic fertilizer		
Livestock decline	Rearing of Livestock	Farmers	Animal Husbandry, ICAR, Krishi Vigyan Kendra (KVK)
Decline in indigenous labour/High cost of labour	Integration with V-BG-RAM (G) for the labour component		Rural Development Agency (RDA), Village Panchayat (VP)
Decline in soil quality	Multiple crop cultivation/rotation, organic manure		Youth
	Encouraging use of organic manure		
	Training in production of organic manure		

Issues/Concerns	Potential Solutions	Affected	Expected Support
Health & Well-being			
Climate Anxiety, Migraines, Neurological issues	Hydration, staying indoors during peak hours, health talks is required, medical camps	Villagers, sick, elderly, pregnant women, People with Disabilities (PwD)	VP, Primary Health Centre
Increase in Heat	Sharing of SOPs to combat heat, Developing Heat Action Plans (HAPs)		VP
Maternal Healthcare	Eating healthy & nutritious foods like nachne/varri (Millets)	Pregnant Women	VP, Directorate of Health Services (DHS) Consultant/Nutritionist
	Mild exercises and/or physical movement		
	Talks/sessions on natural health, nutrition		
Surge in Vector borne diseases	Awareness on these diseases, care and prevention, particularly during pre-monsoon	Villagers	VP, DHS Healthworkers
	Preventive measures at village level		

Issues/Concerns	Potential Solutions	Affected	Expected Support
Natural Resource Management NRM			
Neglect of traditional source of water-wells, for drinking purposes	Maintenance and cleaning these for domestic use	Villagers	Water Resources Department
	Testing of water for drinking purpose		
Climate stress on fruits viz. mangoes, jackfruits, and cashews in terms of taste; Coconut (size and quantity of water)	Soil nutrition through use of organic manure, awareness	Farmers	Agriculture Dept., ICAR
Decline in wild berries	Seed bombing activity prior to monsoons	Local Biodiversity	Biodiversity Management Committee (BMC), Goa State Biodiversity Board (GSBB)
Protection of natural water resources	Geotagging & documentation of these natural resources in the People's Biodiversity Register (PBR) by the BMC	Farmers, Villagers	Goa State Wetland Authority (GSA)

Issues/Concerns	Potential Solutions	Affected	Expected Support
Livelihood & Lifestyle			
Heat due to concrete infrastructure, buildings, residences etc.	Minimise the heat by having mangalore tile roofing, red oxide flooring, and/or cross ventilation. Preparing HAPs prior to Infrastructure Development.	Villagers	Concerned Line Depts. such as Public Works Department (PWD), Town & Country Planning (TCP) etc
Discontinuation of agricultural practices	Sensitisation on the importance of taking up agricultural activities, atleast for individual consumption.	Youth	VP, Agriculture Dept.
Increase in Vehicles	Promoting minimalism and encouraging incentivisation on travelling through a public transportation	Villagers	VP, Road Transport Office (RTO) - Traffic Cell

Issues/Concerns	Potential Solutions	Affected	Expected Support
Environment & Biodiversity			
Dormant BMC	Revival/activating the existing BMC	VP	GSBB
Documentation & updation of People's Biodiversity Register (PBR)	To make changes and include additional details (if needed)	BMC, VP	
Destruction of crops & plantations due to wildlife incursion	Plantation in core area of forests so as to stop the wild animals coming into human habitation	Villagers	Forest Dept., BMC, GSBB
Decline in various flora, fruits, herbs, local/indigenous varieties of crops	Establishing seed banks	Villagers, farmers	BMC, GSBB, Dept. of Agriculture
Human - wildlife conflict	Traditional fencing using solar operated lines	Farmers, Orchard Owners	Forest Dept., Wildlife Rescue & Rehab NGOs

Rivona Village Panchayat

Issues/Concerns	Potential Solutions	Affected	Expected Support
Agriculture & Horticulture			
Cash Crops (Mango/Cashew) Yield Decline (Due to Heat Stress)	Cultivate/grow heat resistant varieties	Farmers	Agriculture Department, Indian Council of Agriculture Research (ICAR)
Decline in cultivation of traditional crops (Rice/Groundnuts/Sweet Potatoes)	Post harvest market awareness & food processing based value-addition training.	Farmers, Self Help Groups (SHGs)	Agriculture Dept., ICAR, Krishi Vigyan Kendra (KVK)
Use of chemical fertilizers	Switch over to organic fertilizer		Agriculture Dept., ICAR, Krishi Vigyan Kendra (KVK)
Decline in indigenous labour/High cost of labour	Integration with VB-G-RAM (G) for the labour component	Farmers	Rural Development Agency (RDA), Village Panchayat (VP)
Decline in soil quality	Decline in soil quality	Training in production of organic manure	VP, ICAR, KVK
	Training in production of organic manure		

Issues/Concerns	Potential Solutions	Affected	Expected Support
Health & Well-being			
Increase in Heat	Sharing of SOPs to combat heat, Developing Heat Action Plans (HAPs)	Villagers	VP, State/District Disaster Management Authority (SDMA/DDMA) Consultant
Gynaecological problems	Eating healthy & nutritious foods over readily available junk food	Women	VP, Primary Health Centre (PHC) Physician
Surge in lifestyle diseases	Awareness on these diseases, with emphasis on care and prevention	Villagers	VP, PHC, Directorate of Health Services (DHS)
	Organising regular health checkup medical camps in the village for monitoring		

Issues/Concerns	Potential Solutions	Affected	Expected Support
Natural Resource Management (NRM)			
Neglect of traditional source of water-wells, for drinking purposes	Maintenance and cleaning these for domestic use	Villagers	Water Resources Department (WRD)
	Testing of water for drinking purpose		
Low water availability for domestic/irrigation purposes during hot summers	Rainwater harvesting Infrastructure (Storage Tanks)	Farmers, Women	
Protection of natural water resources	Geotagging & documentation of these natural resources in the People's Biodiversity Register (PBR) by the Biodiversity Management Committee (BMC)	Farmers, Villagers	Goa State Wetland Authority (GSWA)

Issues/Concerns	Potential Solutions	Affected	Expected Support
Livelihood & Lifestyle			
No profits to local SHGs at prominent tourist spots	Organised venture trainings & exposure visits to Community Based Organisations (CBOs) for regular business	SHGs	VP, RDA, Directorate of Panchyats (DoP), Goa Institute of Public Administration & Rural Development (GIPARD)
Discontinuation of agricultural practices	Sensitisation on the importance of taking up agricultural activities, atleast for individual consumption.	Youth	VP, Agriculture Dept.
Disappearance of traditional (Gavti) cattle	Setting up of a traditional cattle breeding centre	Farmers, Dairy Business Owners	Department of Animal Husbandary and Veterinary Services (DAHVS)
Reduced physical energy levels	Regular monitoring of Body Mass Index (BMI); promote physical movements through washing and/or stone grinding.	Villagers	VP, PHC, DHS

Issues/Concerns	Potential Solutions	Affected	Expected Support
Environment & Biodiversity			
Dormant BMC	Revival/activating the existing BMC	VP	GSBB
Documentation & updation of People's Biodiversity Register (PBR)	To make changes and additional details (if needed)	BMC, VP	
Surge in wildlife incursion	Planting of fruit bearing trees in core area of forests so as to stop the wild animals coming into horticultural orchards/plantations and crop fields.	Villagers	Forest Dept., BMC, GSBB
Human - wildlife conflict	Traditional fencing using solar operated lines	Farmers, Orchard Owners	Forest Dept., Wildlife Rescue & Rehab NGOs

6. CONCLUSION

From Lived Experiences to Resilient Action

The Focus Group Discussions (FGDs) conducted in the villages of Xeldem and Rivona have provided a profound, human-centric narrative of climate change that transcends mere statistical data. By engaging diverse citizens including women, farmers, youth, and senior citizens, these sessions captured a detailed "Past vs. Present" comparison, revealing that for rural Goa, climate change is not a distant threat but a current, multi-dimensional reality.

The overarching sentiment across both villages is the loss of weather "predictability". Villagers highlighted a "double-edged sword" of development: while modern infrastructure like the quepem canal or tap water systems has eased physical hardship, it has coincided with a decline in soil fertility, the erosion of traditional knowledge, and a breakdown of the "food cycle and chain". The transition from "*Supik*" (naturally fertile) soil to chemical-heavy dependency has rendered farming increasingly unprofitable, leading to a visible shift where youth migrate for better opportunities, leaving agriculture to a shrinking workforce or migrant labour.

The findings clearly show that climate impacts are deeply intertwined with:

- **Health:** There is a perceived link between rising heat, "oily" modern diets, and the surge in lifestyle diseases like Diabetes and Blood Pressure occurring at younger ages.
- **Biodiversity:** The increase in Human-Wildlife Conflict (monkeys, bison, and peacocks entering farms) is a direct consequence of reduced forest produce and traditional habitat loss.
- **Social Fabric:** The shift from joint to nuclear families and the rise of digital dependency among youth has led to a loss of the "sharing behavior and community values" that once defined village life.

In conclusion, the voices from Xeldem and Rivona warn that while technology and infrastructure provide convenience, true resilience lies in restoring the ecological and social balance. These FGDs are the first step in ensuring that the future of Goa's villages is built not just on buildings, but on the enduring strength of community-led climate action.

7. FUTURE PROSPECTS

A Call for Climate Action Plans (CAPs)

The ultimate purpose of these participatory insights is to serve as a foundation for Village Panchayat-level Climate Action Plans (CAPs). The way forward requires moving "from voices to action" through several strategic pillars:

- 1. Scaling and Replication:** This model of participatory FGDs should be replicated statewide to ensure that every Village Panchayat has a plan grounded in its unique local context.
- 2. Institutional Strengthening:** There is an urgent need to revitalize community institutions like BMCs and Self-Help Groups (SHGs) to lead local climate adaptation, such as waste management and organic manure production.
- 3. Nature-Based Solutions:** Future planning must prioritize rainwater harvesting (such as converting mine pits), restoring indigenous seed varieties, and promoting organic farming through Panchayat-level training.
- 4. Policy Alignment:** Lived experiences must be integrated into broader frameworks like the Goa State Action Plan on Climate Change (SAPCC) and the Gram Panchayat Development Plan (GPDP) to ensure funding and technical support.
- 5. Scope for Citizen Science Initiative:** Taking inspiration from these FGDs, each village panchayat in Goa could begin conducting climate sabhas and discuss their issues amongst each other to come up with a suitable solution to address them. This could also lead to preparation and development of a village CAP.

FGD Questionnaire on Climate Change

Tips for Facilitation

You can structure your FGD like this:

- Start with observed changes over time
- Move to impacts (Agriculture & Horticulture, Health & Well-being, Livelihood & Lifestyle, Environment & Biodiversity)
- Then discuss natural resource management
- End with potential solutions and adaptation strategies (Recommended Actions)

FGD Points: Rural Women (SHGs)

1. Health & Well-being

- Have you noticed any changes in health issues in recent years?
Heat-related problems (fatigue, dehydration)
Mosquito-borne diseases (dengue, malaria)
- How has increasing heat or humidity affected your daily life?
- Changes in:
Drinking water quality
Sanitation and hygiene conditions
- Has your diet or nutrition changed?
Availability of local foods (fish, vegetables, forest produce)
Impact on:
Children's health
Elderly care
- Mental stress:
Worries about weather, income, family health

2. Livelihood & Lifestyle

- What are the main sources of income in your household?
Farming, fishing, forest produce, tourism-related work
- Have you seen changes in income stability due to:
Irregular rainfall
Decline in fish catch or crop yield
- Has your workload increased?
Fetching water
Collecting firewood
Household chores
- Are women taking up new types of work?
- Impact of tourism changes (seasonal jobs, income shifts)
- Migration:
Are family members moving out for work?

3. Agriculture & Horticulture

- Changes in:
 - Crops grown (paddy, coconut, cashew, vegetables)
 - Cropping seasons
- Have you experienced:
 - Delayed or erratic monsoons?
 - Flooding or drought?
- Impact on:
 - Kitchen gardens
 - Food availability at home
- Changes in:
 - Soil fertility
 - Use of fertilizers or traditional manure
- Increase in:
 - Pest attacks or crop diseases
- Role of women in:
 - Farming decisions
 - Seed preservation

4. Natural Resource Management

- Changes in water availability:
 - Wells, rivers, ponds drying or flooding
- Time and effort required to:
 - Fetch water
 - Collect fuel wood
- Changes in:
 - Forest cover and greenery
- Availability of:
 - Wild foods (berries, mushrooms, medicinal plants)
- Access to:
 - Common lands and forest resources
- Community practices for:
 - Water conservation
 - Resource sharing

5. Environment & Biodiversity

- What changes have you noticed over the years in:
 - Local Environment
 - Flora & Fauna (Biodiversity)
 - Natural History (Flowering/Fruiting/Mating/Migratory Season)

- How has extreme events affected local ecosystems?
 - Heavy rains, floods, heat-waves.
 - Wildfires
 - Landslides
- How prevalent are the issues affecting local environment?
 - Human-Wildlife Conflict
 - Mining, Illegal Sand Extraction, Unethical Land Conversions

FGD Points: Farmers

1. Climate Trends & Observations

- What changes have you observed over the years in:
 - Rainfall pattern (timing, intensity, duration of monsoon)
 - Temperature (increase in heat, heat waves)
 - Seasonal cycles (delayed/early monsoon)
- Occurrence of extreme events:
 - Floods, droughts, cyclones, unseasonal rains
 - Comparison: “Earlier vs now” climate conditions

2. Agriculture & Horticulture

- Changes in:
 - Crops grown (paddy, coconut, cashew, arecanut, vegetables)
 - Cropping seasons and cycles
- Impact of climate change on:
 - Crop yields and productivity
 - Sowing and harvesting time
- Are farmers shifting to:
 - New crops or varieties?
 - Short-duration or climate-resilient crops?
- Impact of:
 - Heat stress on crops
 - Excess rainfall or waterlogging
- Changes in:
 - Soil fertility (past vs present)
- Issues faced:
 - Soil erosion due to heavy rains
 - Salinity (especially in coastal areas)
- Changes in:
 - Use of fertilizers, manure, organic inputs
- Adoption of:
 - Organic farming or sustainable practices
 - Traditional vs modern farming methods

- Increase/decrease in:
 - Pest attacks
 - Crop diseases
- Emergence of:
 - New pests or invasive species
- Changes in pest cycles due to:
 - Weather variability
- Methods used for pest control:
 - Chemical vs traditional practices
- Changes in:
 - Animal health and diseases
 - Milk/meat production
- Availability of:
 - Fodder and grazing land
- Impact of heat and water scarcity on livestock
- Role of livestock in supporting livelihoods

3. Natural Resource Management (NRM)

- Changes in:
 - Availability of water (wells, rivers, canals)
- Groundwater levels
- Irrigation challenges:
 - Water shortages during cropping season
 - Flooding/waterlogging during heavy rains
- Issues like:
 - Saltwater intrusion (coastal areas)
- Water management practices:
 - Rainwater harvesting
 - Community irrigation systems
- Changes in:
 - Forest cover and vegetation
- Availability of:
 - Common resources (fuelwood, fodder, forest produce)
- Impact of environmental changes on farming
- Community-level natural resource management practices

4. Livelihood & Lifestyle

- Changes in:
 - Farm income over time
- Dependence on:
 - Agriculture vs other income sources (tourism, labour)
- Migration:
 - Are farmers or youth leaving agriculture?

- Cost of cultivation:
Inputs, labour, irrigation
- Access to markets and price fluctuations

5. Environment & Biodiversity

- Changes in:
Local crop varieties
Birds, insects (pollinators), animals
- Loss of traditional seeds or crops
- Impact on ecosystem balance and farming

FGD Points: Youth

1. Climate Experiences (Then vs Now)

- What changes have you noticed growing up (school → college) in:
Rainfall patterns (late/early monsoon, heavy rains)
Temperature (hotter summers, heat waves)
Seasons (less predictable?)
- Any experiences with:
Floods, cyclones, or extreme weather events
- Changes in:
Green cover, forests, rivers, beaches

2. Health & Well-being

- How has changing climate affected:
Daily routine (outdoor activities, sports)
Physical health (heat stress, fatigue)
- Increase in:
Mosquito-related diseases
- Changes in:
Food habits (traditional vs packaged food)
- Mental health:
Stress or climate anxiety about the future

3. Livelihood & Lifestyle

- What are your career aspirations?
Agriculture, tourism, government jobs, private sector
- Are you willing to:
Stay in the village or migrate?
Why/why not?
- Do you see:
Agriculture as a viable livelihood?
- Impact of climate change on:
Job opportunities (farming, fishing, tourism)
- Interest in:
Green jobs (renewable energy, eco-tourism, organic farming)

4. Agriculture & Horticulture (Youth Perspective)

- Are you involved in farming activities?
- Observations on:
 - Changes in crops (paddy, cashew, coconut)
 - Decline or improvement in productivity
- Reasons why youth are:
 - Leaving or not interested in farming
- Interest in:
 - Modern farming techniques
 - Agri-entrepreneurship

5. NRM, Environment & Biodiversity

- Changes noticed in:
 - Water sources (rivers, wells, lakes)
 - Forests and biodiversity
- Issues like:
 - Pollution (plastic waste, tourism impact)
- Awareness of:
 - Conservation practices
- Role of youth in:
 - Protecting local environment

FGD Points: Senior Citizens

1. Changes over Time (Then vs Now)

- How was the climate 20–40 years ago compared to now?
- Changes observed in:
 - Rainfall (timing, intensity, duration of monsoon)
 - Temperature (increase in heat, warmer nights)
 - Seasons (predictability, duration)
- Occurrence of:
 - Floods, droughts, cyclones, unseasonal rains
- Changes in:
 - Rivers, wells, and water bodies
 - Green cover, forests, and vegetation

2. Health & Well-being

- Changes in common illnesses/diseases over time:
 - Heat-related issues (fatigue, dehydration)
 - Vector-borne diseases (dengue, malaria)
- How has increasing heat affected:
 - Daily activities
 - Sleep and comfort

- Access to:
Drinking water and sanitation
- Comparison:
Health conditions in the past vs present
- Care for:
Elderly, children, and vulnerable groups

3. Agriculture & Horticulture

- Changes in:
Crops grown (paddy, coconut, cashew, etc.)
Cropping seasons and cycles
- Farming in the past:
Traditional practices
Use of local seeds and manure
- Present challenges:
Irregular rainfall
Decline in productivity
- Observations on:
Soil fertility changes
Water availability for farming

4. Environment & Biodiversity

- Changes in:
Animal health and productivity
- Availability of:
Grazing land and fodder
- Observations on biodiversity:
Birds, fish, insects, wild animals
- Loss or decline of:
Traditional plant varieties and species

5. Natural Resource Management (NRM)

- Changes in:
Forest cover and greenery
Availability of fuelwood and forest produce
- Water resources:
Wells drying up or flooding
- Access to:
Common lands and natural resources
- Use of:
Wild foods (fruits, medicinal plants) earlier vs now

6. Livelihood & Lifestyle

- How livelihoods have changed over time:
Agriculture, fishing, forest-based work
- Decline or shift in:
Traditional occupations
- Impact of:
Tourism and modernization
- Migration trends:
Youth moving out of villages
- Changes in:
Housing types (roofing, flooring)
- Cooking practices:
Firewood vs LPG or modern fuels
- Population changes:
Increase in households, migration
- Changes in:
Transport and vehicular movement
Waste generation and disposal
- Differences in:
Consumption habits (traditional vs modern)

7. Traditional Knowledge

- Traditional ways of:
Predicting weather
Managing water and crops
- Coping mechanisms used earlier:
During droughts or floods
- Are these practices still used?
- Loss of indigenous knowledge

[Village Photo]

CLIMATE ACTION PLAN (CAP) Template 2026 – 2035

[Village Name] Gram Panchayat, Goa

For e.g. “*Amcho Gaon, Amcho Jalvaay* – Greener, Safer, and Prosperous”

Prepared by: Sarpanch, Panchayat Members, Village Elderly, Women & Youth

Approved by: Gram Sabha on [Date]

Mention key/notable achievements of the Village: ISO 9001:2015 Certified Panchayat

1. Our Village Details

No. of families : _____

Population: _____

Main livelihood: _____ [E.g. Farming | Fishing | Eco-tourism]

Special features: _____ [Mangroves, khazans, river/creek, beach]

[Insert simple village map here – mark low-lying areas, fields, water bodies]

2. What Climate Change is doing to us? (What we see & feel)

E.g. Hotter summers & water shortage

Sudden heavy rains lead to flooding in khazans

Sea level rise causes salinity in wells & fields

Beach erosion & fewer fish

Stronger storms damage homes & boats

Most affected: Small fishermen, women fetching water, marginal farmers.

3. Our Village Vision

By 2035 our village will be:

- Green with healthy mangroves & trees
- Safe from floods & salinity
- 100% solar-powered panchayat buildings
- Earning more from climate-smart agriculture, fishing & eco-tourism
- Zero plastic waste & clean drinking water for every family

4. Our Climate Actions (What we will do?)

No.	Action	Benefit to us	Whom & when	Funding Source
1.	Plant 2500 Mangroves along the creek	Stops beach erosion; More Fish; Eco-tourism opportunities	Fishermen & Youth (2026-28)	₹ _____
2.				₹
3.				₹
4.				₹
5.				₹
6.				₹
7.				₹

Total actions: 15 (7 shown above + 8 more will be added in full plan)

5. How we will fund it?

Estimated 10-year cost: ₹ _____

Using 60% Government schemes

20% CSR & Tourism hotels

10% Panchayat budget

10% Community shramdaan

Key Schemes we will use:

PM-KUSUM | VB-G-RAM (G) | Jal Jeevan Mission | Swachh Bharat | NAFCC

Relevant Line Departments to us:

Goa Forest Dept. | Dept. of Tourism | Dir. of Agriculture | Dir. of Panchayats | Dept. of Environment & Climate Change | Dept. of Rural Development

6. How we will monitor & improve?

- Yearly review in Gram Sabha with photos & numbers
- “Climate Warriors” Youth Team will track progress
- Simple register to be maintained for records

Climate Nodal Officer: Associated Panchayat Secretary (Name & Phone)

7. We made this plan together

- 150+ villagers participated (women, youth, fishers, elders)
- This is OUR plan – not just a document

Gram Sabha Approval
(Stamp)

Signature of Sarpanch: _____

Date: _____

[Bottom banner photo: Villagers planting mangroves or solar panel installation]

“Together we protect our Goa for our children”

PHOTO GLIMPSES



Orchards and Groves of Xeldem in Monsoons



Caterpillar of a Common Mormon (*Papilio polytes*)
Butterfly



Grey junglefowl (*Gallus Sonneratii*)



Queen of the night (*Epiphyllum oxypetalum*) flower



Grasshopper



Mango (*Mangifera indica*)



A petroglyph (Ancient rock carving)



Dense fog as seen in Xeldem



Striped Tiger (*Danaus genutia*) Butterfly



Focus Group Discussions (FGDs) on-field team

REFERENCES

1. Global/National/State Reports and Policy Frameworks:

- a. Goa State Action Plan on Climate Change (SAPCC)
- b. Gram Panchayat Development Plan (GPD) Guidelines
- c. National Framework for Community-Based Adaptation
- d. Intergovernmental Panel on Climate Change (IPCC) Assessment Reports
- e. International Fund for Agricultural Development (IFAD) – Social, Environmental, and Climate Assessment Procedures (SECAP)

2. Demographic and Official Statistical Sources:

- a. Census of India (2011)
- b. Department of Environment & Climate Change, Government of Goa
- c. Directorate of Panchayats, Government of Goa (panchayatsgoa.in)
- d. Directorate of Agriculture, Government of Goa
- e. Department of Animal Husbandry and Veterinary Services (DAHVS), Government of Goa

3. Local Administrative and Developmental Sources:

- a. Rivona VP Records - Official Website
- b. Public Works Department (PWD) Water Supply Records
- c. Water Resources Department (WRD)
- d. Xeldem VP Records (gramvikas.nskmultiservices.in)
- e. Xeldem Census Town City Population Census 2011-2026 | Goa
- f. www.heraldgoa.in

4. Primary Field Data:

- a. Focus Group Discussion (FGD) Field Notes
- b. Local Traditional Knowledge through recorded observations from the citizens.

5. Maps and Geographical Data:

- a. Ward Maps - <https://dslr.goa.gov.in/> (Directorate of Settlement and Land Records)
- b. Land Use - <https://tcp.goa.gov.in/> (Department of Town and Country Planning)



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