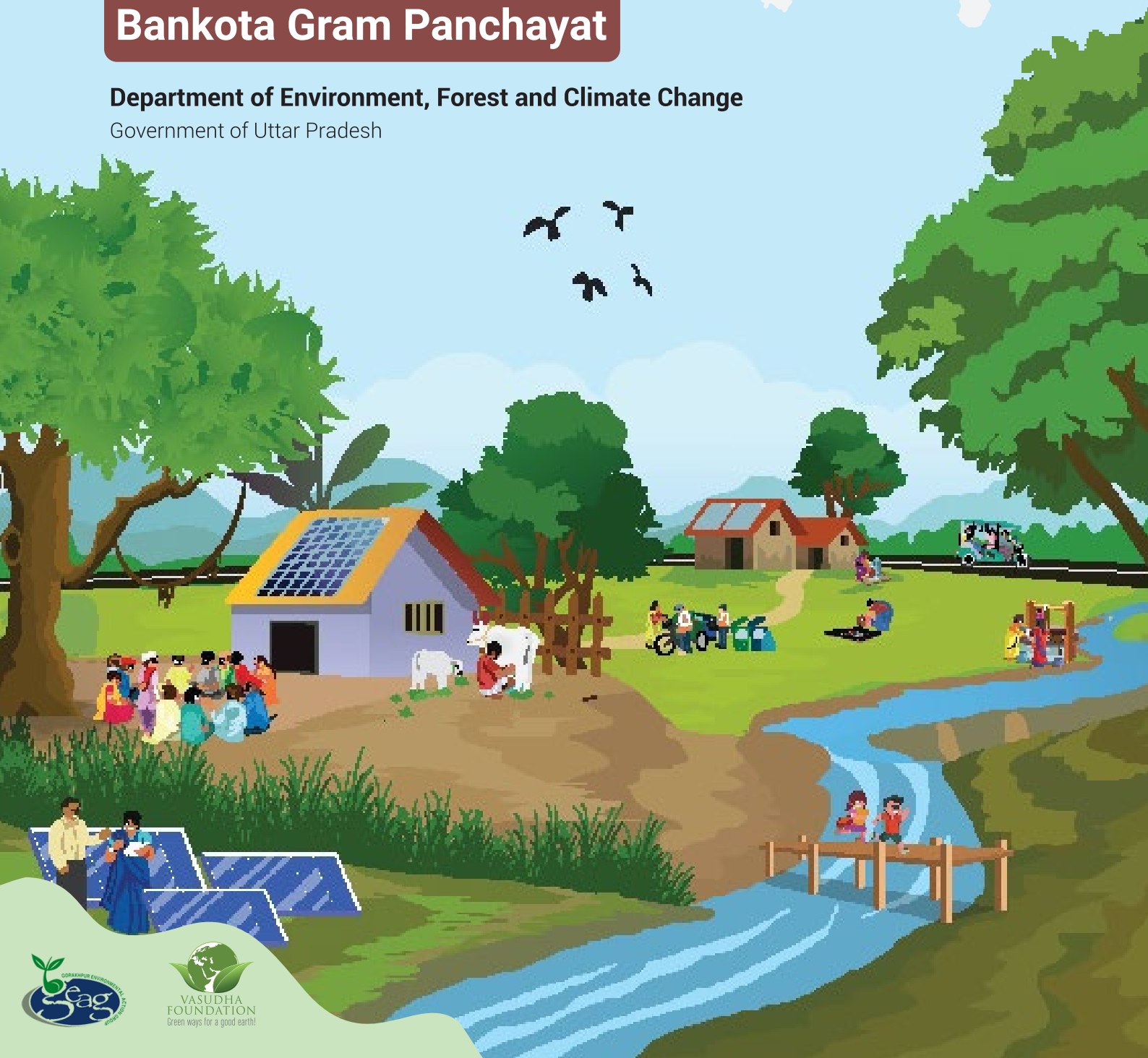
CLIMATE SMART GRAM PANCHAYAT ACTION PLAN

Bankota Gram Panchayat

Department of Environment, Forest and Climate Change
Government of Uttar Pradesh



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दिनाँक 28.10.2024

—: संदेश :—

ग्राम पंचायतों को जलवायु सजग ग्राम पंचायत बनाने हेतु समर्पित **ग्राम पंचायत–वनकोटा, विकास खण्ड वजीरगंज, जनपद बदायूँ** की क्लाइमेट स्मार्ट ग्राम पंचायत कार्ययोजना हेतु संदेश लिखते हुए मुझे बहुत सम्मान का अनुभव हो रहा है। जैसा कि हम जलवायु के परिर्वतन से उत्पन्न चुनौतियों को देख रहे हैं, हमारे लिए जमीनी स्तर पर तत्काल और व्यापक कार्यवाही किये जाने की आवश्यकता है। हमारी ग्राम पंचायते समुदाय के निकटतम शासन की एक आवश्यक इकाई होने के कारण जलवायु संबंधी चुनौतियों को कम करने और सतत् विकास को बढ़ावा देने में महत्वपूर्ण भूमिका निभा सकती है। हमारे समुदाय, हमारी पारिस्थितिकी तंत्र और हमारी अर्थ व्यवस्था आपस में जुड़े हैं और हमारे लिए ऐसी रणनीतियों को अपनाना आवश्यक है जो जलवायु से जुड़े जोखिमों को कम करती है।

ग्राम पंचायतों हेतु तैयार यह कार्ययोजना जलवायु पर कार्य करने के लिए प्रतिबद्ध है तथा जो पंचायतों को क्लाइमेट स्मार्ट पंचायत बनाने के लिए एक मार्ग दर्शक के रूप में कार्य करेगी।

मैं इस क्लाइमेट स्मार्ट कार्ययोजना निर्माण के लिए **पर्यावरण, वन एवं जलवायु परिवर्तन विभाग, उत्तर प्रदेश तकनीकी सहयोगी वसुधा फाउंडेशन नई दिल्ली, स्थानीय सहयोगी संस्था गोरखपुर एनवायरमेंट एक्शन ग्रुप (जी.ई.ए.जी.) गोरखपुर** को धन्यवाद करती हूँ और आशा करती हूँ कि निर्मित कार्ययोजना ग्राम पंचायत को क्लाइमेट स्मार्ट ग्राम पंचायत बनाने में सहयोगी होगी।

।। शुभकामनाओं सहित ।।

(निधि श्रीवास्तव)

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–: संदेश :–

जिस प्रकार हम और हमारी ग्राम पंचायतें जलवायु परिवर्तन से उत्पन्न चुनौतियों का सामना कर रही है, उसमें यह कार्ययोजना सहयोगी होगी। स्मार्ट और टिकाऊ प्रथाओं को बढ़ावा देकर हमारा लक्ष्य एक ऐसा मॉडल तैयार करना है जो न केवल हमारे पर्यावरण की रक्षा करे बल्कि समुदाय के समग्र कल्याण को भी बढ़ावा दे।

यह कार्ययोजना ग्राम पंचायतो में संवाद, सहयोग और क्रियान्वयन को प्रेरित करेगी। इसके साथ ही हम सब मिलकर जलवायु नीतियों को प्रभावी रूप से लागू कर सकते हैं तथा स्थायी लक्ष्यों को अपना सकते हैं और एक ऐसे भविष्य का निर्माण कर सकते हैं जो न केवल पर्यावरणीय रूप से मजबूत हो बल्कि सामाजिक रूप से भी न्याय संगत हो।

मैं क्लाइमेट स्मार्ट ग्राम पंचायत–वनकोटा विकास खण्ड वजीरगंज जनपद बदायूँ की कार्ययोजना विकसित करने में पर्यावरण, वन एवं जलवायु परिवर्तन विभाग, उत्तर प्रदेश के तकनीकी सहयोगी वसुधा फाउंडेशन नई दिल्ली स्थानीय सहयोगी संस्था गोरखपुर एनवायरमेंट एक्शन ग्रुप (जी.ई.ए.जी.) गोरखपुर उत्तर प्रदेश के समर्पित प्रयासों के लिए आभार व्यक्त करता हूँ।

एक बार पुनः क्लाइमेट कार्य योजना तैयार करने में अमूल्य योगदान के लिये मैं आप सभी को धन्यवाद देता हूँ तथा योजना के सफल कार्यान्वयन और समुदाय एवं पर्यावरण पर इसके सकारात्मक प्रभाव की आशा करता हूँ।

।। शुभकामनाओं सहित ।।

(केशव कुमार)

ग्राम पंचायत वनकोटा, वजीरगंज (बदायूँ)

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आभार

सर्वप्रथम आप सभी को प्रधान ग्राम पंचायत वनकोटा, जनपद–बदायूँ की ओर से सादर नमस्कार और अभिनन्दन मुझे आशा ही नहीं पूर्ण विश्वास है कि आप सभी स्वस्थ्य होंगे। मैं अपनी ग्राम पंचायत को क्लाइमेट स्मार्ट ग्राम पंचायत बनाने की ओर बढ़ाये गये प्रथम कदम प्रयास को आपसे साझा करते हुए रोमांचित हों।

जलवायु परिवर्तन से उत्पन्न चुनौतियां हर दिन अधिक स्पष्ट होती जा रही है। और हमारे समुदाय और भावी पीढ़ियों की भलाई के लिए उन पर कार्य करना हमारी सामूहिक जिम्मेदारी है इस विषय की गम्भीरता को समझते हुए सभी ग्राम वासियों की सर्व सहमति से हमने अपनी ग्राम पंचायत को क्लाइमेट स्मार्ट ग्राम पंचायत बनाने की प्रक्रिया को प्रारम्भ किया। सर्व प्रथम आवश्यक था ग्राम पंचायत में जलवायु परिवर्तन सम्बन्धी समस्याओं और मुद्दों की पहिचान करना। जिसके लिए सामुदायिक सहभागिता के साथ–साथ ग्राम सभा की बैठक एवं समूह केन्द्रित चर्चा के आयोजन के अतिरिक्त व्यक्तिगत चर्चा की गई। और आंकड़ों को एकत्र किया गया। आंकड़े एकत्र करने की प्रक्रिया को पंचायत में क्रियान्वित करने के लिए मैं स्थानीय सहयोगी संस्था गोरखपुर एनवायरमेन्ट एक्शन ग्रुप (जी0ई0ए0जी0) गोरखपुर का तथा आंकड़े एकत्र करने में हमारे ग्राम वासियों के समर्थन और सक्रिय भागीदारी के लिए हृदय से धन्यवाद। हम सभी साथ मिलकर हमारी ग्राम पंचायत में एक पर्यावरण अनुकूल वातावरण बनायेंगे। जो न केवल हमारे प्राकृतिक संसाधनों की रक्षा करेगा अपितु प्रत्येक ग्रामीण के जीवन की समस्त गुणवत्ता को भी बढ़ायेगा।

इसके साथ ही पर्यावरण वन एवं जलवायु परिवर्तन विभाग उ0प्र0 और तकनीकी सहयोगी पार्टनर वसुधा फाउन्डेशन नई दिल्ली का भी आभारी हूँ। जिन्होंने एकत्र किये गये आंकड़ों को कार्ययोजना का स्वरूप दिया तथा मार्गदर्शन एवं तकनीकी सहयोग प्रदान किया।

मैं सभी ग्रामवासियों से अपनी ग्राम पंचायत को क्लाइमेट स्मार्ट ग्राम पंचायत बनाने के लिए हाथ मिलाकर आगे बढ़ने का आग्रह करता हूँ आइये हम सभी एक सकारात्मक बदलाव की ओर आगे बढ़े और दूसरों के लिए उदाहरण स्थापित करें।

धन्यवाद!

प्रमिला यादव

(ग्राम प्रधान)

ग्राम पंचायत वनकोटा
जनपद–बदायूँ।

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1 Executive Summary

The Bankota Gram Panchayat in the District of Badaun lies in mid-western plains agro-climatic zone of Uttar Pradesh. The Climate Smart Gram Panchayat Action Plan of Bankota has been prepared with an aim to strengthen climate action at the Gram Panchayat (GP) level and make it climate smart/resilient by 2035. The action plan provides a GP-specific roadmap to aid in building resilience, enhancing adaptive capacity, reducing vulnerabilities, and associated risks as well as mitigating greenhouse gas emissions, while reaping other co-benefits like, additional revenue generation, overall socio-economic development, improved health, and natural resources management.

The action plan has been prepared by adopting the draft Standard Operating Procedure (SOP) for Development of Climate Smart Gram Panchayat Action Plans prepared by the Department of Environment, Forests and Climate Change, Government of Uttar Pradesh. The Climate Smart Gram Panchayat Action Plan (CSGPAP) for Bankota is formulated in a manner that it can be easily and effectively integrated with the existing Gram Panchayat Development Plan (GPDP) of Bankota GP.

The action plan[1] captures the key demographic and socio-economic aspects, key issues pertaining to the mid-western plains agro-climatic zone, climate variability, carbon footprint analysis of the GP, and current status of natural resources. The action plan also includes inputs from the community members of Bankota GP gathered through field surveys, focus group discussions and relevant government departments and agencies. This helped in building a baseline and identifying the key issues of Bankota.

The GP has one revenue village and two hamlets and 1,177 households with a total population[2] of 7,566 as reported during field surveys. The main economic activities include agriculture and animal husbandry. A baseline assessment

Approach

Development of primary survey tool

Survey & primary data collection: Survey was carried out with support from Gram Pradhan and community members. Participatory Rural Appraisal (PRA) activities included Focus Group Discussions (FGDs) with residents and community members, transect walks, development of social resource map, etc.

Data analysis & plan development:

- *Development of GP profile:* A detailed GP profile was developed based on the responses received on the Survey Questionnaire. This profile includes demographics, climate variability, key economic activities, natural resources, and amenities of Bankota.
- *Identification of key issues:* An exhaustive list of key climatic, developmental & environmental issues was identified through responses received in Survey Questionnaire & HRVCA.
- *Carbon footprint estimation:* Carbon footprint was estimated for key activities* in Bankota.
- *Proposed recommendations:* Recommendations were developed for Bankota based on the environmental and climatic issues identified. These recommendations also take into account the prevailing agro-climatic characteristics of mid-western plains. Additionally, sector-wise adaptation needs & mitigation potential of Bankota have been determined.

A participatory approach was followed throughout the development of the action plan. This will result in enhancing the capacity of the community for climate leadership while fostering a sense of ownership and accountability at the local level.

*Activities include- Electricity Consumption, residential cooking, emissions arising from diesel pump usage, transport, crop residue burning, livestock emissions, fertiliser emissions, rice cultivation and domestic wastewater.

1 The Gram Panchayat Action Plan includes aspects of climate change adaptation, mitigation and Hazard Risk Vulnerability and Capacity Assessment (HRVCA)

2 Census 2011 data notes: Total Population- 6,086

shows that Bankota GP has a carbon footprint of ~3,639 tCO_2e.[3]

A few priority areas for immediate action identified in Bankota GP are:

- Implementing measures such as improving green cover, revitalising current water sources and enhance groundwater levels with participatory water management.
- Promoting sustainable agriculture practices aimed at enhancing farmers' income through an adoption of climate resilient crops, organic fertilisers, and agro-forestry practices.
- Harnessing Renewable Energy (RE) and energy efficient solutions such as solar-powered pumps, energy efficient pumps, and solar rooftop installation.
- Transitioning from use of fossil fuels/cow dung/fuelwood to sustainable alternatives for domestic energy needs and transport.

Taking into account the vulnerable sectors, issues emerging from focus group discussions and field surveys, and ongoing activities in the GP, the recommendations have been proposed. The recommendations cover the thematic areas of water, agriculture, clean energy, enhancing green spaces, sustainable waste management, sustainable mobility, and enhanced livelihoods and green entrepreneurship.

The activities under these recommendations have been divided into 3 phases- Phase I (2024-27), Phase II (2027-30) & Phase III (2030-35). The phase-wise targets can be further distributed into annual targets as per the discretion of the Gram Panchayats. Moreover, the financing avenues for the suggested activities have been indicated along with phase-wise targets, potential costs, supporting Central and State schemes.

The Climate Smart Gram Panchayat Action Plan (CSGPAP) for Bankota is formulated in a manner that it can be easily and effectively integrated with the existing Gram Panchayat Development Plan (GPDP) of Bankota GP.

CSAP will supplement and complement the Bankota GPDP by:

- Broad-basing existing development initiatives and activities with a climate perspective.
- Dovetailing ongoing National and State Programmes on climate change with the proposed development activities in the GPDP.

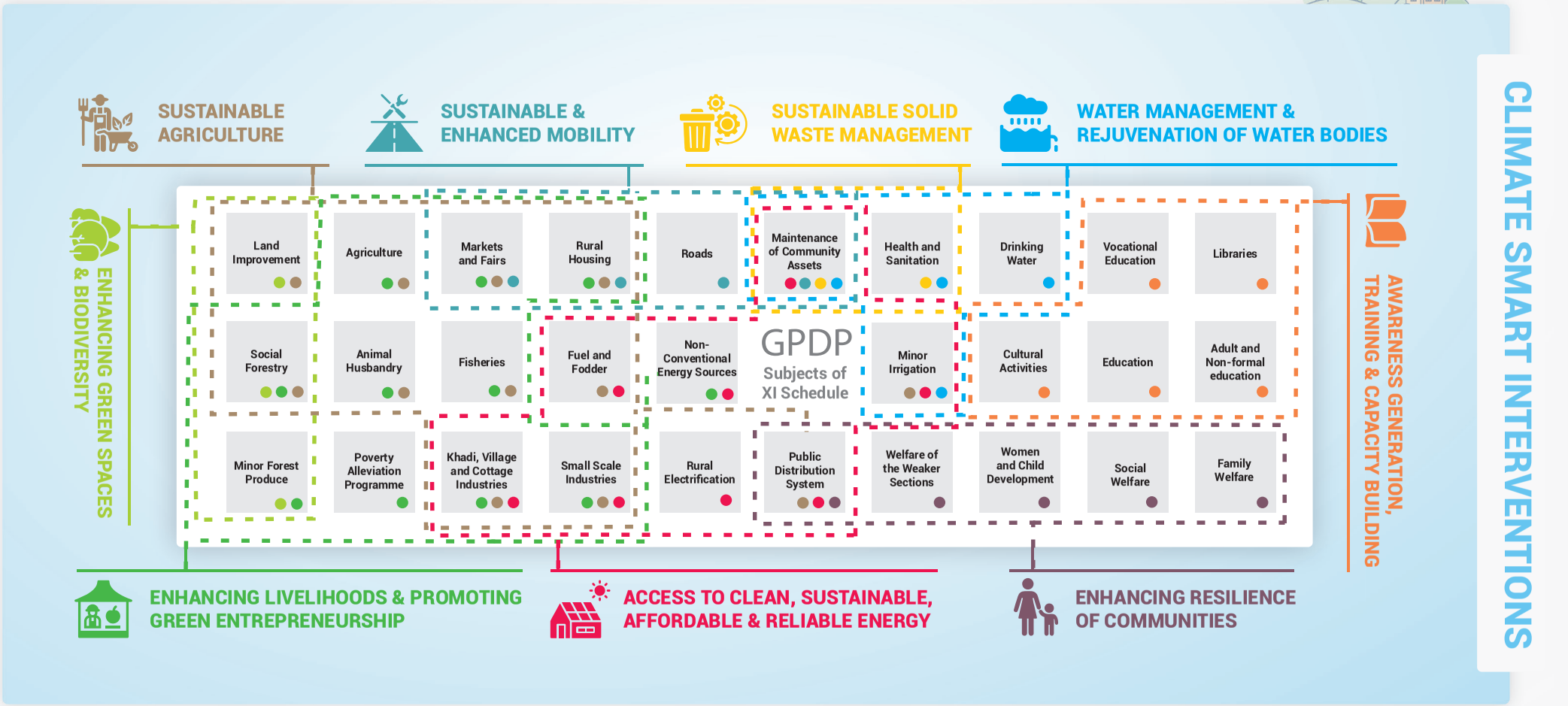
The interventions and annual targets under this Action Plan can be implemented in convergence with the planned activities of the Bankota GPDP. The existing budgetary allocations earmarked for certain programs under the GPDP can be used for climate adaptation and mitigation activities proposed in this plan. For example, water body rejuvenation carried out through schemes like Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) will have climate change adaptation benefits as well. Similarly, funds earmarked under the 'non-conventional energy' subject of the Eleventh Schedule (basis of GPDP) can be utilised to scale up renewable energy deployment.

The total emissions avoided/mitigated through implementation of this plan is estimated to be 4,732 tonnes carbon dioxide equivalent (tCO_2e) per annum and sequestration potential goes up to 2,13,000 tCO_2 over the next 20-25 years. The total cost estimated for the implementation of this plan across the three phases is approximately ₹48.50 crores (for 11 years), comprising of community investment, public finance, private finance and potential CSR funding. From this, 30-35 percent (approximately ₹17 crores) of the required funding can be availed from Central and State Schemes/Missions/Programmes, while the remaining cost can be secured from CSR and private funds. The Government of Uttar Pradesh has adopted an innovative approach of 'Panchayat-Private-Partnerships' to potentially engage CSR and mobilise private finance.

3 Includes scope 2 emissions due to electricity consumption within the GP (data obtained from UPPCL and grid emission factor from CEA)

Climate Smart and Sustainable Gram Panchayats by 2035

Mainstreaming Climate Action with Development



2 Gram Panchayat Profile

Bankota

Bankota Gram Panchayat at a Glance†

Location	Wazirganj Block, Badaun District
Total Area[4]	818 ha
Composition	1 Revenue Village 2 Hamlets
Total Population[5]	7,566
No. of Males	4,158
No. of Females	3,408
Total Households[6]	1,177
Panchayat Infrastructure	8 (Panchayat Bhawan, 3 Primary Schools, Junior High School, High School, Health Sub-centre, Anganwadi Centre)
Primary Economic Activity	Agriculture and animal husbandry

Land-Use[7]

- Agriculture Land – 761 ha
- Common Land – less than 0.5 ha
- Remaining Land – 57 ha (Settlements and water bodies)

Water Resources

4 Ponds

Agro-climatic Zone[8]

- Mid-western plain
- Climatic conditions: Sub-tropical with moderate rainfall
- Minimum Temperature: 4.5 °C
- Maximum Temperature: 45.4 °C
- Average Annual Rainfall: 1,032 mm
- Soil: Loamy soil suitable for crops like pulses and oilseeds

Composite Vulnerability[9] **Index (CVI) of District**

Very High

Sectoral Vulnerability of District

- Disaster Management Vulnerability: Very High
- Forest Vulnerability: Very High
- Water Vulnerability: Very High
- Energy Vulnerability: Very High
- Rural Development Vulnerability: Very High
- Health Vulnerability: Very High
- Agriculture Vulnerability: Moderate

4 Data from BHUVAN indicates that the area of GP is 1,470 ha.

† Data from Field Survey conducted for preparation of the Plan (February, 2023)

5 Census 2011 data notes: Total Population- 6,086; Male- 3,328; Female- 2,758

6 1,073 pucca houses and 104 (mud, thatched, tin) kaccha houses

7 Based on several rounds of discussion with Gram Pradhan

8 UP Department of Agriculture

9 Uttar Pradesh SAPCC 2.0

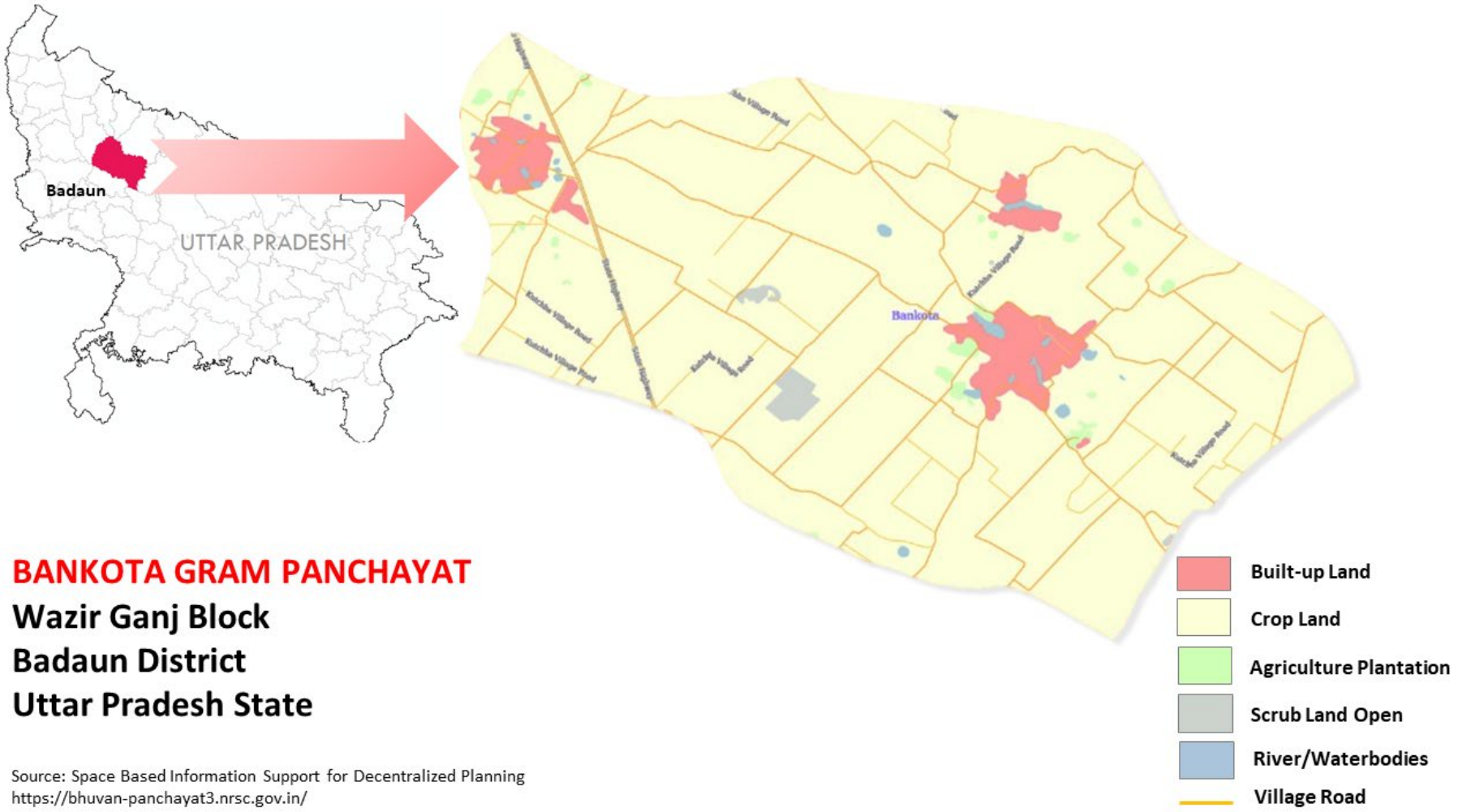


Figure 1: Land-use map of Bankota Gram Panchayat, Badaun District

Climate Variability Profile

The climate variability data (temperature and rainfall) received from the India Meteorological Department (IMD)[10] - indicates that there has been no significant change in annual average maximum and minimum temperature in the region (Badaun district) between 1990 and 2020 (see Figure 2). During the same time period, annual rainfall[11] also does not show any significant change (see Figure 3). However, the IMD data does not capture granular temperature variability at the Panchayat level and further, there are days for which data was not available.

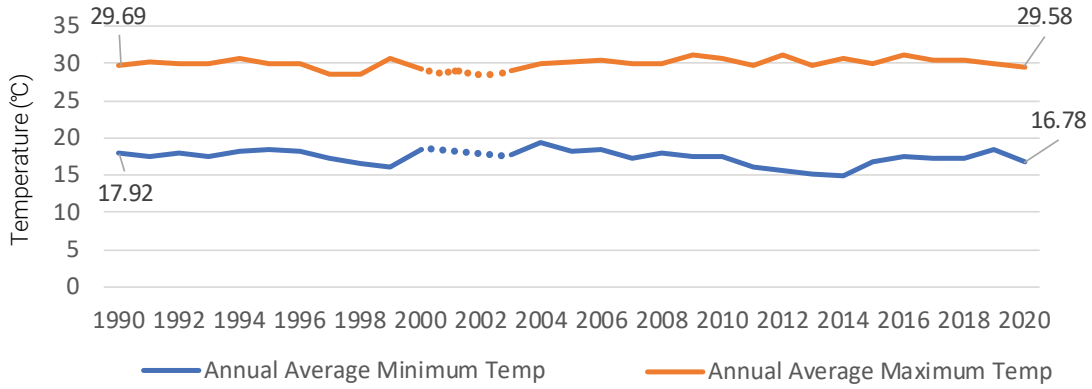


Figure 2: Annual average maximum and minimum temperature in Bankota, 1990-2020

A recent report by World Meteorological Organisation, indicates that Asia as a whole has warmed faster than the global land and ocean average between 1991 to 2023 and there has been an evident surge in warm days across large parts of South Asia in the decade of 2010-2020[12]. Similar findings are also confirmed by IPCC[13] and MoES, Government of India[14].

Further, the perception of communities on weather changes informed from the field survey and focus group discussion indicates that across the decade of 2010-2020, the GP has witnessed an increase in the number of summer days by an average of 30 days and decrease in the number of winter days by approximately 30 days. They also indicated that the number of rainy days has also decreased by roughly 28 days[15].

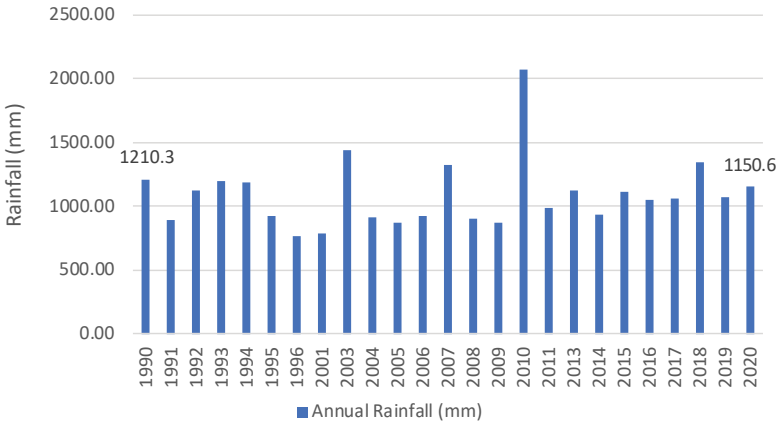


Figure 3: Annual rainfall (mm) in Bankota, 1990-2020

The climate variability analysis undertaken for the GP accounted for both IMD data as well as community perception to bring out a balanced view of the prevailing climate variability in the GP.

10 Daily temperature (maximum and minimum) data and daily rainfall data taken from Moradabad station (nearest IMD station in the same agro-climatic zone)

11 Daily rainfall data for 1997,1998, 1999, 2000, and 2012 not available

12 State of the Climate in Asia in 2023 https://library.wmo.int/records/item/68890-state-of-the-climate-in-asia-2023

13 AR6 Synthesis Report: Climate Change 2023(ipcc.ch) https://www.ipcc.ch/report/ar6/syr/

14 Assessment of Climate Change over the Indian Region: A Report of Ministry of Earth Sciences (MoES) https://link.springer.com/book/10.1007/978-981-15-4327-2

15 Data from the field survey conducted for preparation of the plan

Key Economic Activities

Agriculture and animal husbandry serve as the primary sources of income, engaging nearly 85 percent of households (see Figure 4). This is followed by engagement in non-farm wage labour (10 percent). Some other households are involved in the service sector, local businesses, etc.

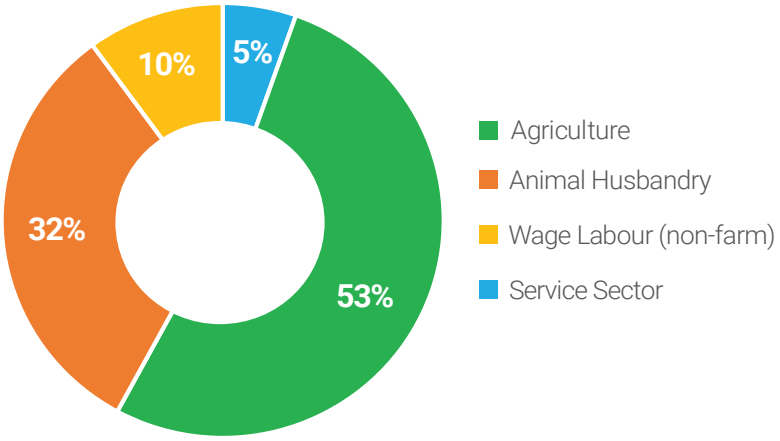


Figure 4: Household level primary source of income in Bankota

Household level income estimates from the primary survey revealed that a significant number of the households (49 percent) earn ₹50,000-₹1,00,000 per annum, while a small number of the households (nearly 2 percent) earn more than ₹5,00,000. At the time of the survey, 11 percent of the households were below poverty line (BPL) in the GP.

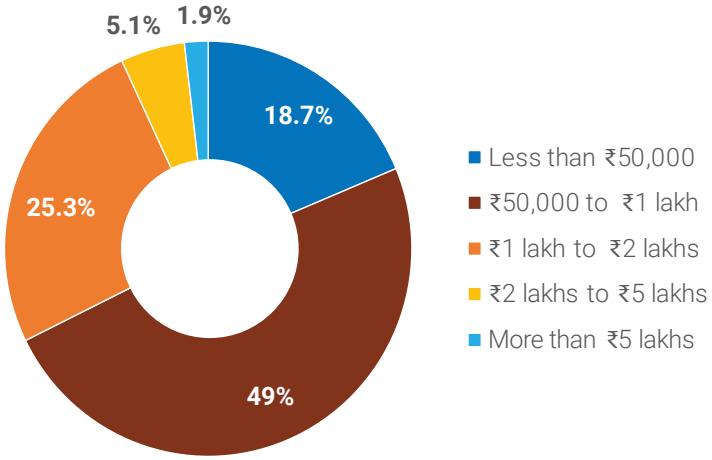


Figure 5: Household level income estimates in Bankota

The ration card data reveals that nearly 84 percent of the households benefit from the public distribution schemes and hold ration cards. Of these, around 135 households hold *Antyodaya* cards[16] (Figure 6).

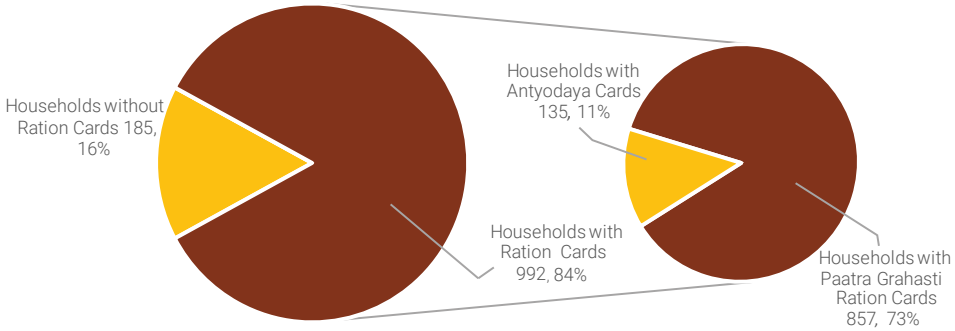


Figure 6: Households with ration cards in Bankota

16 National Food Security Portal https://nfsa.up.gov.in/Food/citizen/ReportNikayWise.aspx?val=NCMxNDkjUiMwMDE5OTIjMDU5NTYx

Women's Employment

In Bankota GP, there are 730 working women as reported in the field survey. These women are mostly engaged in animal husbandry and agriculture. Other sources of employment include non-farm wage labourers. A small number of women are involved in the service sector such as teaching, banking, and in government jobs (See Figure 7). There are 268 women-headed households that make up nearly 23 percent of the households in the GP.[17] The field survey also indicates that there are 9 Self-Help Groups which are mostly involved in animal husbandry and agriculture activities

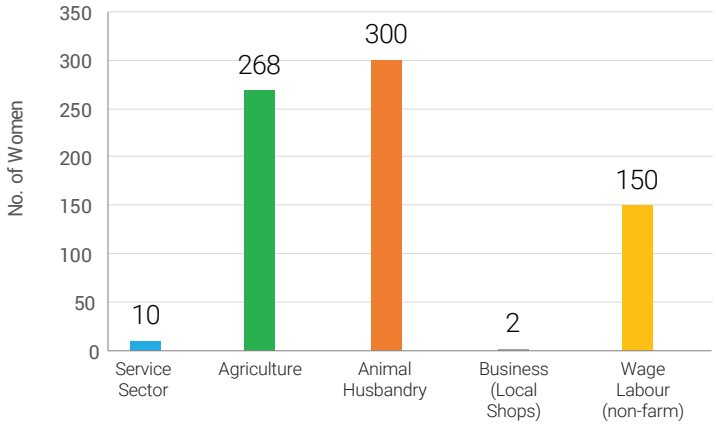


Figure 7: Number of women engaged in various economic activities in Bankota

Agriculture

Nearly 52% of the households in Bankota are dependent on agriculture for their livelihoods.[18]

The net sown area in Bankota is approximately 761 ha while the gross cropped area is 1,321 ha (see Figure 8). The major *kharif* crops grown in the area are paddy, sugarcane, maize and *bajra*. The major *rabi* crops grown in the area are wheat, mustard, and potato. The main sources of irrigation are rainwater, tubewells, and individual borings, and pumps. There are 190 grid connected electric pumps, 30 diesel pumps, and 1 solar-powered pump used in the GP. Additionally, around 32 percent of the population of the GP is engaged in animal husbandry. The total livestock population is 800 (210 cows, 500 buffaloes, and 90 goats) in Bankota.

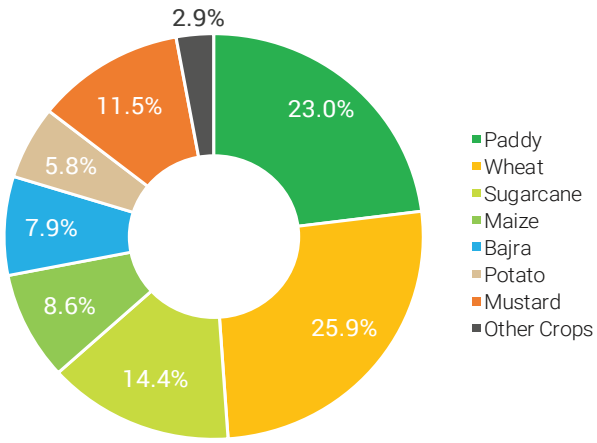


Figure 8: Crop-wise distribution of gross cropped area in Bankota

Natural Resources

Bankota has 4 ponds, as per the field survey. Plantation activities are carried out in Bankota usually in the month of July. Currently, these plantations cover an area of 5 acres. The plantations have been implemented through the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and mass movement program for tree plantation. *Peepal*, banyan, *neem*, mango, and rosewood trees are mostly grown in plantations with an average survival rate of 40 percent.[19]

17 Women-headed households are those households where women are sole/primary earners.

18 It may be noted that a number of households may be engaged in agriculture in more than one way. For example, small land owners could also be working as wage-labourers on large farms. Additionally, large-land owning farmers could also be engaged as contract farmers

19 As per inputs received from the field survey/community

Amenities in Bankota

Electricity & LPG

- Electricity access: ~65% households
- LPG coverage: ~32% households

Water

- Main source of water for household use and GP level supply – groundwater
- 100% households have piped water supply[20]

Waste

- Open Defecation Free (ODF) status achieved
- Household toilet coverage: ~32%

Mobility and Market Access

- Badaun-Chandausi Road – 0 km
- Ganga Expressway (under construction) – 0.1 km
- Bank – 5 km
- Agriculture market – 6 km
- Post office – 5 km
- Ration shop within the GP

Educational Institutions

- 3 Government Primary Schools
- Junior High School
- High School

Health Institutions

- Health Sub-centre
- Anganwadi Centre

20 Jal Jeevan Mission Dashboard indicates 100% coverage of piped water supply in GP. https://ejalshakti.gov.in/

3 Carbon Footprint

While the Carbon Footprint (in other words, Greenhouse Gas (GHG) emissions) from rural areas is not significant, this exercise has been carried out to develop a complete baseline of the gram panchayat. It may be noted that the objective of this plan is not to develop a carbon neutral GP, but a Climate Smart GP. However, the recommendations will have emission reduction benefits which perhaps will help make the GP carbon neutral or even carbon negative. Keeping this in view, this exercise therefore does not include GHG projections.

Further, the carbon footprint also aids in providing recommendations to ensure sustainable development that aligns with the principles of the LiFE Mission. Overall, in 2022, Bankota GP emitted 3,639 tonnes of carbon dioxide equivalent (tCO_2e) from a wide range of activities (see Figure 9).

Activities in the agriculture, energy and waste sectors contributed to the carbon footprint of Bankota. Agriculture sector emissions include those due to rice cultivation, application of fertiliser on agricultural fields, emission from livestock and manure management, and crop residue burning. Energy sector emissions are due to electricity consumption[21] , combustions of fuelwood and LPG for cooking, use of diesel pumps for irrigation, use of generators for power backup and use of fossil fuel in various means of transport. Emissions due to domestic wastewater are included in the waste sector.

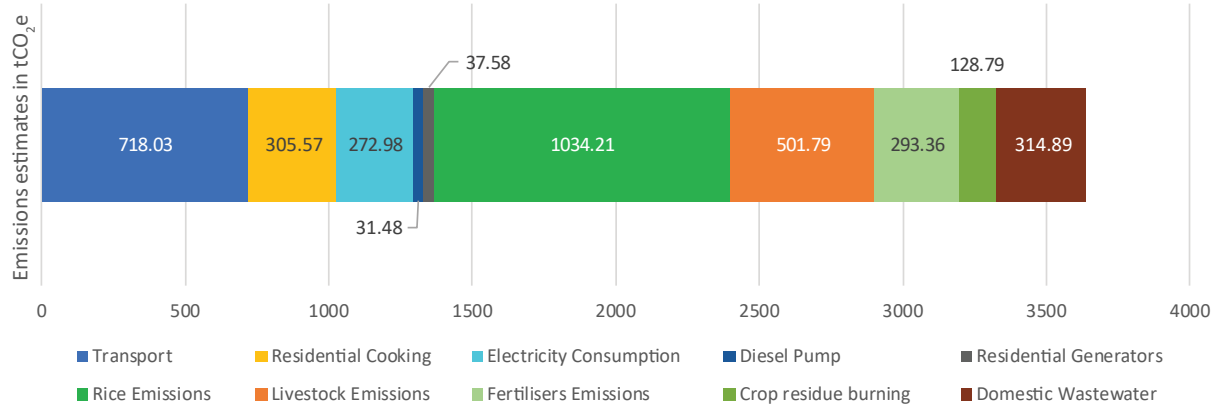


Figure 9: Carbon footprint of various activities in Bankota in 2022

The agriculture sector accounted for nearly 54 percent of the total emissions, with emissions from rice cultivation (~1,034 tCO_2e) and livestock (~502 tCO_2e) being the leading causes of GHG emissions. The energy sector accounted for nearly 37 percent of the total emissions. Within the sector, transport was the key emitter (718 tCO_2e), this was followed by residential cooking (~306 tCO_2e), electricity consumption (~273 tCO_2e), residential generators (~38 tCO_2e), and diesel pump (31 tCO_2e). The waste sector accounted for nearly 9 percent of the total emissions.

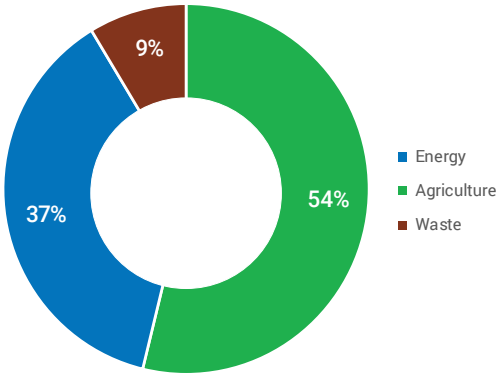


Figure 10: Share of sectors in carbon footprint of Bankota in 2022

21 Emissions due to electricity consumption are categorized as Scope 2 emissions, as the fuel (coal) combustion for electricity generation takes place outside the GP boundary

4 Broad Issues Identified

The broad issues identified are based on the data collected and analysis conducted to establish the GP baseline, the inherent characteristics of the agro-climatic zone in which the GP is located as well as the inputs received from the community members during the field surveys, and focus group discussions. Wherever possible, this information was corroborated with available government data sources. However, certain issues are completely based on information from the community because for these GP level data was not available for corroboration. The issues identified in the GP are summarized below. Further, the detailed issues are listed in the respective themes of the recommendations section.

Broad Issues:

- Changes in seasonal durations and erratic rainfall affecting sowing time, harvesting time and irrigation needs of crops among other impacts in the GP
- Frequent occurrence of droughts in the months of July to September
- There is waterlogging issues in the GP due to the low-lying nature of the area
- Unsustainable agricultural and animal husbandry practices
- Limited sanitation and waste management practices combined with low household toilet coverage
- Poor maintenance of natural resources including water bodies
- Dependence on fossil fuels and traditional fuels for cooking, agricultural and transport needs
- Lack of awareness about climate change impacts
- Lack of awareness about various schemes and programmes of the Central and State governments on clean energy and climate change

5 Proposed Recommendations

Each thematic issue consists of several interventions, with focus on both mitigation and adaptation that address the key issues identified in the previous section. The interventions are described with phased targets and cost estimates[22] (to the extent possible). The targets are spread across three phases: Phase-I (2024-25 to 2026-27); Phase-II (2027-28 to 2029-30); and Phase-III (2030-31 to 2034-35).

Targets under each phase can be further distributed into annual targets (year-on-year targets) ensuring effective and monitored implementation. The template for developing year-on-year targets can be referred from the document 'Standard Operating Procedure (SOP) for Development of Climate Smart Gram Panchayat Action Plan'. The SOP is a step-by-step approach to be used by Gram Padhans, community members or any other stakeholder to develop Climate Smart Action Plans for their respective Gram Panchayats.

The financing avenues identified include Central or State schemes, various tied and untied funds of the Gram Panchayat or private finance through CSR interventions have been identified. The detailed recommendations are in the following section.

Recommendations suggested in the action plan span across the following themes:

1. **Management and Rejuvenation of Water Bodies**
2. **Enhancing Green Spaces and Biodiversity**
3. **Sustainable Agriculture**
4. **Sustainable Solid Waste Management**
5. **Access to Clean, Sustainable, Affordable and Reliable Energy**
6. **Sustainable and Enhanced Mobility**
7. **Enhancing Livelihoods and Green Entrepreneurship**

Further, while not forming a part of the recommendations, a list of possible initiatives has also been listed out for consideration by the Panchayats. These initiatives have been implemented successfully in some parts of India and could be replicated here as well. However, since these initiatives are not covered by any ongoing schemes/programmes of the Government of Uttar Pradesh, the funding for these initiatives at this point in time will have to be borne by the communities or by exploring CSR and private sources. Hence, they are not included in the main recommendations.

22 Costs have been estimated based on different methods like:
inputs from key members of the Gram Panchayat,
OR cost estimates as per relevant schemes and policies,
OR approximate per unit costs of inputs required
OR schedules of rates of various departments.

1 Management and Rejuvenation of Water Bodies

Context & Issues[23]

- Bankota GP primarily relied on groundwater as primary source of water for both agricultural and domestic need in the GP. There have been frequent incidences of droughts in the month of July to September in the years 2018, 2021 and 2022.
- There are 4 ponds in Bankota, most of which are poorly maintained and filled with silt, debris, and waste and therefore they need to be cleaned and rejuvenated.
- Waterlogging is one of the key concerns in Bankota, particularly during the months of July and August. It affects connectivity in GP, leading to accumulation of waste in low-lying areas, which causes health problems and pollutes drinking water[24]. It is exacerbated by inefficient and poorly maintained drainage infrastructure.
- Dependence on groundwater and frequent incidence of droughts in the past three years highlight the urgent need for watershed management to conserve water and replenish groundwater resources.
- Significant portion of the population in GP uses handpumps for domestic water needs[25] and the groundwater supply of drinking water in GP area is contaminated, resulting in water with yellowish hue[26] . This has led to rise in number of water borne disease incidences. Thus, there is a need of safe drinking water supply in the GP.

The following recommendations are proposed to reduce vulnerability, build resilience and improve water security in Bankota.

23 As understood from the community during field surveys and FGDs and corroborated by relevant resources.

24 Based on inputs received during field survey

25 Based on inputs received during field survey.

26 Inputs received from GP Pradhan. As per the NATIONAL AQUIFER MAPPING AND MANAGEMENT PLAN (NAQUIM), Badaun District, CWGB Report, 2023: In Wazirganj block there is a higher concentration of iron (Fe) and manganese (Mn) in ground water than permissible limit and decreasing ground water level https://cgwb.gov.in/cgwbpnm/search?type=2&cat_id=&state_id=9&district_id=&year_of_issue=&name_of_author=&keywords=&search=search

Rejuvenation and Conservation of Water Bodies

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. Cleaning, desilting and fencing of water bodies 2. Reboring and repairing of hand pumps 3. Tree plantation around water bodies with tree guards 4. Capacity building of the existing Village Water and Sanitation Committee (VWSC)[27] » To enhance awareness among various key community groups to improve water conservation » Prepare/update Village Water Security Plan to ensure optimum utilisation of available water to meet the needs of various users	1. Additional tree plantation around water bodies 2. Regular maintenance of water bodies 3. Capacity building of the community and other stakeholder 4. Update Village Water Security Plan to ensure optimum utilisation of available water	1. Regular maintenance of water bodies 2. Update Village Water Security Plan to ensure optimum utilisation of available water
Target	1. 4 ponds cleaned & desilted[28] 2. Reboring of 72 hand pumps 3. Repairing of 100 hand pumps 4. Plantation of 1,000 trees with tree guards (around water bodies)	1. Maintenance of 4 ponds 2. Additional 1,000 trees planted around water bodies with tree guards	Maintenance of 4 ponds

27 VWSC Handbook, https://phed.cg.gov.in/sites/default/files/gphandbook-0.pdf

28 Refer to HRVCA for specific location details

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Estimated Cost	1. Cleaning of ponds: ₹28,00,000 2. Reboring of hand pumps: ₹2,84,728 3. Repairing of hand pumps: ₹2,10,000 4. Plantation around water bodies: covered in section "Enhancing Green Spaces and Biodiversity": ₹12,70,000 *Total Cost: ₹32,94,728*	1. Maintenance of ponds: ₹15,00,000 2. Plantation around water bodies: covered in section 'Enhancing Green Spaces and Biodiversity': ₹12,70,000 *Total Cost: ₹15,00,000*	Maintenance of ponds: ₹15,00,000 *Total Cost: ₹15,00,000*

Enhancing Drainage Infrastructure

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	Cleaning, desilting, and repair of existing drains to prevent waterlogging.	Regular maintenance of drains	Regular maintenance of drains
Target	Cleaning and desilting of existing drains	Regular maintenance of existing drains in the GP	Regular maintenance of existing drains in the GP
Estimated Cost	Cleaning and desilting of existing drains: As per requirement	As per requirement	As per requirement

Rainwater Harvesting (RwH) Practices

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. RwH structures installation in Panchayati Raj Institution (PRI) buildings 2. Recharge pits for recharging groundwater 3. Incorporating RwH system in all new buildings	1. Installation of RwH structures in residential buildings above a plot size of 1500 sq. ft. 2. Digging of more recharge pits/trenches in the identified catchment areas 3. Incorporating RwH system in all new buildings	1. Installation of RwH structures in residential buildings 1000 sq. ft. 2. Incorporating RwH system in all new buildings
Target	1. RwH in all PRI buildings Installation of recharge pit of storage capacity 10 m^3 2. 40 recharge pits dug[29]	1. 50 pucca households to install RwH structures with an average storage capacity of 10 m^3. Larger houses in the GP to be targeted first 2. Digging more recharge pits as per requirements	100 pucca households to install RwH structures with an average storage capacity of 10 m^3
Estimated Cost	1. RwH: ₹ 2,80,000 for 8 units 2. Recharge pits: ₹ 14,00,000 for 40 units *Total Cost: ₹16,80,000*	1. RwH: ₹17,50,000 for 50 units 2. Recharge pits: cost as per requirement *Total Cost: ₹17,50,000*	RwH: ₹35,00,000 for 100 units *Total Cost: ₹35,00,000*

29 Refer HRVCA for specific location details

Existing Schemes and Programmes

- Development of rainwater harvesting systems can be carried out through provisions and resources made available through Jal Shakti Abhiyan: Catch the Rain campaign.
- UP State Annual Budget under Irrigation Department can be channelled for GP level water body conservation and restoration activities.
- Annual budgets under MGNREGA and Watershed Development Component under Pradhan Mantri Krishi Sinchai Yojana (PMKSY) can be leveraged for watershed development activities.

Other Sources of Finance

- Corporate/CSR can be encouraged to 'adopt a water body' to contribute to the maintenance and upkeep of water bodies and wells. CSR support can be utilised for installation of gravity based/solar powered RO water filtration system in GP.

Key Departments

- Department of Rural Development
- Irrigation and Water Resources Department, Ministry of Jal Shakti
- Uttar Pradesh Department of Land Resources

2 Enhancing Green Spaces and Biodiversity

Context & Issues

- There is a 5 acre community plantation in Bankota which was carried out under MGNREGA and tree plantation drive. The major species include peepal, banyan, pakriya neem, mango, and rosewood trees are mostly grown in plantations.
- Further, plantation activities are carried out in the month of July with a reported average survival rate of 40%[30].

Bankota gram panchayat has potential to enhance lung spaces, as it will not only improve thermal comfort and provide shade but also improve soil health and water levels in the long term, in addition to enhancing carbon sink in the GP.

Improving Green Cover

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. Annual community-based plantation activities[31] through various initiatives: » **Green Stewardship programme**[32] for students (5 students selected) » Creation of a **Food Forest** by planting indigenous fruit trees	1. Existing plantations maintained 2. Plantation activities continued and enhanced with creation of *Bal Van*[33] 3. Farmer encouraged to adopt agroforestry 4. *Arogya Van* is established	1. Plantation activities to continue and maintained- *Bal Van*, Food Forest and other plantations 2. ~ 168 ha (100% of land suitable for agroforestry) is covered under agro-forestry initiative 3. *Arogya Van* maintained and units for production of natural medicines and supplements established

30 As reported during the field surveys

31 Trees species listed in Annexure VI

32 School students will be engaged in planting trees and Student Leaders will be picked from each class who will motivate their fellows as well as the GP community to plant trees.

33 New parents will be gifted with saplings of indigenous evergreen trees as a celebration of birth of their children and be encouraged to nurture the plants through their children's life

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	2. Development of *Arogya Van* - procurement and preparation of land, species selection and plantation of various medicinal herbs[34], shrubs and trees		
Target	1. 1,000 saplings of common and endangered trees to be planted and ensure at least 65% survival rate (using tree guards). Sequestration potential 5,600 tCO_2 to 10,000 tCO_2 in 15-20 years 2. Around 0.1 ha of land allocated/demarcated to establish *Arogya Van*	1. Another 1,500 to 2,000 saplings planted, along roads, pathways and around water bodies in the GP Sequestration potential 9,800 tCO_2 to 17,500 tCO_2 in 15-20 years 2. Agro-forestry adopted in 67 ha land (40% of land suitable for agroforestry[35]), 6,700 trees planted Sequestration potential of teak plantation= 37,520 tCO_2 to 67,000 tCO_2 in 20 years 3. *Arogya Van* established and maintained 4. Capacity building of FPOs, Women's groups, youth groups to manufacture and market natural medicines and supplements	1. Another 1,500 to 2,000 saplings planted Sequestration potential 9,800 tCO_2 to 17,500 tCO_2 in 15-20 years 2. Agro-forestry adopted in the remaining land suitable for agroforestry i.e. ~101 ha, and 10,100 trees planted Sequestration potential= 56,560 tCO_2 to 1,01,000 tCO_2 in 20 years for teak plantation 3. *Arogya Van* maintained and production of natural medicines and supplements continues
Estimated Cost	Plantation activities: ₹12,70,000 *Total Cost: ₹12.70 lakhs*	1. Plantation activities: ₹19,05,000 to ₹25,40,000 2. Agro-forestry activities: ₹26,80,000 3. Maintenance of plantations: ₹1,80,000 *Total Cost: ₹47.65 lakhs to ₹54 lakhs*	1. Plantation activities: ₹19,05,000 to ₹25,40,000 2. Agro-forestry activities: ₹40,40,000 3. Maintenance of plantations: ₹1,80,000 *Total Cost: ₹61.25 lakhs to ₹67.60 lakhs*

34 Suitable species are listed in Annexure VI

35 The agricultural land under wheat and potato (~168 ha) is considered suitable for agroforestry.

Establishing a Nursery

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. Establish a nursery for the gram panchayat by employing SHGs 2. Train SHGs to maintain and run the nursery bodies	Maintenance of nursery	Maintenance of nursery
Target	Establish one nursery on gram panchayat land to help improve green cover and also provide additional income to women	Maintenance of 1 nursery	Maintenance of 1 nursery
Estimated Cost	Cost of construction and operation of nursery: ₹3,00,000 *Total cost: ₹3,00,000*	As per requirement	As per requirement

People's Biodiversity Register

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. Updating People's Biodiversity Register 2. Build awareness	1. Updating of People's Biodiversity Register continued 2. Strengthen awareness	1. Updating of People's Biodiversity Register continued 2. Strengthen awareness

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Target	1. Formation and capacity enhancement of the Biodiversity Management Committee (BMC) 2. Participatory update of the People's Biodiversity Register	Participatory update of the People's Biodiversity Register continues	Participatory update of the People's Biodiversity Register continues
Estimated Cost	Formation of BMC and training cost[36]: ₹25,000		

Existing Schemes and Programmes

- Plantation activities can be aligned and carried out through provisions under 'Trees Outside Forests in India' initiative by MoEFCC, Green India Mission, Jal Jeevan Mission and UP State Plantation Targets.
- Annual budgeting under UP State Compensatory Afforestation Fund Management and Planning Authority Fund (State CAMPA fund) can be directed for:
  - » Afforestation, enrichment of biodiversity, improvement of wildlife habitat, and soil and water conservation activities in the GP.
- Plantation activities can be aligned with MGNREGS and the local community can also be engaged in providing '*shramdaan*'.
- The Sub-Mission on Agroforestry under the National Mission on Sustainable Agriculture can be leveraged to:
  - » Avail ₹28,000 per ha of agroforestry plantation.
  - » Assistance for plantations can be availed in year-wise proportion of 40:20:20:20 for four years.
- Skill development and training programme of the Central Institute of Medicinal and Aromatic Plants, Lucknow can be helpful in setting up Arogya Van in the GP.
- Programmes by the National Biodiversity Authority and Uttar Pradesh State Biodiversity Board can be tapped into for training and capacity building of BMCs.

36 Guidelines for Operationalising Biodiversity Management Committees (BMCs), 2013, National Biodiversity Authority. http://nbaindia.org/uploaded/pdf/Guidelines%20for%20BMC.pdf

Other Sources of Finance

- Resources allocated to Gram Panchayat under 15th Finance Commission and Own Source Revenue (OSR).
- CSR funds for purchase of saplings, organising plantation drive, erection of tree guards to ensure protection of saplings can be availed. CSR support can be utilised for creation of Aarogya Van and establishing production units for herbal products as described in the recommendation on 'Enhancing Livelihoods and Promoting Green Entrepreneurship'.

Key Departments

- Department of Environment, Forest and Climate Change
- State Biodiversity Board
- Panchayati Raj Department
- Department of Rural Development
- Central Institute of Medicinal and Aromatic Plants, Lucknow

3 Sustainable Agriculture

Context & Issues

- The total area under agriculture in Bankota is 761 ha and the gross cropped area is nearly 1,321 ha.
- 52.5% of the households in the GP depend on agriculture practices and 32% households depend on animal husbandry practices as a source of income.
- The major crops grown are wheat (~342 ha), paddy (~304 ha), sugarcane (~190 ha), mustard (~152 ha), maize (~114 ha), bajra (~104 ha), potato (~77 ha), and other crops (~38 ha), across kharif and rabi seasons.[37]
- The GP has experienced 3 droughts in 2018, 2021, and 2022 typically during July to September[38], leading to crop failures and fodder shortages threatening farmers' livelihood.
- The sowing time for wheat and potato has shifted from November to December and October to November respectively, due to delayed winters. In case of paddy, the sowing time has shifted from July to August due to drought and delayed rainfall.[39]
- From the year 2019 to 2022, crop losses have been caused due to erratic rainfall, intense summer season as well as diseases. The losses amount to around 15,960 quintals of produce (paddy, wheat and mustard) or approximately Rs 2.74 crore (corroborated by prevailing MSP of the respective years).
- Nearly 375 buffaloes and 60 goats were also lost in the last 5 years, combined with decrease in productivity due to diseases and extreme weather events.
- Farmers in Bankota use ~137 tonnes of urea, ~154 tonnes of DAP, and other nitrogenous fertilizers per year which leads to GHG emissions of ~293 tonnes CO_2e per year. The farmers also rely on other chemical inputs such as pesticides and weedicides. Natural farming is not practiced in Bankota
- Agricultural water demand has increased as reported in the field survey, stressing on the need for water conservation and improved irrigation techniques.
- As reported in the field survey, GP does not have farmers producer organisation and seed bank resulting in farmers failing to plan/manage the risk during extreme weather events.
- Farmers in the GP lack awareness of natural fertilizers and natural farming techniques. The households practicing animal husbandry lack knowledge of insurance options and best practices in manure management[40].

The above points highlight a need for adopting sustainable and drought resilient agricultural practices to enhance adaptive capacity.

37 As per inputs received during the surveys
38 Based on inputs from the community during field surveys
39 As reported by GP during field surveys
40 As reported by GP during field surveys

Drought Management for Agriculture

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. Promotion and adoption of micro irrigation practices like drip irrigation and sprinkler irrigation 2. Construction of bunds with trees around agricultural fields 3. Adoption of drought tolerant variety of rice and shift to dry direct seeded rice to reduce water requirement of the crop 4. Adoption of drought tolerant variety of wheat 5. Expand millet crops cultivation 6. Promote artificial recharge by building farm ponds where feasible 7. Creating awareness about various insurance programmes for farmers to protect them from crop loss 8. Need based nutrient management in crops (e.g. Organic recycling, nutrient for foliar spray, etc.)[41]	1. Extension of micro irrigation 2. Extension of bunds 3. Construction of more farm ponds 4. Expansion of phase I activities to adopt drought tolerant variety 5. Crop rotation and mixed cropping with drought resistance crops such as millets and legumes 6. Continue the initiatives on creating awareness and provide support to farmer to avail various insurance programmes to protect them from crop loss	1. Extension of micro irrigation 2. Expansion of Phase II activities to adopt drought tolerant variety
Target	1. ~380.5 ha to have bunds with trees (50% of total agricultural area) 2. Micro irrigation practices introduced in ~80 ha (30% of agricultural land under sugarcane and potato) 3. Construction of 5-10 farm ponds of 300 m^3 capacity each as feasible	1. All agriculture land ~761 ha (100% of agricultural land) to have bunds with trees 2. Micro irrigation practices introduced in ~107 ha (Additional 40% of agricultural land under sugarcane and potato) 3. Construction of 15-20 farm ponds as feasible	1. Micro irrigation practices introduced in ~80 ha (100% of agricultural land under sugarcane and potato covered) 2. Maintenance of bunds and farm ponds

41 Drought Manual (2020), https://vedas.sac.gov.in/static/pdf/Drought%20Manual-2020.pdf

Estimated Cost	1. Bunds: Around ₹2,92,650 2. Micro irrigation: ₹80,00,000 3. Farm ponds: ₹4,50,000 to ₹9,00,000 *Total Cost: ₹87.42 lakhs to ₹91.92 lakhs*	1. Bunds: Around ₹2,92,650 2. Micro irrigation: ₹1,07,00,000 3. Farm ponds: ₹13,50,000 to ₹18,00,000 *Total Cost: ₹1.23 crores to ₹1.27 crores*	Micro irrigation: ₹80,00,000 *Total Cost: ₹80 lakhs*

Transition to Natural Farming

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. Promote natural farming through the use of organic fertiliser, bio-pesticides and bio-weedicides. » Training and demonstration » Development of nursery and local seed bank » Organic/natural farming certification process to initiated » Market linkages to be explored 2. Promotion and adoption of practices such as mixed cropping, crop rotation, mulching, zero tillage	1. Continuing the transition of agricultural land to natural farming (nursery, seed bank, certification mechanism & market linkages established) 2. Promotion and adoption of practices implemented in Phase I	100% expansion of transitioning agricultural land to natural farming
Target	Transitioning ~114 ha (15%) of agricultural land to natural farming	Transitioning ~304 ha (40%) of agricultural land to natural farming	Transitioning remaining ~343 ha (100% covered) of agricultural land to natural farming
Estimated Cost	1. Cost of training (one time): ₹60,000 2. Transition of land to natural farming: ₹2,81,69,400 *Total Cost: ₹2.82 crores*	1. Cost of training (one time): ₹60,000 2. Transition of land to natural farming: ~₹ 7,51,18,400 *Total Cost: ₹7.52 crores*	1. Cost of training (one time): ₹60,000 2. Transition of land to natural farming: ~₹8,47,55,300 *Total Cost: ₹8.48 crores*

Sustainable Livestock Management

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. Raising awareness and capacity building for households engaged in animal husbandry for livestock management 2. Training community members as animal health workers/para-vet training for improving access to livestock health services Refer to section '*Additional Recommendations*' for intervention on reducing methane emission from livestock.	1. Expansion of training and capacity building activities 2. Scaling up para-vet training as per requirement	1. Expansion of training and capacity building activities 2. Scaling up para-vet training as per requirement
Target	1. Workshops organised for households engaged in animal husbandry on sustainable rearing practices, disease prevention, and management of livestock health 2. Training of 2 para-vets[42]	1. Additional workshops on disease prevention and sustainable rearing practices organised 2. Continued training and capacity building for livestock	1. Additional workshops on disease prevention and sustainable rearing practices organised 2. Continued training and capacity building for livestock
Estimated Cost	Cost of workshop and para-vet training: As per requirement	As per requirement	As per requirement

Existing Schemes and Programmes

- Drought management and proofing practices can be supported through funds and subsidies from Pradhan Mantri Krishi Sinchai Yojana (PMKSY), UP Millets revival programme, Pradhan Mantri Fasal Bima Yojana, National Agricultural Insurance Scheme, Weather-based Crop Insurance Scheme, Gramin Krishi Mausam Seva Scheme.

42 No. of community-based animal health workers trained to based on requirement of the GP

- Drought proofing activities and creation of nurseries and seed banks can be streamlined through MGNREGA
- Organic farming practices can be supported through funds and subsidies provided under various schemes such as: Paramparagat Krishi Vikas Yojana (PKVY) and Soil Health Management Scheme
- Technical and knowledge support as well as organic farming demonstrations for farmers can be enabled through National and Regional Centres for Organic Farming (NCOF & RCOF), Krishi Vigyan Kendra (KVK), nearest Organic Farming Cell of the Department of Agriculture, Cooperation and Farmer Welfare.
- Agricultural Technology Management Agency (ATMA) can be tapped into for support for training and capacity building of the farmers and FPOs for technology upgradation and sustainable farming.
- Krishi Raksha Scheme supports farmers in pest control through different ecological resources and to promote use of bio-chemicals.
- Para-veterinarian training and capacity building can be leveraged through state schemes like State Rural Livelihood Mission, Uttar Pradesh *Pashudhan Swasthya Evam Rog Niyantran Yojana,* and *Rashtriya Gokul Mission*.

Other Sources of Finance

- Set-up & operationalise (in alignment with schemes mentioned in 'Access to Clean, Sustainable, Affordable and Reliable Energy' section) cold-storage facility to help minimise post-harvest losses.
- Raising awareness: information on organic farming practices and benefits, inputs required, demonstrations, relevant sources of information and guidance, registration process, verification and certification process, market linkages and weather-based information services, etc.
- Provide guidance, training, and capacity building for farmers, FPOs, SHGs and other community members to avail insurance, benefits of different schemes as well as for technical aspects of implementing Climate Smart Agriculture practices including adoption of organic fertilisers, eventual transition to organic farming, drought proofing agriculture and sustainable livestock management.
- Further, capacity building of farmers, FPOs, SHGs and other community members engaged in sustainable agriculture in Bankota can be carried out in collaboration with technical experts and institutes in the region, local NGOs, CSOs and corporates.

Key Departments

- Department of Agriculture, Cooperation and Farmer Welfare
- Department of Horticulture and Food Processing
- CIPM - Centre for Integrated Pest Management
- Fisheries Department
- Department of Land Resources
- Jal Shakti Department
- Agriculture Technology Management Agency (ATMA)
- Animal Husbandry Department
- Uttar Pradesh New & Renewable Energy Development Agency (UPNEDA)
- Regional Centres for Organic Farming
- Krishi Vigyan Kendra, Badaun

4 Sustainable Solid Waste Management

Context & Issues

- The total waste generated[43] from all domestic activities (household, public and semi-public spaces, and commercial areas) in the GP is approximately 605 kg per day. Out of this, 351 kg per day of biodegradable/organic waste and 254 kg per day of non-biodegradable waste.
- As per inputs received during field surveys, there is a lack of public awareness about waste segregation and solid waste management. This results in waterlogging due to clogged drains during monsoons, leading to health hazards[44] .
- The large quantities of agricultural and animal waste also add to the waste management issues in Bankota. The total livestock population in the GP is 800 (including cow, buffalos, and goats) and the estimated dung output is roughly 9.6 tonnes per day which can be managed substantially through interventions such as composting, vermicomposting, natural fertilisers production and biogas generation in Bankota.[45]
- The household toilet coverage is ~32%. The field surveys highlighted the need of expansion of sanitation infrastructure in the GP.

Against this backdrop the following solutions are proposed to ensure 100% solid waste management as well as boost the economy and create livelihood opportunities.

43 Refer to Annexure IV for estimation methodology

44 As reported during field surveys

45 Assuming cows produce 10 kg dung/day, buffalos produce 15 kg dung/day, and goats produce 150 g dung/day

Establishing a Waste Management System

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. Setting up GP-level segregation and storage facility: for non-biodegradable waste 2. 1 Electric vehicle for collection and transportation of waste from households to GP-level storage facility 3. Installation of waste collection bins at strategic locations (markets, shops, tea stalls etc.) 4. Setting up partnerships between Panchayat, SHGs, informal ragpickers, local scrap dealers, local businesses, and Micro, Small, and Medium Enterprises (MSMEs) :	1. Maintenance of GP-level segregation and storage facility 2. Maintenance of existing waste bins installed and additional installation of bins at new strategic locations, as per requirement 3. Scaling up partnership beyond GP to other villages/districts	1. Maintenance of GP-level: segregation and storage facility 2. Maintenance of existing waste bins installed 3. Scaling up partnership beyond GP to other villages/districts
Target	1. 1 EV for daily waste collection 2. 1,177 households (100%) covered under GP's waste management system 3. Installation of waste bins	Maintenance of existing facilities and waste management system	Maintenance of existing facilities and waste management system
Estimated Cost	1. 1 EV: ₹1,05, 000 2. 1,177 waste bins/ containers[46] : ₹6,00,000 *Total cost: ₹7,05,000*	As per requirement	As per requirement

46 Refer to HRVCA for details

Management of Organic Waste

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. Setting up Nadep/ vermicompost pits 2. Partnership building between Panchayat and relevant stakeholders	1. Setting up of additional compost pits for treatment of biodegradable/organic waste 2. Regular maintenance of vermicompost pits 3. Scaling up partnership beyond GP to other villages/districts	1. Setting up of additional compost pits for treatment of biodegradable/organic waste 2. Regular maintenance of vermicompost pits 3. Scaling up partnership beyond GP to other villages/districts
Target	1. Setting up of 20[47] Nadep/ vermicomposting pits 2. Partnership model between panchayat, community members and farmer groups for (explained in detail in 'Enhancing Livelihoods and Green Entrepreneurship' section): » Production and sale of compost » Sale of agricultural waste	1. Setting up of additional compost pits for treatment of all (100%) of biodegradable/organic waste from households, public/semi-public facilities, commercial set ups and agriculture 2. Maintenance of compost pits 3. Scaling up partnership	1. Setting up of additional compost pits for treatment of all (100%) of biodegradable/organic waste from households, public/ semi-public facilities, commercial set ups and agriculture 2. Maintenance compost pits 3. Scaling up partnership
Estimated Cost	20 vermicomposting: ₹5,00,000 *Total Cost: ₹5,00,000*	As per requirement	As per requirement

47 Refer to HRVCA for location details

Ban on Single Use Plastics

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. Awareness, training, and capacity-building programs for: » Village Water and Sanitation Committee (VWSC) » Students & youth groups » Community members & commercial establishments 2. Partnership model: explained in detail in 'Enhancing Livelihoods & Green Entrepreneurship section'	1. Regular awareness, training, and capacity-building programs 2. Scaling up partnership beyond GP to other villages/districts	1. Regular awareness, training, and capacity-building programs 2. Scaling up partnership beyond GP to other villages/districts
Target	1. Complete ban on Single Use Plastics (SUPs) 2. 100-120 women to be engaged in manufacturing plastic alternative products (out of the 150 women currently engaged with SHGs)	1. Ban on SUPs upheld 2. Increased engagement in manufacturing plastic alternative products from this GP & nearby villages of: » Additional 200 women » Additional SHGs, MSMEs & individual entrepreneurs	1. Ban on SUPs upheld 2. Consumer-wide plastic use diminishes as alternatives are available readily

Enhancing Sanitation Infrastructure

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. Construction of community toilet 2. Construction of household toilets	1. Regular maintenance of community toilet 2. Continue Phase I activity	1. Regular maintenance of community toilets 2. Continue Phase I activity
Target	1. Construction of community toilets as per requirement 2. Construction of household toilets as per requirement	Maintenance of 1 community toilet: As per requirement	Maintenance of 1 community toilet: As per requirement
Estimated Cost	As per requirement	As per requirement	As per requirement

Existing Schemes and Programmes

- MGNREGA can be tapped into for the construction of community-based composting facilities, waste collection and segregation pits; segregation and storage shed.
- The development of infrastructure and training and capacity building can be supported by initiatives under the Swachh Bharat (Gramin) Mission.

Other Sources of Finance

- CSR funding and Panchayat-Private-Partnership (PPP) models can help to develop and operate infrastructure like plants, segregation yard, plastic-alternative enterprises, marketing, procurement of e-vehicles for waste transport, etc.
- Further, CSR support will be crucial in increasing awareness, training, and capacity building of all stakeholders involved in the production of alternative products for plastic, composting processes and to promote sustainable consumption behaviour at the individual level.
- GP's own resources, including ties and untied funds, can be utilised to develop the required infrastructure for waste management as per Swachh Bharat Mission – Gramin (SBM-G) guidelines.

Key Departments

- Panchayati Raj Department
- Department of Health and Family Welfare
- Department of Rural Development
- Department of Agriculture
- Uttar Pradesh Khadi and Village Industries Board

5 Access to Clean, Sustainable, Affordable and Reliable Energy

Context & Issues

- Bankota GP consumed approximately 3,32,000 units of electricity in 2022-23. While ~65% of households in the GP have electricity connection, the power supply, as understood from the community members is not 24*7. On an average the GP experience ~10 hours of power cuts every day. [48]
- Due to the power cuts, there are 5 diesel generators operating in the GP[49] for power back-up and they consumer about ~15 kL of fuel annually.
- Incandescent lamps, CFL (compact fluorescent) lights and other electrical fixture and appliances with low efficiency are in use in many homes and public utilities. Additionally, the GP has expressed a need for 380 solar street lights (30 high mast lights and 350 LED streetlights)[50]
- In Bankota, ~32% households use LPG for cooking, while cowdung and fuelwood is used for cooking in ~800 households. Additionally, nearly 530 individuals were affected by respiratory illnesses due to indoor and outdoor air pollution in 2022-2023[51] . Therefore, there is a need to transition to cleaner cooking solutions that will not only lead to a reduction in emissions but also yield co-benefits such as improved indoor air quality.
- With increasing temperature, thermal comfort levels in homes are reducing and there is need for sustainable space cooling.

Based on the energy related concerns identified of the GP, in combination with the recently launched as well as ongoing programmes of the Central and State Government, such as the PM Surya Ghar Bijli Muft Yojana, PM KUSUM scheme, UP State Solar Policy 2022, among others, the following solutions are proposed for implementation in Bankota. The intent of the suggested activities is to ensure access to clean, sustainable, affordable and reliable energy for the communities in the GP. This would not only enhance their quality of life but also help to supplement incomes through productive use of energy.

48 As shared by the community in field survey
49 As reported during field surveys
50 Based on inputs received from Gram Pradhan
51 As reported during field surveys

Solar Rooftop Installations

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	Solar rooftops to be installed on all government buildings[52]	1. All new construction can be installed with solar PV 2. Solar rooftop to be installed on pucca households	1. All new construction can be installed with solar PV 2. Solar rooftop set-up for remaining pucca households
Target	Solar rooftop capacity installed on: » Panchayat Bhawan (23.22 sq. m. rooftop area): ~2 kWp » Primary School, Bankota (400 sq.m rooftop area): ~10 kWp » Primary School, Garruiya (222 sq.m rooftop area): ~10 kWp » Primary School, Ninma (111 sq.m rooftop area): ~8 kWp » Junior High School (333 sq.m rooftop area): ~10 kWp » High School (450 sq.m rooftop area): ~10 kWp » Health Sub Centre (60 sq. m. rooftop area): ~4 kWp » Anganwadi centre 1(100 sq.m. rooftop area): ~7 kWp	Solar rooftop capacity installed on 428 (~40%) of pucca houses[53] Solar rooftop capacity installed: ~1,284 kWp Total annual electricity generated: ~17,19,533 kWh per year[54] (4,711 units per day) GHG emissions avoided: approximately 1,410 tCO_2e per year [55]	Solar rooftop capacity installed on remaining 644 (100% covered) of pucca houses Solar rooftop capacity installed: ~1,932 kWp Total annual electricity generated: ~ 25,87,334 kWh per year[56] (7,088 units per day) GHG emissions avoided: approximately 2,122 tCO_2e per year

52 Solar installation in PRI buildings capped at 10kWh

53 Average area of households considered to be 130 sq.m; 3 kWp rooftop installation estimated per household

54 This generation is five times higher than the current electricity consumption in the GP

55 The emissions avoided will help move the GP towards carbon neutrality.

56 This generation is seven times higher than the current electricity consumption in the GP

Target	Total solar rooftop capacity installed: ~61 kWp Total annual electricity generated: ~81,690 kWh per year (~223 units per day) GHG emissions avoided: approximately ~67 tCO_2e per year *In light of much needed and ambitious targets of the recently launched PM Surya Ghar Yojana, households can also be part of if this phase of solar PV installation on rooftops*		
Estimated Cost	*Total Cost: ₹30,50,000 (₹50,000 /kWp)*	Total Cost: ₹6,42,00,000 Indicative subsidy[57] : ~40% (State + CFA) Effective cost: ₹3.85 crores	Total Cost: ₹9,66,00,000 Indicative subsidy: ~40% (State + CFA) Effective cost: ₹5.79 crores

Agro-photovoltaics

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	Awareness generation amongst farmers, farmer groups, etc.	Agro-photovoltaic installed on area portion of suitable agricultural land (under horticulture and legume crops)	Agro-photovoltaic installed on area portion of suitable agricultural land (under horticulture and legume crops)
Target	Organising awareness campaigns and orientation sessions to encourage uptake of agro-photovoltaic initiatives amongst farmers	Agro-photovoltaic installed on 2 ha Capacity installed: 500 kWp Electricity generated: 6,69,600 kWh per year (~ 1,835 units per day) GHG emissions avoided: 549 tCO_2e per year	Agro-photovoltaic installed on 2 ha Capacity installed: 500 kWp Electricity generated: 6,69,600 kWh per year (~1,835 units per day) GHG emissions avoided: 549 tCO_2e per year

57 Subsidies are dynamic and are subject to change as per various parameters fixed by state and central government from time to time Hence, the subsidy amount assumed is based on past trends and averages and may not be exact at prevailing time

Estimated Cost	As per the requirement	*Total Cost: ₹5,00,00,000*[58]	*Total cost: ₹5,00,00,000*

Solar Pump

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	Replacing 30 existing diesel pump sets with solar pumps[59] * **If solar pumps are not feasible then, energy efficient pumps (Kisan Urja Daksh Pumps by EESL) can be considered*	1. Solarisation of grid-connected electric pumps in GP 2. Encouraging purchase/ use of all new pump sets to be solar-powered	1. Solarisation of remaining grid-connected electric pumps in GP 2. Encouraging purchase/ use of all new pump sets to be solar-powered
Target	Capacity installed: ~165 kW Electricity generation potential: ~2,20,968 kWh per year Diesel consumption avoided: ~11,700 litres/year GHG Emissions avoided: 31.25 tCO_2e per year	Solarisation of 95 (50%) of grid connected electric pumps in GP	Solarisation of 95 (remaining 50%) of grid connected electric pumps in GP

58 With advancements in technology, the cost of agro-photovoltaic has been decreasing. However, a conservative estimate of the cost on the higher side has been taken. Further, it has been assumed that farmers tend to practice crop rotation even on land earmarked for horticulture and other similar crops. Hence, only a percentage of the land available under horticulture has been taken into consideration for installation of agro-photovoltaic.

59 Assuming diesel pump having 7.5 HP capacity

Estimated Cost	*Total Cost: ₹90,00,000 to ₹1,50,00,000 (₹ 3,00,000 to ₹5,00,000/7.5 HP Solar pump)* Indicative subsidy: 60% (State +CFA) Effective cost: ₹36,00,000 to ₹60,00,000	As per requirement	As per requirement

Clean Cooking

Phase	**I (2024-25 to 2026-27)**	**II (2027-28 to 2029-30)**	**III (2030-31 to 2034-35)**
Suggested Climate Smart Activities	*Scenario 1:* Household Biogas + LPG *Scenario 2:* Solar powered induction cookstoves + LPG *Scenario 3:* Solar powered induction cookstoves + Improved Chulhas + LPG	*Scenario 1*: Household Biogas + LPG *Scenario 2*: Solar powered induction cookstoves + LPG *Scenario 3*: Solar powered induction cookstoves + Improved *chulhas* + LPG All new household constructions include improved *chulahs*/ solar-powered cookstoves and/ or household biogas plants	*Scenario 1*: Household Biogas + LPG *Scenario 2*: Solar powered induction cookstoves + LPG *Scenario 3*: Solar powered induction cookstoves + Improved *chulhas* + LPG All new household constructions include improved *chulahs*/ solar-powered cookstoves and/ or household biogas plants

Target	*Scenario 1:* 112 households use Biogas plants (~ 25% of households having cattle) + 1,065 households use LPG *Scenario 2:* 74 households use solar powered induction cookstoves (25% of households in the top income groups) + 1,103 households use LPG *Scenario 3:* 74 households use solar powered induction cookstoves (25% of households in the top income groups) + 200 households use improved Chulha (25% of households that currently use biomass) + 903 households use LPG This also includes the continued use of LPG in the GP	*Scenario 1:* Additional 225 households use Biogas plants (cumulative 50% of households having cattle) + 840 households use LPG *Scenario 2:* 74 more households use solar powered induction cookstoves (Additional 25% households in the top income groups) + 1,029 households use LPG *Scenario 3:* 74 more households use solar powered induction cookstoves (Additional 25% households in the top income groups) + 200 more households use improved Chulha (Additional 25% of households that currently use biomass) + 629 households use LPG This also includes the use of LPG in the GP in remaining households	*Scenario 1:* Additional 113 households use Biogas plants (100% households having cattle) + 727 households use LPG *Scenario 2:* 147 more households use Solar powered induction cookstoves (Additional 50% households in the top income groups) + 916 households use LPG *Scenario 3:* 147 more households use Solar powered induction cookstoves (100% households in the top income groups) + 400 more households use improved Chulha (Additional 50% households in the top income groups) + 82 households use LPG This also includes the continued use of LPG in the GP
Estimated Cost	*Scenario 1:* ₹56,00,000 for biogas plants (₹ 50,000 for 2 to 3 m^3 biogas plant) *Scenario 2:* ₹33,30,000 for solar induction cookstove *Scenario 3:* ₹39,30,000 = ₹33,30,000 for solar induction cookstove + ₹6,00,000 *Average cost across scenarios: ₹42.86 lakhs*	*Scenario 1:* ₹1,12,50,000 for biogas plants (₹ 50,000 for 2 to 3 m^3 biogas plant) *Scenario 2:* ₹33,30,000 for solar induction cookstove *Scenario 3*: ₹39,30,000 = ₹33,30,000 for solar induction cookstove + ₹6,00,000 *Average cost across scenarios: ₹61.70 lakhs*	*Scenario 1:* ₹56,50,000 for biogas plants (₹50,000 for 2 to 3 m^3 biogas plant) *Scenario 2:* ₹66,15,000 for solar induction cookstove *Scenario 3:* ₹66,15,000 for solar induction cookstove + ₹12,00,000 *Average cost across scenarios: ₹66.93 lakhs*

Energy Efficient Fixtures

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. All light fixtures and fans to be replaced with energy efficient fixtures in all government/public/ semi-public buildings (Primary Schools, Panchayat Bhawan, Anganwadi) 2. At least 1 incandescent/ CFL bulb in all households to be replaced by LED bulb or 1 fluorescent tube lights to be replaced with LED tube light 3. Residents must also be encouraged to upgrade other household appliances energy efficient appliances (4-5 star rated by BEE)	1. All incandescent bulbs in households to be replaced by LED bulbs and all fluorescent tube lights to be replaced with LED tube light 2. At least 1 conventional fan to be replaced with energy efficient fans 3. Residents must also be encouraged to upgrade other household appliances energy efficient appliances (4-5 star rated by BEE)	All fans in all households to be replaced with energy efficient fans
Target	1. All tube lights and fans (approximately 50 tube lights and 24 fans) to be replaced in all government buildings 2. 1,177 LED tube light installed in households (1 energy efficient tube light installed per household)	1,177 energy efficient fans installed in each household[60] (1 fan replaced per household)	2,354 energy efficient fans installed in all households (2 fans replaced per household)
Estimated Cost	Cost of LED tube lights: ₹2,69,940 Cost of energy efficient fans: ₹26,640 *Total Cost: ₹2,96,580*	Cost of energy efficient fans: ₹13,06,470 *Total Cost: ₹9,68,000*	Cost of energy efficient fans: ₹26,12,940 *Total Cost: ₹26,12,940*

60 Based on inputs received from Gram Pradhan

Solar Streetlights

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	Install solar LED streetlights along roads, public spaces and other key locations[61]	Install solar LED streetlights along roads, public spaces and other key locations	Regular maintenance and addition of streetlights as required
Target	1. Installing 15 high-mast solar LED streetlights at key locations (primary school, Panchayat Bhawan, water bodies) 2. Installing 150 solar LED streetlights along the roads and pathways	1. Installing 15 high-mast solar LED streetlights at key locations 2. Installing 200 solar LED streetlights along the roads and pathways	1. Regular maintenance and addition of streetlights as required 2. Installing 200 solar LED streetlights along the roads and pathways
Estimated Cost	Cost of high mast streetlights: ₹7,50,000 Cost of LED streetlights: ₹15,00,000 *Total cost: ₹22,50,000*	Cost of high mast streetlights: ₹7,50,000 Cost of LED streetlights: ₹20,00,000 *Total Cost: ₹27,50,000*	Cost of LED streetlights: ₹20,00,000 *Total Cost: ₹20,00,000*

61 Based on inputs received from the GP during field surveys and further discussions with Gram Pradhan

Existing Schemes and Programmes

- The Uttar Pradesh Solar Energy Policy, 2022[62] provides:
  - » Subsidy on solar installations in residential sector: from ₹15,000/kW to a maximum limit of ₹30,000/- per consumer over and above the Central Financial Assistance by MNRE.
  - » Provision for solar installations in institutions in RESCO[63] mode by themselves or in consultation with UPNEDA with consultancy fee of 3% cost of the plant.
- Central Financial Assistance by MNRE through Grid Connected Solar Rooftop Programme
  - » CFA up to 40% will be given for RTS systems up to 3 kW capacity. For RTS systems of capacity above 3 kW and up to 10 kW, the CFA of 40% would be applicable only for the first 3 kW capacity and for capacity above 3 kW (up to 10 kW) the CFA would be limited to 20%.
  - » For Group Housing Societies/Residential Welfare Associations (GHS/RWA) CFA will be limited to 20% for installation of RTS plant for supply of power to common facilities. The capacity eligible for CFA for GHS/ RWA will be limited to 10 kWp per house and total not more than 500 kWp.
  - » Solar rooftop installations for poor households can be undertaken under the PM-Surya Ghar: Muft Bijli Yojana[64]. The scheme provides a CFA of 60% of system cost for 2 kW systems and 40% of additional system cost for systems between 2 to 3 kW capacity. The CFA will be capped at 3 kW. At current benchmark prices, this will mean Rs 30,000 subsidy for 1 kW system, Rs 60,000 for 2 kW systems and Rs 78,000 for 3 kW systems or higher.
- PM KUSUM Yojana provides:
  - » Component A of PM KUSUM Yojana, promotes setting up of 500 kW and larger solar power plants on agriculture land.
  - » Under Components B & C of the PM KUSUM scheme, the Centre and State government will provide a subsidy of 30% each per pump basis. Farmers will only need to pay an upfront cost of 10% and rest can be paid to the bank in instalments.
- Contribution of U.P. government to PM KUSUM Yojana:
  - » Under Component C-1: Solarisation of installed on-grid pumps with 60% subsidy to farmers (70% subsidy to the Scheduled Tribe, Vantangia and Musahar caste farmers); this is in addition to subsidy available from central government through MNRE's PM KUSUM Scheme.
  - » Under Component C-2: Solarisation of Segregated Agriculture feeders by State government providing Viability Gap Funding (VGF) of ₹50 lakh per megawatt in addition to subsidy being provided by Central government through MNRE's PM KUSUM Scheme
- LED Street lighting projects in Gram Panchayats[65] :
  - » EESL replaces conventional streetlights with LED streetlights at its own cost and provides free replacement and maintenance of LED bulbs for up to 7 years.
  - » Atal Jyoti Yojana and MNRE Solar Streetlight Programme provide subsidies for installation of solar street lights with 12 Watt LEDs and 3 days battery back-up.
- GRAM UJALA scheme[66] :
  - » LED bulbs available at an affordable price of ₹10 per bulb.
  - » Rural customers will be given 7-watt and 12-watt LED bulbs, with a three-year warranty, in exchange for working incandescent bulbs.

62 https://invest.up.gov.in/wp-content/uploads/2023/02/Uttar_Pradesh_Solar_Energy_Policy_2022.pdf

63 Third party (RESCO mode) {Renewable Energy Supply Company}

64 https://pmsuryaghar.gov.in/

65 Street Lighting National Programme by EESL. https://eeslindia.org/en/ourslnp/

66 Gram Ujala scheme distributes One Crore LED bulbs in rural areas (Feb 2023), PIB https://pib.gov.in/PressReleasePage.aspx-?PRID=1897767

- Subsidies for cold storage set ups:
  - » Government assistance in the form of credit linked back ended subsidy of 35% of the project cost is available through 2 schemes:

    a. Department of Agriculture Cooperation and Farmers Welfare (DAC&FW) is implementing Mission for Integrated Development of Horticulture (MIDH)

    b. National Horticulture Board (NHB) is implementing a scheme namely "Capital Investment Subsidy for Construction/Expansion/Modernisation of Cold Storages and Storages for Horticulture Products
  - » Under the Pradhan Mantri Kisan Sampada Yojana, the component on Integrated Cold Chain[67], Value Addition and Preservation Infrastructure provides financial assistance in the form of grant-in-aid at the rate of 35% can be obtained for creation of infrastructure facility along the entire supply chain for facilitating distribution of non-horticulture, horticulture, dairy, meat and poultry. The scheme allows flexibility in project planning with special emphasis on creation of cold chain infrastructure at farm level.
- EESL plans to initiate market-based interventions for solar-based induction cooking solutions by leveraging Carbon Financing.
- Leveraging funds through the 15th Finance Commission and schemes like GOBARDHAN (Galvanising Organic Bio-Agro Resources Dhan) scheme under Swachh Bharat Mission - Gramin (SBM-G).
  - » The GOBARDHAN scheme under SBM-G provides financial assistance up to ₹50.00 lakh per district for the period of 2020-21 to 2024-25 for setting up of cluster/community level biogas plants[68].
- UP Bio-Energy Policy 2022[69] provides incentives for setting up CBG plants in addition to incentives available from Govt. of India under the GOBARDHAN scheme:
  - » The incentive of ₹75 lakh/tonne to the maximum of ₹20 crores on setting up Compressed Biogas (CBG) Production Plant
  - » Exemption on development charges levied by development authorities
  - » Exemption of 100% Stamp duty and Electricity duty
- MNRE implemented the Waste to Energy (WTE) Programme under the umbrella of the National Bio-energy Programme:
  - » The programme supports the setting up of plants for the generation of Biogas from urban, industrial, and agricultural waste
  - » Financial assistance available for Biogas generation is ₹0.25 Crore per 12000 m^3/day[70]

67 viz. pre-cooling, weighing, sorting, grading, waxing facilities at farm level, multi product/multi temperature cold storage, CA storage, packing facility, IQF, blast freezing in the distribution hub and reefer vans, mobile cooling units

68 https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1883926

69 https://invest.up.gov.in/bio-energy-enterprises-promotion-programme-2022/

70 https://pib.gov.in/PressReleasePage.aspx?PRID=1896067

Other Sources of Finance

- Explore tie ups with local banks, microfinance institutions and cooperative banks for loans to procure solar rooftop, solar pumps etc.
- Explore partnerships with solar developers for agro-photovoltaics.
- CSR funds can be utilised:
  - » To cover the capital cost for installation of solar rooftops/Agro-Photovoltaics/solar pumps over and above the scheme/programme subsidy through a revolving fund model similar to those given by micro-finance institutions.
  - » Provide 'Operation and Maintenance' training to village community members/SHGs members for the various clean technologies adopted in the GP.
  - » Organise awareness campaigns on existing government schemes/programmes that promote rooftop solar (UP Solar Policy, 2022) and solar irrigation (PM-KUSUM, UP Solar Irrigation Scheme).

Key Departments

- Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA)
- Uttar Pradesh Power Corporation Limited (UPPCL)
- Madhyanchal Vidyut Vitran Nigam Limited
- Panchayati Raj Department
- Rural Development Department
- Department of Agriculture
- Education Department

6 Sustainable and Enhanced Mobility

Context & Issues

- Bankota has a total of 828 internal combustion engine (ICE) vehicles; 700 - two-wheelers, 32 cars, 2 auto-rickshaw, and 94 tractors[71].
- Additionally, there are 11 e-rickshaws in the GP
- The total fuel consumption by the ICE vehicles is ~94 kilo litre (kl) of diesel and ~197 kl of petrol per annum. Overall, the fuel consumed in the transport sector has led to over ~718 tCO_2e emissions[72].

Therefore, there is significant scope for improving transport infrastructure and initiative a transitioning to e-mobility solutions.

Promoting Adoption of E-vehicles and E-tractors

Phase	I (2024-25 to 2026-27)	II (2027-28 to 2029-30)	III (2030-31 to 2034-35)
Suggested Climate Smart Activities	1. Promote electric alternatives of diesel tractors and goods transport vehicles 2. Sensitise user groups (farmers/logistic owners/ entrepreneurs) towards long term benefits of e-vehicles over ICE vehicles 3. Establish facility to hire e-tractors and e-goods vehicles (described in enhancing livelihood section)	Continue the sensitisation of various user groups towards long term benefits of e-vehicles over ICE vehicles as well as the schemes and programmes available for their benefit	Continue the sensitisation of various user groups towards long term benefits of e-vehicles over ICE vehicles as well as the schemes and programmes available for their benefit

71 As per inputs received during field surveys

72 Based on inputs received from community during field surveys

Target	Total 5 e-tractors and 5 e-goods carriers purchased	Additional e-vehicles and e-tractors procured if required	Additional e-vehicles and e-tractors procured if required
Estimated Cost	Total cost of 5 e-tractors is ~₹30,00,000 Total cost of 5 e-commercial vehicles: ₹ 25,00,000 – 50,00,000 *Total cost: ₹55,00,000 – ₹80,00,000*	As per requirement	As per requirement

Enhancing Intermediate Public Transport

Phase	**I (2024-25 to 2026-27)**	**II (2027-28 to 2029-30)**	**III (2030-31 to 2034-35)**
Suggested Climate Smart Activities	Replacing autorickshaws in the GP with e-autorickshaws	Introducing more e-autorickshaws to improve last mile connectivity	Additional e-autorickshaws can be procured based on demand
Target	2 e-autorickshaws added to GP's IPT fleet	Additional e-autorickshaws procured if required	Additional e-autorickshaws procured if required
Estimated Cost	Cost of one e-autorickshaws[73] : around ₹3,00,000 >Available subsidy: up to ₹12,000 per vehicle >Effective cost of 2 e-autorickshaws: ₹5,76,000 GHG emissions avoided: 3.6 tCO_2e[74]	As per requirement	As per requirement

73 The cost of e-autorickshaws ranges from a band of Rs. 1,50,000 - Rs. 4,00,000 and more, depending on the configurations, battery type, amongst others. Price of e-autorickshaws is assumed to be at the middle of the price band primarily factoring in possible subsidies/grants/seed capital/viability gap funding from philanthropies and other funding agencies

74 GHG emissions avoided per auto estimated to be 1.80 tCO_2e per auto based on inputs from the community. Replacing diesel autorickshaws with e-autorickshaws will reduce this emission and contribute towards the GP becoming carbon neutral or even carbon negative.

Existing Schemes and Programmes

- Road infrastructure can be repaired and enhanced with support from Pradhan Mantri Gram Sadak Yojana and MGNREGS.
- UP Electric Vehicle Manufacturing and Mobility Policy, 2022 provides:
  - » 100% registration fee and Road Tax exemption to buyers (during the Policy period).
  - » Purchase Subsidy as early bird incentives[75] to buyers (one time) through dealers over a period of 1 year – E-goods Carriers: @10% of ex-factory cost up to ₹1,00,000 per vehicle; 2-Wheeler EV: @15% of ex-factory cost up to ₹5000 per vehicle; 3-Wheeler EV: @15% of ex-factory cost up to ₹12000 per vehicle.
- Subsidies for e-rickshaws can also be availed under the Faster Adoption and Manufacturing of Electric Vehicles in India Phase II (FAME II) Scheme.

Other Sources of Finance

- GP's resource envelope and OSR.
- Loans from banks and micro-finance institutions in tandem with CSR support.

Key Departments

- Infrastructure and Industrial Development Department
- Transport Department
- Panchayati Raj Department
- Department of Rural Development
- Uttar Pradesh New & Renewable Energy Development Agency (UPNEDA)

75 Subsidies provided by the government are subject to periodic changes both in terms of the quantum and number of beneficiaries. Hence, subsidies mentioned in any section of this plan are only indicative, and need to be confirmed at the time of procurement.

7 Enhancing Livelihoods and Green Entrepreneurship

Agriculture and animal husbandry are the mainstay of the GP and nearly 85% of the households are engaged in these activities. Both the sectors are fraught with livelihood insecurities, particularly due to the frequent droughts, changing climate and the current unsustainable production practices in animal husbandry. Thus, the livelihoods of a large fraction of the population are uncertain. Other key sources of income in the GP are agriculture based and/or running local businesses/shops. In the past 5 years nearly 20 households have migrated out of the GP in search for better livelihood. This is a trend seen in most rural areas.

Presently, there are limited opportunities for jobs within the GP, beyond the activities mentioned. The recommendations mentioned in this action plan provide multiple avenues for new businesses and job opportunities in the coming years. These are detailed in the following table:

Engage already Existing SHGs in Manufacturing of Sustainable Products

Suggested Climate Smart Activities

1. Engaging women and SHGs in manufacturing of plastic alternative of disposables cutlery from agricultural waste like rice bran, wheat bran, paddy straw
2. Establishing partnership model between panchayat, women, SHGs and local entrepreneurs
3. Capacity building for:
   a. Diversification of product range
   b. Marketing/selling of the products within & outside the GP

Target

Initial engagement of:

a. 100 women
b. 9 SHGs (currently involved in tailoring activities)
c. Utilise locally available raw materials

Long-term engagement from this GP and nearby villages:

a. Additional 200 women
b. Additional SHGs, MSMEs & individual entrepreneurs

Composting & Selling of Organic Waste as Fertiliser

Suggested Climate Smart Activities

1. Establishing partnership between panchayat, community members, and farmer groups for production and sale of compost
2. Capacity building of farmers through training on:
   a. Composting and vermicomposting techniques
   b. Marketing & selling compost within & outside GP

Target

Immediate target:

Compost generated from domestic waste (organic): 351 kg per day; 10,530 kg per month

(as per current waste generation)

Long-term target:

Scaling up compost generation as per organic waste generation (based on population growth)

Facility to Hire E-goods Carriers and E-tractors

Suggested Climate Smart Activities

1. Commercial hiring (rental basis) of e-Goods carriers & e-tractors presents green entrepreneurship opportunities through incentives under UP EV Policy 2022 and FAME-India Scheme phase-II
2. Sensitising user groups (farmers/logistic owners) towards use of e-tractors & e-goods carriers

Target

Immediate target:

1. 2 or 3 e-tractors (Estimated cost: ₹6 lakhs per e-tractor)
2. 2 or 3 EV mini goods transport trucks (Estimated cost of mini goods EV transport truck: Approximately ₹9.2 lakhs)

Mid-term target:

Additional procurement of 2/3 e-tractors, 2/3 EV mini goods transport trucks

(Note: It is assumed that a 35 HP e-tractor is typically required in Bankota that costs around ₹6 lakhs)

Improving Livelihoods through Use of Solar Powered Cold Storage

Suggested Climate Smart Activities

1. Entrepreneurship opportunities through renting out of solar-powered cold storage space to smaller and medium farmers (within the GP & nearby villages) to minimise post-harvest losses
2. Business model/tie-up between entrepreneurs, farmer groups, cooperatives (like PARAS) and other institutional buyers for storage of fruits, vegetables, milk and milk products

Target

Setting up of cold storage with 5 to 10 MT capacity (tonnes based on production of vegetables and fruits/ and/or milk products)

(Nearly 32 percent households involved in animal husbandry and dairy)

Cost: approx. ₹8,00,000 to ₹15,00,000

Arogya Van for Production and Sale of Natural Medicines and Supplements

Suggested Climate Smart Activities

1. Livelihood generation for communities through development and maintenance of Arogya Van for production of natural medicines & supplements
2. Partnering with Central Institute of Medicinal and Aromatic Plants, Lucknow for skill development & training

Target

Around 0.1 ha of land to be established as *Arogya Van*

O&M of Various RE Installations (Solar and Biogas)

Suggested Climate Smart Activities

1. Training and capacity building of community members, especially. graduates, youth groups and farmer groups for skill development in RE maintenance
2. Support from CSR, upskilling schemes of Central and State Government in establishing Solar and Biogas installation and O&M businesses within the GP

Financing & Skill Development

- Sensitising banking & financial institutions to support green entrepreneurship & livelihoods (through various credit schemes, partnership/revenue models); Government loan schemes such as Mudra Loan, Stree Shakti Yojana, etc. can support women entrepreneurs.
- Necessary skill development provided through supporting government schemes and programmes like: Make in India, Entrepreneur Development Programme run by Department of Science and Technology (DST), National Skill Development Missions and Atal Innovation Mission.

6 List of Additional Projects for Consideration

Given below is a list of possible projects for additional consideration for implementation at the GP level by respective Panchayats. These projects have been successfully implemented in various parts of India and in geographies that may have a lot of similarities with Uttar Pradesh. The reason for not including them in the main recommendation is that these projects do not fall or come under the ambit of any ongoing schemes or programmes of the Government of Uttar Pradesh or through Centrally Sponsored Schemes. Hence, the implementation of these projects would have to be done through alternate financing options such as self-financing, CSR, or other such sources.

If implemented, these projects could have the potential to further strengthen the adaptive capacities of communities and may also result in livelihood enhancements.

1. Solar-powered Cold Storage Unit (FPO/SHG/ Individual Farmers)

- A solar-powered cold storage unit to enhance post-harvest efficiency and reduction in loss.
- It helps farmers avoid distress sales and improves farmers' income.

This activity will strengthen initiatives discussed in the 'Enhancing Livelihood and Entrepreneurship' section

Case Example/Best Practice[76,77,78]:

- Kattangur Farmers Producers Company Ltd in Hyderabad, Telangana
- Ghummar Farmer Producer Organisation (FPO) is based at village Nana of Bali tehsil of Pali district of Rajasthan

2. Solar Passive Design and Passive Cooling

For new construction and retrofitting (wherever possible): Promoting sustainable design and vernacular (local/traditional) materials in public and administrative buildings along with scaling up to residential houses to reduce energy demand and increase energy efficiency:

- Building orientation as per solar geometry
- Allow efficient movement of natural air
- Wind tower coupled with solar chimney
- Allow natural lighting through light vaults (minimising conventional light load)
- Energy conservation activities
- Water bodies and designed landscape (plantation/horticulture)

This activity will strengthen initiatives discussed in the 'Access to Clean, Sustainable, Affordable and Reliable Energy' section.

76 https://selcofoundation.org/wp-content/uploads/2023/08/Compendium_Updated_20230922.pdf
77 https://www.opportunityindia.com/article/empowering-women-fpo-through-solar-power-ghummar-fpo-34521
78 https://www.ecozensolutions.com/ecofrost/fpos-leverage-agri-infra-funds-for-ecofrost.html

Case Example/Best Practice:

The Rajkumari Ratnavati Girl's School[79], rural Thar desert, Rajasthan: for more than 400 girls that live below the poverty line.

- Building orientation to maximize thermal comfort
- Solar panel installations to run lighting and fans
- Solar panel canopy and Jallis/screens keep the heat out
- The elliptical shape of the canopy creates cooling (airflow)
- Building walls allow air penetration and keep the sun/sand out
- Use of local/vernacular material for construction

Solar Passive Complex, Punjab Energy Development Agency (PEDA), Chandigarh[80]

- 25 kWp building integrated solar power plant
- Orientation as per solar geometry
- Building envelope (design+material) to provide thermal comfort (e.g., Cavity walls, insulated roofing)
- Conditioned air and light by controlling solar access (e.g., Light vaults, Wind Tower coupled with Solar Chimneys)
- Small ponds and plantations (trees, shrubs, and grass) for cooling and air purification

3. Solar-powered RO Water Filtration System/Water ATM Kiosk (Community-based)

Solar-based RO water purification systems offer a sustainable and cost-effective solution by utilizing solar energy. It ensures a safe drinking water supply to the community while promoting the reuse of water. This initiative can be beneficial for Gram Panchayat facing issues with the quality of drinking water.

Case Example/Best Practice:

Hiwra lahe village, District - Washim, State- Maharashtra[81]

- Installing solar-powered RO water filtration system with CSR support
- Improvement in the socio-economic status of the community
- Enabling Village Water and Sanitation Committee for the operation and management of the system
- Similar initiatives have been implemented in the states of Gujarat, Telangana, Rajasthan, etc.

79 https://www.avontuura.com/rajkumari-ratnavati-girls-school-diana-kellogg-architects/
80 https://peda.gov.in/solar-passive-complex
81 https://yraindia.org/wp-content/uploads/2019/12/RO-plant-Success-story-in-Village-Hiwara-HDB-project.pdf

4. Solar-powered Cattle Sheds

Cattle sheds are an adaptive measure for livestock to protect them from heat and cold waves; this initiative can be supplemented to enable climate change mitigation by deploying solar power installations over the cattle shed roofs. This can power lighting, reduce energy demand (passive cooling and ventilation), support fodder preparations, and any other operations in the sheds. Excess power can be fed into the grid thereby generating additional income for farmers.

Cattle sheds will also help in waste management through biogas generation and fertilizer preparation from animal waste (dung). Cattle sheds will also help in reducing the transmission of communicable diseases in livestock by providing proper segregated and secure spaces.

This activity can strengthen the Sustainable Livestock Management suggestions in the "Sustainable Agriculture" section of the recommendations.

Case Example/Best Practice

Districts: Ludhiana, Bathinda & Tarn Taran, Punjab[82,83]

- The project is being implemented in 3 districts targeting 3000 Households of small & marginal farmers having landholdings of 1-2 ha and 5-15 dairy animals.
- Climate proofing of cattle sheds and promoting sustainable livelihoods of small and marginal livestock farmers

Nirmal Gujarat Campaign[84]

- The animal hostels in Himmatnagar, Gujarat help to keep the villages clean.
- Such shelters collect dung to generate biogas and vermicompost for villagers. Further, vermicompost can be sold to raise funds for village welfare.

Additionally, there is a "Cattle Shed Subsidy Scheme under Scheduled Castes Sub Plan (SCSP)[85]" which is implemented by the Directorate of Animal Husbandry, Agriculture, Farmers Welfare and Co-operation Department, Government of Gujarat. Under this scheme, financial assistance (either ₹30,000/- or 50% of the cost of the cattle shed, whichever is less) is given to Scheduled Caste beneficiaries for the construction of a Cattle Shed for 2 animals.

82 https://pscst.punjab.gov.in/en/climate-resilient-livestock-production-system
83 https://moef.gov.in/wp-content/uploads/2017/08/Punjab.pdf
84 https://jayshaktiengg.com/gujarat-government-launches-solar-scheme-for-farmers/
85 https://www.myscheme.gov.in/schemes/csssscspscc

5. Cool Roofs

Painting the roofs of households, and public and government buildings with solar-reflective paint

Case Example/Best Practice:

Slum households in Jodhpur, Bhopal, Surat, and Ahmedabad[86]

- Local community workers trained the households to paint their own cool roof
- Demonstration outreach: more than 460 roofs
- Indoor temperatures lower by 2 - 5°C compared to traditional roofs

This activity links to the section 'Access to Clean, Sustainable, Affordable, and Reliable Energy'.

6. Reduction of Methane Emissions from Cattle through the Use of Feed Supplements

The Indian Council of Agricultural Research(ICAR) -National Institute of Animal Nutrition and Physiology has developed feed supplements (Harit Dhara and Tamarin Plus) to help reduce methane emissions from livestock.

This activity links to the section on 'Sustainable Agriculture'

- The usage of these supplements can potentially lead to the reduction of enteric methane emissions upto 17-20%[87] when incorporated with feedstock.
- These feed supplements as reported by the ICAR cost `6 per kg

7. Solar-powered Vertical Fodder Grow Units (Household Level/Community Level)

A solar-powered, microclimate-controlled, vertical fodder grow unit enables users to harvest fresh fodder daily with less than a bucket of water. Such units will ensure the availability of fodder for livestock even in the event of droughts.

This activity links to the section on 'Sustainable Agriculture'

Case Example/Best Practice:

In the states of Andhra Pradesh, Rajasthan, Karnataka, and Bihar[88]

- Adoption of fodder grow units results in increased availability of green fodder for livestock
- It leads to an increase in farmers' income

86 https://www.nrdc.org/bio/anjali-jaiswal/cool-roofs-community-led-initiatives-four-indian-cities

87 As reported by Indian Council for Agriculture (https://testicar.icar.gov.in/content/icar-nianp-commercializes-anti-methanogenic-feed-supplement-%E2%80%9Charit-dhara%E2%80%9D)

88 https://india.mongabay.com/2024/04/amid-fodder-crisis-hydroponics-offers-new-hope-for-indian-farmers/

8. Panchayat Level Water Budgeting

Water management and 'Water budgeting' for climate-compatible agriculture-based livelihoods

- Calculation of annual/quarterly Water Budget
- Compute 'Water Deficit' and 'Water Surplus' at the village level
- Annual crop production planning based on water availability
- Water audit to account for any wastage

This activity links/adds to the initiatives Sustainable Agriculture and Water Resource Management sections of the Action Plan. This initiative supports multiple interventions like crop selection/planning, farm ponds, improved irrigation methods, water recharge, etc.

Case Example/Best Practice:

7 Gram Panchayats (GP) and the neighboring hamlets, Rangareddy and Nagaurkurnool districts, Telangana[89]

- Current status of water consumption, measures to optimize consumption
- Planning for each agriculture season i.e., Kharif (monsoon), Rabi (winter), and Zaid (summer)

9. Enabling Rural Women Entrepreneurs in Climate Impact Sectors

Creating a women-led grassroots entrepreneurship support ecosystem in villages:

- Women sell clean/green technology-based products
- Women educate communities on the importance of clean-technologies e.g., clean cooking (solar cookstoves), portable Solar water purifiers, energy-efficient light fixtures, etc.
- Providing business expansion loans to women
- Facilitating rural marketing and distribution linkages

Vocational skills development, Training, and capacity building to enable rural women into the entrepreneurship ecosystem.

This initiative intends to strengthen women's role and engagement in clean energy technologies and climate impact sectors. It links to and adds to the Enhancing Livelihoods and Green Entrepreneurship section of the Action Plan.

Case Example/Best Practice

14 districts across 4 states (Maharashtra, Bihar, Gujarat and Tamil Nadu)[90]

Swayam Shishan Prayog (SSP) enabling women as clean energy entrepreneurs and climate change leaders in their rural communities:

- Enabled more than 60,000 rural women entrepreneurs in clean energy, sustainable agriculture, health and nutrition, and safe water and sanitation
- More than 1,000 women entrepreneurs trained in clean-energy technologies and started businesses

89 https://wotr.org/2018/03/31/water-budgeting-in-telangana-the-need-and-the-objective-of-the-campaign/

90 https://unfccc.int/climate-action/momentum-for-change/women-for-results/rural-community-leaders-combatting-climate-change

10. Community Seed Banks

- Community seed banks will promote crop diversification and sustainability in the region while mainstreaming local seed systems, and climate resilience.
- Such seed banks will encourage farmers to grow drought-tolerant and climate-resilient varieties of crops.
- Ensure safety nets for farmers, especially during unfavorable weather conditions and food shortages.

Case Example/Best Practice:

Community Seed Bank, Dangdhora, Jorhat, Assam (UNEP-GEF project)[91]

- Seed bank-associated farmers are trained to harvest, treat, store, and multiply seeds that are of better quality than those available in the local market.
- Seed bank initiatives in the region forward participatory crop improvement and knowledge-sharing strategies.
- Farmers and smallholders are provided with cheaper and easier access to quality seeds; bridging farmers and markets together.
- These seed systems and value chains safeguard both sustainability and food security.

11. Setting up Bio-Resource Centre (BRC)

Bio-inputs Resources Centres (BRCs) prepare and supply bio-inputs to facilitate the adoption of natural farming without individual farmers having to prepare them on their own, as preparation of bio-inputs is a time-consuming and labor-intensive activity.

- The locally prepared products/formulations utilizing biological entities or biologically derived inputs useful for improving soil health, crop growth, pest, or disease management are made available for purchase by farmers.
- BRC serves as a single-stop shop for all bio input needs of farmers in the area.

Case Example/Best Practice:

In the state of Andhra Pradesh[92]

- Contributes to sustainable climate-friendly agriculture
- Helps farmers adapt to climate change because high soil organic matter content makes soils more resilient to floods, droughts, and land degradation processes
- Minimizes risk as a result of stable agro-ecosystems and yields, and lowers production costs

91 https://alliancebioversityciat.org/stories/community-seed-banks-empower-farmers-address-climate-risk-india
92 https://www.apmas.org/pdf/csv/casestudy-1.pdf

7 Linkages to Adaptation, Co-Benefits & Sustainable Development Goals

Management and Rejuvenation of Water Bodies

Suggested Climate Smart Activities	Adaptation Potential and Co-benefits	SDGs and Respective Targets Addressed[93]
a. Rejuvenation and conservation water bodies 	▪ Nature-based Solutions (NbS) enhances coping ability from water scarcity and water stress ▪ Improved groundwater recharge ▪ Enhanced water quality ▪ Increased resilience to disasters like droughts, heatwaves, etc. ▪ Improved agricultural and livestock productivity ▪ Boost to local biodiversity	**SDG 6: Clean Water and Sanitation** ▪ Target 6.1 ▪ Target 6.3 ▪ Target 6.4 ▪ Target 6.5 **SDG 11: Sustainable Cities and Communities** ▪ Target 11.4 **SDG 12: Ensure Sustainable Consumption and Production Patterns** ▪ Target 12.2 **SDG 13: Climate Action** ▪ Target 13.1 ▪ Target 13.2 **SDG 15: Life on Land** ▪ Target 15.1 ▪ Target 15.5
b. Enhancing drainage infrastructure 		
c. Rainwater harvesting (RwH) practices 		

93 Detail list of relevant SDG and respective targets in Annexure V

Enhancing Green Spaces and Biodiversity

Suggested Climate Smart Activities	Adaptation Potential and Co-benefits	SDGs and Respective Targets Addressed
a. Improving green cover  b. Establishing a nursery  c. People's Biodiversity Register 	▪ Natural buffer from climate events/disasters ▪ Regulating the micro-climate will aid in adaptation from heatwaves and heat stress ▪ Health benefits from access to medicinal plants ▪ Nature-based Solutions (NbS) for improved soil stability, water conservation and corresponding agricultural benefits ▪ Improved livestock productivity ▪ Revenue generation from agroforestry, production of natural medicines, etc. ▪ Improved environment and habitat for biodiversity, enhancing ecosystem health	**SDG 11: Sustainable Cities and Communities** ▪ Target 11.7 ▪ Target 11.4 **SDG 12: Ensure Sustainable Consumption and Production Patterns** ▪ Target 12.2 **SDG 13: Climate Action** ▪ Target 13.1 ▪ Target 13.2 **SDG 15: Life on Land** ▪ Target 15.1 ▪ Target 15.5 

Sustainable Agriculture

Suggested Climate Smart Activities	Adaptation Potential and Co-benefits	SDGs and Respective Targets Addressed
a. Drought management for agriculture 	▪ Food security through Eco-DRR[94] approach to increase resilience of crops from droughts, heat impacts, pests etc ▪ Increased agricultural productivity and profit	**SDG 2: Zero Hunger** ▪ Target 2.3 ▪ Target 2.4 ▪ Target 2.a; Article 10.3.e  **SDG 6: Clean Water and Sanitation** ▪ Target 6.4 ▪ Target 13.1 

94 Eco-Disaster Risk Reduction

b. Transition to natural farming 	▪ Improved soil health ▪ Improved water quality due to reduced use of chemical inputs ▪ Improved crop planning and management ▪ Reduced losses and increased productivity of livestock during cold waves and heat waves ▪ Improved air quality and reduced emissions	**SDG 12: Ensure Sustainable Consumption and Production Patterns** ▪ Target 12.2 **SDG 13: Climate Action** ▪ Target 13.2 ▪ Target 13.3 
c. Sustainable livestock management 		

Sustainable Solid Waste Management

Suggested Climate Smart Activities	Adaptation Potential and Co-benefits	SDGs and Respective Targets Addressed
a. Establishing a waste management system 	▪ Reduced waterlogging ▪ Reduction in water and land pollution/ improved sanitation ▪ Good health and a relatively disease-free environment due to 100% waste management and reduction in occurrence of public health risks and epidemics ▪ Livelihood and income generation ▪ Revenue and profit generation ▪ Enhanced inputs for sustainable agriculture	**SDG 3: Good Health and Well being** ▪ Target 3.3 ▪ Target 3.9  **SDG 6: Clean Water and Sanitation** ▪ Target 6.3 ▪ Target 6.8  **SDG 8: Decent Work and Economic Growth** ▪ Target 8.3  **SDG 9: Industries, Innovation and Infrastructure** ▪ Target 9.1  **SDG 12: Ensure Sustainable Consumption and Production Patterns** ▪ Target 12.4 ▪ Target 12.5 ▪ Target 12.8  **SDG 13: Climate Action** ▪ Target 13.1 ▪ Target 13.2 ▪ Target 13.3  **SDG 15: Life on Land** ▪ Target 15.1 
b. Management of organic waste 		
c. Ban on single use plastics 		
d. Enhancing sanitation infrastructure 		

Access to Clean, Sustainable, Affordable and Reliable Energy

Suggested Climate Smart Activities	Adaptation Potential and Co-benefits	SDGs and Respective Targets Addressed
a. Solar Rooftop Installation 	▪ Energy security ▪ Thermal comfort ▪ Enhanced livelihood options ▪ Additional revenue generation ▪ Provides relief from high temperatures/sun exposure, thus resulting in yield stability and boost in productivity ▪ Decline in toxic emissions/ local air pollution ▪ Economic benefits after pay-back period ▪ Reduction in indoor air pollution ▪ Improvement of health, especially of women ▪ Eliminates drudgery/physical labour of fuelwood collection ▪ Enhanced ability to cope with grid failures during disasters	**SDG 7: Affordable and Clean Energy** ▪ Target 7.1 ▪ Target 7.2 ▪ Target 7.3 ▪ Target 7.a ▪ Target 7.b **SDG 9: Industries, Innovation and Infrastructure** ▪ Target 9.1 **SDG 13: Climate Action** ▪ Target 13.2 ▪ Target 13.3
b. Agro-photovoltaics 		
c. Solar Pumps 		
d. Clean cooking 		
e. Energy efficient fixtures 		
f. Solar Streetlights 		

Sustainable and Enhanced Mobility

Suggested Climate Smart Activities	Adaptation Potential and Co-benefits	SDGs and Respective Targets Addressed
a. Promoting adoption of e-vehicles & e-tractors 	▪ Decline in local air pollution leading improved human and ecosystem health ▪ Improved accessibility for at-risk and vulnerable people ▪ Additional revenue generation ▪ Enhanced last-mile connectivity of goods and services ▪ Improved resilience through strengthening road infrastructure with co-benefits like reduced waterlogging	**SDG 7: Affordable & Clean Energy** ▪ Target 7.2 **SDG 11: Sustainable Cities and Communities** ▪ Target 11.2 **SDG 9: Industries, Innovation and Infrastructure** ▪ Target 9.1 **SDG 13: Climate Action** ▪ Target 13.2 ▪ Target 13.3 
b. Enhancing Intermediate Public Transport (IPT) 		

Enhancing Livelihoods and Green Entrepreneurship

Suggested Climate Smart Activities	Adaptation Potential and Co-benefits	SDGs and Respective Targets Addressed
a. Engage already Existing SHGs in Manufacturing of Sustainable Products 	▪ Enhanced livelihood options through locally sourced raw material (rice husk) ▪ Reduction in water and land pollution ▪ Enhanced inputs for sustainable agriculture	**SDG 5: Achieve Gender Equality and Empower All Women and Girls** ▪ Target 5.5
b. Composting and Selling of Organic Waste as Fertiliser 		

c. Facility to Hire E-goods Carriers and E-tractors	▪ Good health and a relatively disease-free environment due to 100% waste management and reduction in occurrence of public health risks and epidemics ▪ Health benefits from access to medicinal plants ▪ Revenue generation from agro-forestry, production of natural medicines, etc. ▪ Improved environment and habitat for biodiversity, enhancing ecosystem health ▪ Decline in local air pollution leading to improved human and ecosystem health ▪ Enhanced last-mile connectivity of goods and services	**SDG 8: Decent Work and Economic Growth** ▪ Target 8.3 **SDG 12: Ensure Sustainable Consumption and Production Patterns** ▪ Target 12.2 ▪ Target 12.4 ▪ Target 12.5 ▪ Target 12.8 **SDG 13: Climate Action** ▪ Target 13.1 ▪ Target 13.2 ▪ Target 13.3
d. Improving Livelihoods through Use of Solar Powered Cold Storage		
e. *Arogya Van* for Production and Sale of Natural Medicines and Supplements		
f. O&M of Various RE Installations (Solar and Bio-gas)		

8 Way Forward

The proposed recommendations on implementation will help to not only reduce Greenhouse Gas (GHG) emissions of Bankota but also to achieve energy, food and water security, thereby, making the Gram Panchayat climate smart, resilient and sustainable. This will foster a holistic and sustainable development of the GP to meet the aspirations of its residents. Additionally, these recommendations would improve quality of life while promoting a harmonious co-existence with nature. This Climate Smart Action Plan for Bankota will make it 'Aatma Nirbhar' through various aspects like, reduction of expenditure on energy, farming inputs, water, etc. and will open new avenues for economic development.

Further, with the implementation of proposed interventions, Bankota would also contribute to the State's vision and targets on climate action as envisaged in the UP State Action Plan On Climate Change II, 2022, which in turn, would add to the country's endeavours to address climate change meeting the contributions listed in the NDC, 2015 and its updated version, 2022 and also meet the Sustainable Development Goals by 2030.

Addressing climate issues requires tailor-made solutions at the local level, which can only be successful with the availability of adequate climate finance and other means of implementation. This can be achieved by integrating the climate action both mitigation and adaptation in to ongoing activities as envisaged in the Gram Panchayat development Plan supported under State and Central schemes and mobilising additional financial resources. This would entail enhanced collaboration and cooperation between all relevant stakeholders: community, government administration, elected representatives and private sector. Post implementation of the Action Plan, continued action in the form of efficient management of the new infrastructure/technology will be the key in ensuring Bankota becoming a model climate smart gram panchayat. The success of the present plan will possibly influence other Gram Panchayats to follow the process to make themselves smart, resilient and sustainable. To achieve this vision, it will be crucial to promote a sense of community ownership and behavioural change for adoption of a sustainable lifestyle, along the lines of LiFE Mission as envisioned by the Hon'ble Prime Minister Shri Narendra Modi.

9 Annexures

Annexure I: Background and Methodology

Background

The State of Uttar Pradesh (UP) is making rapid strides towards climate action. Under the visionary and inspirational leadership of the Hon'ble Chief Minister, Shri Yogi Adityanath. The State has initiated a wide-range of climate actions across different levels of governance. One such initiative is to develop action plans for 'Climate Smart Gram Panchayats.' This concept was envisaged by the Chief Minister of Uttar Pradesh in June, 2022. To take this work ahead, a rapid multi-criteria assessment was conducted to identify climate-friendly Gram Panchayats in 39 vulnerable districts[95] of UP. The selected Gram Panchayats were announced and several of these were felicitated during the 'Conference of Panchayats' (COP) held on 5th June, 2022.

The Climate Smart Gram Panchayat Action Plan[96] for Bankota has been developed by the Department of Environment, Forest and Climate Change, Government of UP in collaboration with Vasudha Foundation, and Gorakhpur Environmental Action Group. The action plan aims to provide a customised blueprint for mainstreaming climate action at the Gram Panchayat level. This in turn would strengthen localised climate initiatives to not only build climate resilience but also reduce emissions with the aim of becoming zero carbon/carbon neutral by 2030.

The participatory approach adopted in developing this action plan reinforces the concept of bottom-up planning. The key recommendations provided in this action plan can be converted into individual pilot projects that can be funded through a range of financing options, such as CSR funds, existing State and Central Government Programmes, innovative Public-Private Partnerships, carbon finance, and private investments.

To make this feasible, the action plan also has an outline for forging Panchayat-Private-Partnership (PPP) and enhanced collaboration and cooperation between state actors and non-state actors to ensure effective implementation of this action plan.

Methodology

This report comprises of the main Climate Smart Gram Panchayat Action Plan as well as the inputs received from field in the form of filled questionnaire, the HRVCA report, social and resource map of the Gram Panchayat enclosed as annexures.

To develop the Climate Smart Gram Panchayat Action Plan, the following steps were undertaken:

- *Preparation of Survey Questionnaire*: to understand the ground situation and develop a baseline scenario of the Gram Panchayat a questionnaire was developed with inputs from key stakeholders and sectoral experts. The questionnaire covered various aspects such as demography, socio-economic

95 39 highly vulnerable districts of UP were identified from the State Action Plan on Climate Change 2.0 of UP and the Scoping Assessment for Climate Change Adaptation Planning in Uttar Pradesh by DoEFCC, GoUP

96 This document comprises of the main Climate Smart Gram Panchayat Action Plan and includes the following as annexures: detailed methodology; filled questionnaire; the Hazard, Risk, Vulnerability and Capacity Assessment (HRVCA) report, and the social and resources map of the Gram Panchayat.

indicators, climate variability, climate perception (past 5 years), energy, agriculture and livestock, land resources, sanitation, and health. The survey also aimed to understand the penetration of Central and State government schemes in the Gram Panchayat.

- *Stakeholder Consultation and Capacity Building*: Consultations and capacity building workshops were conducted for local NGO partners, Gram Pradhans, Panchayat Secretaries. The stakeholders were briefed about the objective and components of the Climate Smart Gram Panchayat Action Plan, the process of development of these action plans and their individual roles in the same.
- Additionally, NGO partners were also given a training on key climate change concepts, the surveying techniques to be adopted and the questionnaire developed for focus group discussions.
- *Field survey:* To ensure maximum participation from the community, a few rounds of Gram Sabha and focus group discussions were organised to collect primary data.
  - » Field survey included a transect walk of the GP to develop the social and resource maps of the GP.
  - » A Hazard, Risk, Vulnerability and Capacity Assessment (HRVCA) was also carried out to understand the various issues faced by the GP.
  - » Focus Group Discussions were held to identify key climate change-related issues faced by Bankota GP as well as identify the development priorities of the GP.
- Based on the inputs received, the plan was developed and baseline assessments were conducted for the Gram Panchayat. This included identification of climate-smart activities that not only address the environmental and climatic issues that have been identified but also take into account the prevailing agro-climatic characteristics of the GP.
- Information gaps were identified and addressed through multiple rounds of one-on-one discussions with the Gram Pradhan, community and Panchayat Secretary.
- The draft plan was presented to the Gram Panchayat for review.
- Post accommodating required updates based on inputs from the Gram Panchayat, the action plan was finalised and presented to the GP for endorsement.

Annexure II: Questionnaire

उत्तरप्रदेश क्लाइमेट स्मार्ट ग्रामपंचायत की सर्वेप्रश्नावली

ग्रामपंचायत : बनकोटा विकासखण्ड : बजीरगंज जनपद :बदायूं

I. गाँव की रुपरेखा

		विवरण	संख्या (सूचना का स्रोत–समुदाय के सदस्य)
1		राजस्वगाँव की संख्या	**1**
2		टोलों की संख्या	**2** गर्रुइया निनमा
3	a	कुलजनसंख्या	**7566**
	b	कुलपुरुषों की जनसंख्या	**4158**
	c	कुलमहिलाओं की जनसंख्या	**3408**
	d	विकलांगजन की जनसंख्या	**30**
	e	कुलबच्चों की जनसंख्या	**2168**
	f	वरिष्ठनागरिक (60 वर्ष से अधिकआयु वर्ग)	**350**
4		कुलपरिवार की संख्या	**1177**
	a	गरीबीरेखा से नीचे जीवन यापनकरनेवालेपरिवार की संख्या	**133**
5		कुलभोगौलिक क्षेत्रफल	**818Hct.**
6	a	साक्षरतादर	**80%**
7	a	पक्का घरों की संख्या	**1073**
	b	कच्चा घरों की संख्या (मुख्य रूप से उपयोग की गईसामग्री का उल्लेख करें)	**104**मिटटी एवं बांसफूस से निर्मित

II. सामाजिक आर्थिक

8	ग्रामपंचायतमेंकेवलकृषि (प्रकार) परआश्रितपरिवार	कुलपरिवारों की संख्या
	निजीभूमि/स्वयं की भूमि	1090
	किराए की भूमि (हुण्डा)	87
	अनुबंध खेती	105
	दिहाड़ीमजदूर	700
	अन्य व्यवस्था (रेहन, अधिया आदि)	Nil
	अन्य सूचनाएं/जानकारी (एक से अधिककृषिगतिविधि में शामिलपरिवार, उल्लेख करें)	Nil
9	**ग्राम पंचायत में आय के स्रोत**	**कुलपरिवारों की संख्या**
	सेवा क्षेत्र (उदाहरणः अध्यापन, बैंक, सरकारीनौकरी आदि)	80
	कुटीरउद्योग	Nil
	कृषि	700
	कला/हस्तकला	Nil
	पशुपालन	450
	व्यवसाय (स्थानीय दुकान)	30
	व्यवसाय/उद्यम	Nil
	दैनिक/दिहाड़ीमजदूर (अकृषिगत)	300
	अन्य	Nil

10		पलायन		हां	नहीं
	a	क्यापिछलेपांचवर्षोंमेंआप के ग्रामपंचायत से ग्रामीणों ने पलायनकियाहै?		☑	☐
	b	पलायनकरनेवालेस्थान	पिछलेपांचवर्षोंमेंपलायनकरनेवालेपरिवार/व्यक्तिगत की संख्या		पलायन के मुख्य कारण
		अन्य गांव	Nil		रोजगारहेतु
		निकट के शहर	Nil		
		राज्य के प्रमुख शहर	Nil		
		देश के प्रमुख महानगर	20परिवार		
	c	क्यापिछलेपांचवर्षोंमेंआप के ग्रामपंचायतमेंपरिवार/व्यक्ति ने प्रवासकिए है?		हां	नहीं
				☑	☐
	d	पिछलेपांचवर्षोंमेंआप केग्रामपंचायतमेंकित	120 परिवार कोविड में शहर से आकर बनकोटाग्रामपंचायतमें बस गये		

		नेपरिवारप्रवासकिए हैं? मुख्य कारणस्पष्टकरें।	

11		महिलाओं की स्थिति	
	a	महिलाप्रमुख परिवारों की संख्या (आय का मुख्य स्रोत– महिला)	268
	b	खेतीमेंकार्यरतमहिला	कुलसंख्या
		निजीभूमि/स्वयं की भूमि	102
		किराएकी भूमि/हुण्डा	Nil
		अनुबंध खेती	Nil
		दिहाड़ीमजदूर	Nil
		अन्य व्यवस्था	166
		अन्य सूचनाएं/जानकारी (एक से अधिककृषिगतिविधि मेंसंलग्नमहिलाएं, उल्लेख करें)	थ्नल
	c	नौकरी/अन्य क्षेत्र मेंकार्यरतमहिलाएं	कुलसंख्या
		सेवा क्षेत्र (उदाहरणः अध्यापन, बैंक, सरकारीनौकरी आदि)	10
		कुटीरउद्योग	Nil
		कृषि	Nil
		कला/हस्तकला	Nil
		पशुपालन	300 डेयरी व्यवसाय से जुड़ीहै।
		व्यवसाय (स्थानीय दुकान)	2
		दैनिक/दिहाड़ीमजदूर (अकृषिगत)	150
		अन्य	Nil

12	स्वयं सहायता समूहों				
	स्वयंसहायतासमूह का नाम	सदस्यों की संख्या	अपनायीगईगतिविधियाँ	मासिकबचत (रु0)	बैंकों से जुड़ाव/अजुड़ाव
	राधेकृष्णा स्वंय सहायतासमूह	11	पशुपालन	2600	अभीबैंक से जुड़ावहै।
	लक्ष्मी समूह	11	पशुपालन	7000	अभीबैंक से जुड़ावहै।
	भोलेबाबमहिलासमूह	11	कृषिकार्य	2000	अभीबैंक से जुड़ावहै।
	गणेषमहिलासमूह	11	पशुपालन	4200	अभीबैंक से जुड़ावहै।
	विश्वासमहिलासमूह	11	पशुपालन	4200	अभीबैंक से जुड़ावहै।
	गोपालमहिलासमूह	11	कृषिकार्य	3000	अभीबैंक से जुड़ावहै।
	शिवमहिलासमूह	12	पशुपालन	5000	अभीबैंक से जुड़ावहै।
	सीताराममहिलासमूह	11	कृषिकार्य	4000	अभीबैंक से जुड़ावहै।
	संतोषीमातामहिलासमूह	11	कृषिकार्य	4200	अभीबैंक से जुड़ावहै।

13	कृषक उत्पादक संगठन (एफ0पी0ओ0)					
	एफ0पी0ओ0 का नाम	क्या इस संगठन की प्रमुख महिलाहैं?	प्रत्येक एफ0पी0ओ0 मेंसदस्यों की संख्या	एफ0पी0ओ0 से प्राप्तवार्षिकराजस्व/बचत	कृषिउत्पाद	पोस्टहार्वेस्ट की गतिविधियां/गतिविधियों का क्षेत्र
	Nil	☐				
		☐				
		☐				
		☐				
		☐				

14	अन्य समुदाय आधारित संगठन/					
	सामाजिक संगठन/ समितियों के नाम	क्या महिला प्रमुख संगठन/समितिहैं?	सदस्यों की संख्या	प्राप्त वार्षिक राजस्व/बचत	उत्पाद/सेवा	विपणन/लक्षित उपभोगकर्ता
	Nil	☐				
		☐				
		☐				
		☐				
		☐				
		☐				
		☐				
		☐				

15		योजनाएं					
	A	योजना के नाम	पंजीकृत लाभार्थी की संख्या	लाभ प्राप्त लाभार्थियों की संख्या	विगत वर्ष ग्रामपंचायत में प्राप्त कुल भगतान (रू0)	अन्य कोईबकाया (रू0)	की गईगतिविधियाँ/कार्य
		मनरेगा	1076	497	1964112		आरसीसीनालानिर्माण, खेलकूदमैदान, इंटरलाकिंग, मिटटीकार्य
		प्रधानमंत्री गरीबकल्याणअन्न योजना/एन.एफ.एस.ए.	997	997			
		प्रधानमंत्री उज्जवला योजना	260	260			गैस चूल्हा एवंसिलेन्डर
		प्रधानमंत्री कृषिसिंचाई योजना	Nil				
		प्रधानमंत्री कुसुम योजना	Nil				
	B	अन्य योजनाएं	Nil				

		ग्रामउज्जवला योजना	Nil				
		ऊर्जादक्षता योजना	Nil				
		प्रधानमंत्री रोजगारसृजनकार्यक्रम	Nil				
		प्रधानमंत्री आवास योजना	133	1	40000		
		सार्वजनिकवितरणप्रणाली (पी0डी0एस0)	997	997			5किलो प्रति युनिट 35 किलोप्रतिकार्डअन्तयोदि
		कम्प्यूटरप्रषिक्षणकार्यक्रम	0				
		उत्तरप्रदेषकौशलविकासमिषन	0				
		राष्ट्रीय कौषलविकास योजना (RKVY)	0				
		मौसमआधारितफसलबीमा	0				
		प्रधानमंत्री फसलबीमा योजना (PMFBY)	20				फसलबीमाहैलेकिनलाभन हींमिलताहै।
		मृदास्वास्थ्य कार्ड	0				
		किसानक्रेडिटकार्ड	1200				
		स्वच्छभारतमिषन	789	750	90लाख		शौचालय बन गये
		सौरसिंचाईपम्प योजना	0	0			
		नई/नवीनभारतीय बायोगैस व कार्बनिक खादकार्यक्रम	0	0			
		विकेन्द्रितअनाज क्रय केन्द्र योजना	Nil				
		गोवर्धन योजना	0				
		जल पुनर्भरण योजना	0				
		रेनवाटरहार्वेस्टिंग	1				
		समन्वितवाटरशेडविकासकार्यक्रम	0				
		अन्य वाटरशेडविकास योजनाएं	0				
		अन्य (एकजिला–एक उत्पाद, मेकइनइण्डिया, अन्य)	0				

		उद्यमितातासहायतित योजनाएंआदि	**0**				
		शोकफिट	**18**	18	288000		

16	**सक्रिय बैंक खाताधारकोंकीसंख्या**	**2000**
17	**ई–बैंकिंग/डिजीटलभुगतान एप/यू.पी.आई आदिसे भुगतानकरनेवाले खाताधारकों की संख्या**	**1200**

8	**निकटकृषिबाजार/क्रय केन्द्र/सरकारीकेंद्र**	**क्याग्रामपंचायत द्वाराबाजार/क्रय केन्द्र का उपयोगहोताहै**		**यदि नही, तोबाजार/केन्द्र का उपयोगक्यों नही कियाजाता**	**उत्पादित फसल(कु0)**	**बिक्रीहुईफसल (कु0)**	**ग्रामपंचायत से दूरी(यदि ग्रामपंचायत से दूर है) (कि0मी0)**
		हां	**नहीं**				
	नवीनमण्डीसमितिबजीरगंज	☑	☐		धान	3500 QTL	6 KM
	साधनसहकारीसमितिबनकोटT	☑	☐		गेहूं	2700 QTL	0 KM
		☐	☐				
		☐	☐				

19		**शिक्षा (केवल ग्रामपंचायत में)**				
		प्रकार/स्तर	**उपलब्धछत का क्षेत्रफल (वर्ग मी0)**	**कुलनामांकितविद्यार्थियों की संख्या**	**विगतवर्षमेंकुलड्रापआऊटविद्यार्थियों की संख्या**	**ड्रापआऊट के मुख्यकारण(स्वास्थ्य (1), पहुँच/उपलब्धता–(2), आर्थिक समस्या–(3), अन्य–(4) उल्लेख करें)**
	a	**प्राथमिकविद्यालय**				
		बनकोटा	400 M^2	201	20	1
		गर्रुइया	222M^2	177	0	0
		निनमा	111 M^2	91	5	1
	b	**जू0 हाईस्कूल**				

		गर्रुइया	333 M^2	195	0	
	c	**हाईस्कूल**				
		जनताहाईस-कूल	450 M^2	150	0	0
	d	**अन्य संस्थान**				
		संस्कृतइण्टरकॉलेज	200 M^2	100	0	0
		केजीएनडिग्रीकॉलेज	2000 M^2	135	0	0d

20	कौशलविकास/व्यवसायिकप्रशिक्षण/पुनः कौशलसंस्थान(केवल ग्रामपंचायत में)	उपलब्ध छत का क्षेत्रफल (वर्ग मी0)	संस्थान के प्रकार (सरकारी 1, निजी 2)	नामांकितव्यक्तियों की संख्या	नामांकितव्यक्तियों की आयु
	Nil				

21	राज्य/राष्ट्रीय राजमार्ग की उपलब्धता			
	राजमार्ग का नाम	राज्यमार्ग 1, राष्ट्रीय राजमार्ग 2	ग्रामपंचायत से दूरी	सम्पर्कमार्ग की स्थितिअच्छा (1), खराब (2), घटिया (3), सबसे घटिया (4)
	बदायूं चंदौसी रोड	1	0 KM	2

	गंगा एक्प्रेसवे निर्माधीन	2	100 M	2

III. भूमिसंसाधनोंसंबंधितसूचनाएं/जानकारी

22		वनभूमि का विवरण	
	A	वन का क्षेत्र	Nil
	B	वनविभाग द्वाराअधिसूचित क्षेत्र	Nil
	C	सार्वजनिकउपयोगहेतुउपलब्ध वन क्षेत्र	Nil
	D	कितने क्षेत्र परअतिक्रमणहै?	Nil
	E	विगतपांचवर्षोंमेंकोईवनउन्मूलन/वनकटाई की गतिविधियां	Nil
	F	अनुमानितवनउन्मूलन/वनकटाई का क्षेत्रफल(एकड़)	Nil

23		अन्य भूमि का वर्गीकरण			
	A	ग्रामपंचायत के पासग्रामसभा की कितनीभूमिउपलब्ध है?	15.25 Ac.		
	B	कितनीभूमिपरअतिक्रमणहै? (एकड़)	0		
	c	ग्रामपंचायतमें खननगतिविधियां	हां ☐	नहीं ☑	आच्छादित क्षेत्रफल
		खनन के प्रकार बालू खनन 1, खनिज खनन–(उल्लेख करें) 2, अन्य (उल्लेख करें) 3	Nil		
		अतिरिक्तसूचनाएं	Nil		

24		जल निकाय क्षेत्र		
		विवरण	हां	नहीं
	a	क्याआप के ग्रामपंचायतमें जल निकाय क्षेत्र है?	☐	☑
	b	ग्रामपंचायतमेंकुल जल निकाय क्षेत्रों की संख्या	0	
	c	क्या जल निकाय क्षेत्र मेंअतिक्रमणहै?	☐	☐

	D	जल निकाय क्षेत्र मेंअतिक्रमण कब से है?	
	E	क्या जल निकाय क्षेत्र के आस–पास के भूमिपरअतिक्रमणकियागयाहै?	

25		**जल आपूर्ति**	
	a	**ग्रामपंचायतमेंघरोंहेतु जल आपूर्ति का मुख्य स्रोतक्याहै?** नहर (1) वर्षा जल–(2) भूमिगत जल–(3) तालाब/झील–(4) अन्य– (5)	भूमिगत जल–(3),
	b	**क्याउपरोक्त जल आपूर्ति के स्रोतमौसमी या बारहमासीहै?**	बारहमासी
	c	**घरोंमें जल आपूर्तिकैसेहोतीहै?** पाइपजलापूर्ति (1) ग्रामपंचायतमेंसामान्य संग्रहकेन्द्र (2) पानीटंकी (3) महिलाओं/बच्चों द्वारादूर से लायागया (4) हैण्डपम्प (5) ऊँचासतहीजलाशय (6) कूंआ (7) अन्य (8), उल्लेखितकरें। अगर 4 है, तोकितनीदूर से लायाजारहाहै?	हैण्डपम्प (5)
	d	कितने घरोंमेंजलापूर्तिपाइप से है?	Nil
	e	क्यापानी का बहाव/प्रवाहदर कम, अधिक या संतोषजनकहै?	Nil
	f	पइपजलापूर्ति की नियमितता 24×7 घण्टे(1) काफीनियमित (2) अनियमित (3)	Nil
	g	**ग्रामपंचायतमेंकृषिसिंचाईहेतु जल आपूर्ति का मुख्य स्रोतक्याहै?**	वर्षा जल (2), (नलकूप (3A), व्यक्तिगतबोरिंग (7)

		नहर (1) वर्षा जल (2) भूमिगत जल – (नलकूप (3A), कूआ (3B) तालाब/झील (4) पानीटैंक (5) नदी (6) अन्य (7)	
	h	**क्याउपरोक्त जल आपूर्तिस्रोतमौसमी या बारहमासीहै?**	व्यक्तिगत बोरिंग का प्रयोग फसल की आवष्यकतानुसारएवंवर्षाजलमौसमीहै।
	i	क्याजलापूर्ति का बहाव/प्रवाहदर कम/अधिक या संतोषजनकहै?	
	j	अतिरिक्तजानकारी (उदाहरण : क्या घरेलू, कृषि व संबंधितगतिविधियों, उद्योगोंआदिके लिए जल आपूर्तिपर्याप्त है) क्याविगतवर्षोंमेंभूजल, नदी या नहर से जल की उपलब्धता बढ़ी/घटी या सूख गया? क्यासूखे या गर्मी के मौसममेंपानी की टंकियों का उपयोग बढ़ जाताहै?	घरेलूप्रयोगहेतुपर्याप्तहै एवंकृषिआदिहेतु जल आपूर्तिअपर्याप्तहै। निल गर्मी के मौसममेंपानीका स्तरनीचेचलाजाताहै।

IV. जलवायु की धारणा

तापमान व वर्षामेंप्रमुख परिवर्तन/बदलाव					
26					
	a	गर्मी के माहमेंदेखा गया			
	b	गर्मी के तापमानमें देखे गए बदलाव (पिछले पांच वर्षों में)	गर्मदिनोंमेंवृद्धि	गर्मदिनोंमें कमी	गर्मदिनोंमेंकोईपरिवर्तन नहीं
			☑	☐	☐
	c	दिनों की संख्या	30 Days		
	d	अन्य सूचनाएं (गर्मी माहमेंकोई परिवर्तन)			
27					
	a	सर्दी के माहमेंमहसूसकियागया			
	b	सर्दियों के तापमानमेंकोईपरिवर्तनपायागया (विगत पांचवर्षों में)	ठण्ड दिनोंमेंवृद्धि	ठण्ड दिनोंमें कमी	ठण्ड दिनोंमेंकोईपरिवर्तननहीं
			☐	☑	☐
	c	दिनों की संख्या		30 Days	
	d	अन्य सूचनाएं (सर्दी माहमेंकोई परिवर्तन)			
28					
	a	मानसूनमाहमेंमहसूसकियागया	28 Days		
	b	मानसून ऋतु की वर्षामेंकोईपरिवर्तनदेखा गया (विगत पांचवर्षों में)	वर्षा के दिनोंमेंवृद्धि	वर्षा के दिनोंमें कमी	वर्षा के दिनोंमेंकोईपरिवर्तननहीं
			☐	☑	☐
	c	दिनों की संख्या		28 Days	
	d	अन्य सूचनाएं (मानसून माहमेंकोई परिवर्तन)	मानसूनपहले से 10–15 दिनदेरी से आताहै।		
29					
	a	क्यागैरमानसून ऋतु की वर्षामेंपरिवर्तनहुआहै? (विगत पांचवर्षों में)	वर्षा के दिनोंमेंवृद्धि	वर्षा के दिनोंमें कमी	वर्षा के दिनोंमेंकोईपरिवर्तननहीं
			☐	☑	☐
	b	ग्रीष्म ऋतु की वर्षामेंदेखेगयेपरिवर्तन	वर्षादिनोंमेंवृद्धि	वर्षादिनोंमें कमी	वर्षा के दिनोंमेंकोईपरिवर्तननहीं
			☐	☑	☐
	c	दिनों की संख्या		10 Days	

	d	शरद ऋतु की वर्षामेंदेखेगयेपरिवर्तन	वर्षा के दिनोंमेंवृद्धि	वर्षा के दिनोंमें कमी	वर्षा के दिनोंमेंकोईपरिवर्तननहीं
			☐	☑	☐
	e	दिनों की संख्या		4-5 Days	
	f	अन्य सूचनाए / जानकारी			

चरममौसमकी घटनाएं

30		**सूखा**					
	a	सूखे की घटना	प्रथमवर्ष(2022)	द्वितीय वर्ष (2021)	तृतीय वर्ष (2020)	चतुर्थवर्ष(2019)	पंचमवर्ष (2018)
			✓ ☐	✓ ☐	☐	☐	✓ ☐
	b	किसमाहमेंसूखा देखा गया	Jun - July	Jun - July	नही	न्ही	June- July
	c	सूखे का प्रबन्धनकैसेकियागया (सरकारी सहायता, निजीसहायता, कुएं खोदा आदि)	घरेलूस्तरपरप्रबन्धन कोई प्रबंधन नहीं			कृषिस्तरपरप्रबन्धन सिंचाई हेतु अतिरिक्त बोरिंग किये गये।	
	d	सूखे की आवृत्ति : सूखे की घटना (पिछले पांचवर्षों में)	वृद्धि	कमी	कोईपरिवर्तन नहीं		
			☑	☐	☐		
	e	अतिरिक्तसूचनाकोईपुरानीप्रमुख घटना–1, स्वास्थ्य पर प्रभाव–2	2014 मेंसूखा से फसलों के उत्पादनमेंलगभग 60 प्रतिषतहानिहुई।				
31		**बाढ़**					
		बाढ़ की घटना बाढ़ क्षेत्र नहींहै	प्रथमवर्ष (2022)	द्वितीय वर्ष (2021)	तृतीय वर्ष (2020)	चतुर्थवर्ष (2019)	पंचमवर्ष (2018)
			☐	☐	☐	☐	☐
	b	किसमाहमें बाढ़ देखा गया	नही	नही	नही	न्ही	नही
	c	बाढ़ का प्रबन्धनकैसेकियागया (सरकारी सहायता, निजीसहायता आदि)	घरेलूस्तरपरप्रबन्धन ☐			कृषिस्तरपरप्रबन्धन ☐	
	d	बाढ़ की आवृत्ति : बाढ़ की घटना (पिछले पांचवर्षों में)	वृद्धि	कमी	कोईपरिवर्तन नहीं		
			☐	☐	☐		
	e	अतिरिक्तसूचनाकोईपुरानीप्रमुख घटना–1, स्वास्थ्य पर प्रभाव–2					
32		**भूस्खलन**					
	a	भूस्खलन की घटना भूस्खलन क्षेत्र नहींहै	प्रथमवर्ष (2022)	द्वितीय वर्ष (2021)	तृतीय वर्ष (2020)	चतुर्थवर्ष (2019)	पंचमवर्ष (2018)
			☐	☐	☐	☐	☐
	b	किसमाहमेंभूस्खलन देखीगई	नही	नही	नही	न्ही	नही
	c	भूस्खलन का प्रबन्धनकैसेकियागया (सरकारी सहायता, निजीसहायता आदि)	घरेलूस्तरपरप्रबन्धन			कृषिस्तरपरप्रबन्धन	
	d	भूस्खलन की आवृत्ति : भूस्खलन की घटना (पिछले पांचवर्षों में)	वृद्धि	कमी	कोईपरिवर्तन नहीं		
			☐	☐	☐		

	e	अतिरिक्तसूचनाकोईपुरानीप्रमुख घटना–1, स्वास्थ्य पर प्रभाव–2					
33		**ओलावृष्टि**					
	a	ओलावृष्टिकी घटना	प्रथमवर्ष (2022)	द्वितीय वर्ष (2021)	तृतीय वर्ष (2020)	चतुर्थवर्ष (2019)	पंचमवर्ष (2018)
			✓ ☐	✓ ☐	☐	☐	☐
	b	किसमाहमेंओलावृष्टिहुई	फरवरी	मार्च	नही	न्ही	नही
	c	ओलावृष्टि का प्रबन्धनकैसेकियागया (सरकारी सहायता, निजीसहायता आदि)	घरेलूस्तरपरप्रबन्धन ☑			कृषिस्तरपरप्रबन्धन	
	d	ओलावृष्टि की आवृत्ति : ओलावृष्टिकी घटना (पिछले पांचवर्षों में)	वृद्धि	क्मी	कोईपरिवर्तन नहीं		
			☐	☑	☐		
34		**फसलों के कीट/बीमारी**					
	a	कीट/बीमारीकी घटनाक्रम	प्रथमवर्ष (2022)	द्वितीय वर्ष (2021)	तृतीय वर्ष (2020)	चतुर्थवर्ष (2019)	पंचमवर्ष (2018)
			✓ ☐	✓ ☐	☐	☐	☐
	b	किसमाहमेंकीट/बीमारीकोदेखा गया?	जनवरी फरवरी मार्च, जुलाई अगस्त सितम्बर अक्टूबर नवम्बर दिसम्बर	जनवरी फरवरी मार्च, जुलाई अगस्त सितम्बर अक्टूबर नवम्बर दिसम्बर	जनवरीफरवरी मार्च, जुलाईअगस्तसितम्बरअक्टूबरनवम्बरदिसम्बर	जनवरीफरवरी मार्च, जुलाईअगस्तसितम्बरअक्टूबरनवम्बरदिसम्बर	जनवरीफरवरी मार्च, जुलाईअगस्तसितम्बरअक्टूबरनवम्बरदिसम्बर
		किसप्रकार की कीट/बीमारीकोदेखा गया?	माहू, गंदीकीट, झुलसा, फलछेदक, एव विषाणुजनित रोग	माहू, गंदीकीट, झुलसा, फलछेदक, एवंविषाणुजनि तरोग	माहू, गंदीकीट, झुलसा, फलछेदक, एवंविषाणुजनि तरोग	माहू, गंदीकीट, झुलसा, फलछेदक, एवंविषाणुजनि तरोग	माहू, गंदीकीट, झुलसा, फलछेदक, एवंविषाणुजनि तरोग
	c	कीट/बीमारी का प्रबन्धनकैसेकियागया? (सरकारी सहायता, निजीसहायता आदि)	कीटनाषक का छिड़काव निजी				
	d	कीट/बीमारी की आवृत्ति : कीटबीमारीका घटनाक्रम (पिछले पांचवर्षों में)	वृद्धि	कमी	कोईपरिवर्तन नहीं		
			☑	☐	☐		
		अतिरिक्तजानकारी/सूचनाएं					

35	**ग्रामपंचायतमेंआपदा की तैयारी**		
		ग्रामपंचायतस्तरपरक्याआपदाप्रबन्धन/तैयारी के उपाय उपलब्ध है?	**क्याग्रामीणोंतकइसकीपहुँच/उपलब्धताहै?**

	आपदातैयारी के उपाय	हां	न्हीं	हां	नहीं
	ग्रामआपदाप्रबन्धन योजना	☐	☑	☐	☑
	ग्रामआपदाप्रबन्धनसमिति	☐	☑	☐	☑
	पूर्वचेतावनीप्रणाली / मौसमीचेताव नीप्रणाली / कृषिचेतावनीप्रणाली	☐	☑	☐	☑
	आपातकालअनाजबैंक	☐	☑	☐	☑
	अन्य	☐	☑	☐	☑

36		अनाजभण्डारण	
	a	ग्रामपंचायत के आपातकालिन खाद्य / अनाजबैंकमेंकिसप्रकार का भोजनभण्डारितकियाजाताहै?	
		अनाज (विवरण दें)	Nil
		ेल	Nil
		चीनी	Nil
		अन्य खाद्य पदार्थ–उल्लेख करें	Nil
	b	क्याग्रामपंचायतमें शीतगृहहै, अगरहैतोउसकी क्षमताक्याहै?	Nil

37	ग्रामपंचायतमेंमौसम की चेतावनी, पूर्वचेतावनीप्रणाली, कृषिआधारितचेतावनी के लिए उपलब्ध जानकारी के स्रोत	
	स्थानीय कृषिअधिकारी	Nill
	समाचारपत्र / समाचार / रेडियो	☑
	मोबाईलफोन / एप	☑
	मौखिक	☑
	कृषिविज्ञानकेन्द्र / कृषिज्ञानकेन्द्र	Nil
	पशुपालनविभाग	Nil
	उद्यानविभाग	Nil
	अन्य	Nil

	कृषि एवंसंबंधितगतिविधियोंपरप्रभाव (विगत पांचवर्षों में)
38	फसलहानि

	a	घटना का वर्ष	हानि की ऋतु/मौसम खरीफ (1) रबी(2) जायद/अन्य ऋतु (3)	फसल का नाम	हानि के कारण रोग, चरम, घटनाक्रम–गर्मी, ठण्ड, वर्षा, ओलावृष्टि, मिट्टीआदि	अनुमानितहानि की मात्रा (कुन्तल)	परिणामस्वरुपआय मेंहानि (औसत रु0)
		प्रथमवर्ष (2022)	रबी(2)	सरसों	रोग, वर्षा	2QTL/Ac.	10000/Ac.
		द्वितीय वर्ष (2021)	खरीफ (1)	धान	वर्षाकम	10 QTL/Ac.	15000/Ac.
		तृतीय वर्ष (2020)	खरीफ (1)	धान	रोगवर्षा	8 QTL/Ac.	12000/Ac.
		चतुर्थवर्ष (2019)	रबी(2)	गेंहू	रोग	2 QTL/Ac.	4000/Ac.
		पंचवांवर्ष (2018)					
	b	क्याआपफसलबीमा के बारेमेंजानतेहैं?	हां	नहीं			
			☑	☐			
		अतिरिक्तजानकारी (फसल बीमा के लाभार्थी–बड़ेकिसान, लघु एवंसीमान्तकिसान आदि) फसलबीमालाभार्थी का संतुष्टिस्तरक्याहै?	फसलबीमा का लाभनहींमिलपाताहै। बीमा का लाभनहींमिलताइसलिए किसानों ने बीमाकराना बंद करदिया।				

39		फसलपद्धतिमेंबदलाव				
	a	सामान्य फसल	खरीफ धानऔरमक्का	श्रबी गेंहू, सरसोंआलू	जायद / अन्य ऋतु तरबूज, ककड़ी, और खरबूज	
	b	फसल का नाम	पारम्परिकबोआई का समय	विगत 5 वर्षोंमेंबोआई के समय मेंपरिवर्तनहुआहै / देखा है	अभीबोआई का समय	परिवर्तन के कारण
		गेंहू	नवम्बर	देखा है	दिसम्बर	ठण्डीदेरसे बढ़ना
		आलू	अक्टूबर	देखा है	नवम्बर	ठण्डीदेर से आना
		सरसों	अक्टूबर	देखा है	नवम्बर	अगैतीबुवाई से माहु का प्रकोप कम होताहै।
		धान	जुलाई	देखा है	अगस्त	वर्षा की कमी के कारण
		गन्ना	मार्च	देखा है	अप्रैल	वर्षा की कमी
	C	अन्य सूचना / जानकारी (विलुप्त फसल / प्रजातिआि दउल्लेख करें)				

40		सिंचाईप्रणाली / पद्धतिमेंपरिवर्तन				
	a	फसल का नाम	वर्तमानमेंसिंचाईपद्धि त का उपयोगफव्वारासिंचा ई(1), टपक विधि (2), नहर(3), वर्षाआधारित(4), पारम्परिक(5), अन्य (6) (उल्लेखित करें)	वर्तमानमेंउपयोगाि कए गए पानी की मात्रा (रुपया / एकड़)	पूर्वम सिंचाईपद्धति का उपयोगफव्वाराि संचाई(1), टपक विधि (2), नहर(3), वर्षाआधारित(4), पारम्परिक(5), अन्य (6) (उल्लेखित करें)	पूर्वमेंउपयोगकिए गए पानी की मात्रा (रुपया / एकड़)
		गेंहू	बोरिंग 6	3 हजार एकड़	बेरिंग	2 हजार एकड़

		धान	6 बोरिंग	4 हजार / एकड़	बेरिंग	3हजार एकड़	
		गन्ना	6 बोरिंग	5 हजार / एकड़	बेरिंग	3 हजार / एकड़	
	b	ग्रामपंचायतमेंसिंचाईहेतु पम्पों की संख्या 220	डीजलआधारित	विद्युतआधारित	सौरपम्प	पारम्परिकसिंचाईविधियां	
			30	190	1	वर्षा	
	c	अन्य सूचनाएं / जानकारीअगरकोईहै					
41		**पशुपालन / पशुधन**					
	a	ग्रामपंचायतमेंप्रचलितपशुधनऔरपशुपालनसम्बन्धितगतिविधियां श्रेणी : डेयरी (1) मुर्गीपालन (2) मत्स्य पालन (3) सूअरपालन (4) मधुमक्खीपालन (5) अन्य–स्पष्टकरें (6)		1 4 अन्य–स्पष्टकरें (6) बकरी			
	b	डेयरीपरप्रभाव	पशुहानि गाय (1) भैंस (2) अन्य (3)	पशुहानि की संख्या (प्रत्येकपशुकोउल्लेख करें)	हानि के कारण (रोग, आयु, दुर्घटना आदि)	हानि का मौसम	उत्पादकतामेंकोईपरिवर्तनदेखा गया? वृद्वि (1) कमी (2) परिवर्तननहीं (3)
		प्रथमवर्ष(2022)	2	100	श्रोग	गर्मी	2
		द्वितीय वर्ष(2021)	2	115	श्रोग	गर्मी	2
		तृतीय वर्ष(2020)	2 अन्य (3) बकरी	30 60	श्रोग	गर्मीसर्दी	2
		चतुर्थवर्ष(2019)	2	80	श्रोग	सर्दीगर्मी	2
		पंचमवर्ष(2018))	2	50	श्रोग	सर्दी, गर्मी	2
		अन्य जानकारी / सूचनाएं	Nil				

	C	मुर्गीपालनपरप्रभाव निल	पक्षीहानि मुर्गी (1) बत्तख (2) अन्य (3)	पक्षीहानि की संख्या (प्रत्येकपक्षी का उल्लेख करें)	हानि के कारण	हानि के मौसम / ऋतु	उत्पादकतामेंकोईपरिवर्तनपायागयाहै? वृद्धि (1) कमी (2) परिवर्तननहीं (3)
		प्रथमवर्ष(2022)	Nil				
		द्वितीय वर्ष(2021)	Nil				
		तृतीय वर्ष(2020)	Nil				
		चतुर्थवर्ष(2019)	Nil				
		पंचमवर्ष(2018))	Nil				
		अन्य जानकारी / सूचनाएं					
	d	अन्य पशुओंपरप्रभाव निल	पशुहानि (कृपयानिर्दिष्टकरेंकिकौन से है)	पशुहानि की संख्या (प्रत्येक पशु का उल्लेख करें)	हानि के कारण	हानि की ऋतु	उत्पादकतामेंकोईपरिवर्तनपायागयाहै? वृद्धि (1) कमी (2) परिवर्तननहीं (3)
		प्रथमवर्ष(2022)	Nil				
		द्वितीय वर्ष(2021)	Nil				
		तृतीय वर्ष(2020)					
		चतुर्थवर्ष(2019)					
		पंचमवर्ष(2018)					
		अन्य जानकारी / सूचनाए					

V. कृषि व पशुपालन

42	a	प्रमुख उगाईजानेवालेफसलें व सम्बन्धितसूचनाएं/जानकारी											
					उर्वरकउपयोग			कीटनाशकउपयोग			खरपतवारनाशी		
		फसल (अनाज, तिलहन, दलहन, उद्यान एवंफूल आदि)	ऋतु/ मौसम	उपज (कु0)	उर्वरक के प्रकार	औसतप्रयुक्त मात्रा (किग्रा0/ एकड़)	क्याविगतपांचवर्षों मेंउपयोगकियेगयेउर्वरकों की मात्रा में वृद्धि (1) कमी (2) परिवर्तन नहीहै (3)	कीटनाशकों के प्रकार	औसतप्रयुक्त मात्रा (किग्रा/ एकड़)	क्याविगतपांचवर्षों मेंउपयोगकियेगये कीटनाशकों की मात्रा में वृद्धि (1) कमी (2) परिवर्तननहींहै (3)	खरपतवारनाशीं के प्रकार	औसतप्रयुक्त मात्रा (किग्रा/एकड़)	क्याविगतपांचवर्षों मेंउपयोगकियेगये खरपतवारकी मात्रा में वृद्धि (1) कमी (2) परिवर्तननहींहै (3)
		उर्द, मसूर	गर्मी सर्दी	3 QTL/acr.	Urea, DAP,	100 Kg/Acr. 50 Kg/Acr.	1	2 4D	1/2 L/acr.	1	Fatechak	1/2 L/Acr.	1
		गेंहू	सर्दी	15 Qtl/Acr.	Urea, DAP,	100 Kg/Acr. 50 Kg/Acr.	1	फयूराडीन	200ml /acr.	1	2 4D	250ml /Acr.	1
	b	क्याग्रामपंचायतमें फसलअवशेषजलायेंजातेहैं	हां ☐	नहीं ☑	जलायेगयेखेतो का कुल क्षेत्रफल (एकड़)	क्या यह फसलअवशेषपूर्वमेंजलायेजातेथे	अगर नही तो, कब से जलानाआरम्भकिया	क्याफसलअवशेषप्रबन्धन की योजनाओंकोजानते/जागरूकहै?					

43	जैविक खेतीसम्बन्धितगतिविधियां				
	फसल	क्षेत्रफल	प्रतिफसलआय (रू0 / कुन्तल)	बिक्रीहेतुबाजार	तृतीय पक्ष द्वाराप्रमाणित / सत्यापित
	Nil				

44	अन्य स्थाई खेतीसम्बन्धीगतिविधियां (जैसे शून्य / जीरोबजटप्राकृतिक खेती)			
	फसल	स्थाईगतिविधियां (शून्य जुताई, मल्चिंग, फसलचक्र, अर्न्तःफसलें, वर्मीकम्पोस्ट, कम्पोस्ट, मिश्रितफसले, प्राकृतिककीटप्रबन्धन, जैवपदार्थमेंवृद्धि आदि)	क्षेत्रफल(एकड़)	प्रतिफसलप्राप्तआय (रूपया)
	Nil			

45	कृषिवानिकी, सामाजिकवानिकी, परतीभूमिविकासऔरअन्य वृक्षारोपणगतिविधियां										
	पौध रोपणगतिविधियों के प्रकार	आच्छादित क्षेत्रफल	स्थान	योजनाअन्तर्गतराष्ट्रीय कृषिवानिकीमिशन (1), समन्वितवाटरशेडप्रबन्धनकार्यक्रम (2), वर्षाआधारित क्षेत्र कार्यक्रम (3), मनरेगा (4), वृक्षारोपणजनआन्दोलन (5), अन्य (6)–उल्लेख करें	मोनोक्लचर (1), मिश्रितप्रजाति (2)	रोपितप्रजातियां	आरम्भिदिनांक	सफलता (प्रतिशत)	कृषिवानिकीगतिविधियों के लाभतकलोगोंकी पहुंच/अवसर	पिछले 10 वर्षोंमेंपहुंच/अवसरमेंपरिवर्तन, वृद्धि (1), कमी (2), कोईपरिवर्तननहीं (3)	परिवर्तन के कारण–लाभमेंवृद्धि (1), प्रजातिसम्बन्धित (2), वनउन्मूलन (3) अन्य (4)–उल्लेख करें
	वृक्षारोपण	5एकड़	बनकोटा	3, 4	2	पीपल, बरगद, पकड़ियानीम, आम शीषम	जुलाई	40	व्यक्तिगतलाभ	2	खुलेजानवरों के कारण वृक्षारोपणनष्टहोजातेहैं
	Nil										
	Nil										

46	अपनायेगयेस्थायीपशुधनप्रबन्धनतकनीक			
	पशुधन के प्रकार	**ग्रामपंचायतमेंकुलसंख्या (लगभग)**	**अपनाईगईगतिविधियां (चारा मेंपरिवर्तन, पोषणपूरकअर्थात् पशुआहार, खुलेमेंचराई आदि)**	**प्राप्त/उत्पादितआय प्रतिपशुधन**
	गाय (देशी नस्ल)	100	पशुआहार, हराचारा	3 हजार रूपयेमासिक
	गाय (संकर नस्ल)	110	पशुआहार	4.5 हजार रूपयेमासिक
	भैंस (देशी नस्ल)	400	पशुआहार	5 हजार रूपयेमासिक
	भैंस (संकर नस्ल)	100	पशुआहार	6 हजार रूपयेमासिक
	बकरी	90	खुलेमेंचराई	2 हजार रूपयेमासिक
	सुअर	25	बचा खाना एवं खुले में चराई	1 हजार रूपयेमासिक
	मुर्गी	0		
	मत्स्य	1		कोईआय नही है।
	अन्यभेड़	0		

VI. स्वच्छता एवंस्वास्थ्य

47		जल की गुणवत्ता (पेयजल या नल जल से आपूर्ति परिवार)						
	a	आपूर्तिकियेजानेवाले पानी की गुणवत्ताकैसीहै?	उपयुक्त	अनुपयुक्त				
			☑	□				
	b	जल का स्वादकैसालगताहै?	तीक्ष्ण	नमकीन	सामान्य			
			□	□	☑			
	c	आपूर्तिहोनेवाले जल मेंसामान्यतः दूषितपदार्थक्याहै?	नमकीन	गन्दा	मटमैला	बालू/कीचड़	गन्ध	जल रखनेपरपीलाहो जाताहै
			□	□	□	□	□	□
	d	जल को शुद्व करने के लिए आपकिसविधि का प्रयोगकरतेहैं?	उबालकर	जल शोधक	आयोडीन/फिटकरीमिलाकर	सौर शुद्धीकरण	क्लेवेसलफिल्ट्रेशन	अन्य, (कृपयाउल्लेख करें)
			□	☑	□	□	□	□

48		ठोसअपशिष्टउत्पादन / अपशिष्टप्रबन्धन						
	a	अपने घरमेंप्रतिदिनउत्पन्नहोनेवालाअपशिष्ट पदार्थ / कचरा	सब्जी का छिलका, सूखा कचराआदि				1 किलो	
	b	आपकेग्रामपंचायतमेंअपशिष्टपदार्थ / कचराकैसेइकट्ठाकियाजाताहै?	ळां	ठेली द्वारा				
	c	कचरासंग्रहकितनीबारहोताहै?	□प्रतिदिन	☑साप्ताहिक	□वैकल्पिकदिन			
			न्हीं	नहीं				
	d	क्याआपके क्षेत्र मेंकोईस्थानहै, जहांकचराइकट्ठाडालाजासकताहै? यदिहांतोकृपयाआपकीग्रामपंचायत से कितनीदूरीपरहै या किसस्थानपरहै?	☑	□	टारआरसी सेन्टर ग्रामपंचायत बनकोटा			
	e	क्याआपकेग्रामपंचायत क्षेत्र मेंसामान्य कूड़ेदान रखेगयेहैं?	☑	□				
	f	क्याआपकचरेकोसूखेऔरगीलेकचरे की श्रेणी मेंबांटतेहैं?	☑	□				
	g	आपगृहस्तरपरकचरे का उपचारकैसेकरतेहैं?	पुनःचक्रमण	कम्पोटिंग	वर्मीकम्पोस्ट	अपशिष्ट	जलाना	अन्य (उल्लेखित करें)
			□	□	☑		□	

49		खुलेमें शौचमुक्तस्थिति			
	a	क्याआपकागांव खुलेमें शौचमुक्त घोषितहै?	☑हां	□नहीं	
	b	स्वयं के शौचालय वालेपरिवारों की संख्या	380	□	
	c	सामुदायिक शौचालय / इज्जत घर की संख्या	1	□	प्रमुख स्थानसाधनसहकारीसमितिके पासबनकोटा
	d	क्या शौचालय का उपयोगकियाजारहाहै?	हां		
	e	अगर शौचालय का उपयोगनहींकियाजारहाहैतोक्यों? (साफ–सफाई का अभाव, रख–रखाव का अभाव, बहुतदूर आदि)			

50		अपशिष्ट जल	घरेलू	व्यवसायिक	औद्योगिक	कृषिगतिविधियां	गंदानाला
	a	अपशिष्ट जल का क्यास्रोतहै?	☑	□	□	□	□
	b	उत्पन्नअपशिष्ट जल की मात्रा (अनुमानित लीटर प्रतिदिन)	5000				
	c	गांवमेंकियागयाअपशिष्ट जल उपचार, यदिकोईहैतो–	Sock Pit 18				
	d	अपशिष्ट जल पुनःचक्रण या पुनः उपयोग की गतिविधि, यदिकोईहैंतो–					

51		स्वास्थ्य देखभाल की सुविधा			
		स्वास्थ्य केन्द्र की उपलब्धता	ळां	नहीं	उपलब्ध छत का क्षेत्रफल (वर्गमीटर)
	a	प्राथमिकस्वास्थ्य केन्द्र	□	☑	
	b	सामुदायिकस्वास्थ्य केन्द्र	□	☑	
	c	उपस्वास्थ्य केन्द्र	☑	□	60 M^2
	d	आंगनवाड़ी	☑	□	100 M^2
	e	आशा	☑	□	
	f	स्वाथ्य कैम्प/मेला	☑	□	
	g	डिजीटलस्वास्थ्य देखभाल	□	☑	

52		रोग/बीमारी								
		विगतवर्षनिम्नवत् बीमारी/रोग से कितनेलोगप्रभावितहुंए हैं?	प्रभावितकुलव्यक्तियों की संख्या	प्रभावितआयुसमूह			सामान्य उपचार का विकल्प			
				प्रभावितबच्चों की संख्या	प्रभावितवयवस्कों की संख्या	प्रभावितवरिष्ठनागरिकों की संख्या	स्थानीय स्वास्थ्य देखभालसुविधाएं (उल्लेख करें)	घरेलू देखभाल	घर–घर जानेवाला	अन्य (उल्लेख करें)
	a	वेक्टर–जनितरोग (मलेरिया, डेंगू, चिकेनगुनिया आदि)	330	50	150	130	Sub Center H	☑	□	PHC Bajeer ganj
	b	जल–जनितरोग (हैजा/डायरिया/टाईफाईड/ हैपेटाइटिस आदि)	71	10	50	11	Sub Center H	☑	□	CHC Saidpur
	c	श्वाससम्बन्धीरोगजोवायुप्रदूषण से होतेहैं (इनडोर एण्ड आउटडोर)	530	10	200	320	Sub Center H	☑	□	PHC BAjeer Ganj

	d	कुपोषण	8	4	1	3	Sub Center H	☑	□	PHC Bajeer ganj

VII. उर्जा

53			
	a	आपकेग्रामपंचायतमेंकुलकितने घरविद्युतकृतहैं	**1177**
	b	ग्रामपंचायतमेंनिम्नलिखितअनुमानितविद्युतउपकरणों की संख्या	
		ए0सी0	**04**
		एयर कुलर	**150**
		रेफ्रिजेटर/फ्रीज	**210**

54		विद्युतकटौती की आवृत्ति	
	a	दिनमेंकुछबार	☑
		दिनमें एकबार	□
		विद्युतकटौती नही	□
	b	प्रतिदिनकितने घण्टेगुलरहतीहै?	10 – 12 H
		यदि प्रतिदिन नही तो सप्ताह में कितने घण्टेबिजलीगुलहोतीहै?	

55	वोल्टेजअस्थिरता/ उतार–चढ़ाव की आवृत्तिक्याहै?	
	दिनमेंकुछबार	☑
	दिनमें एकबार	□
	अस्थिरता/उतार–चढ़ाव नहीं	□

56	पावरबैकअप का मतलबविद्युतकटौती के दौरानउपयोग	संख्या
	डीजलचलितजेनरेटर	5
	सौरउर्जा	1
	इमरजेंसीलाईट	10
	इन्टवटर्स	100

	अन्य साधन (उल्लेख करें)	

57		नवीकरणीय/अक्षयऊर्जा के स्रोत		
	a	क्यागांवमेंनिम्नलिखितमें से कोईस्थापनाहै?	इंस्टालेशन (स्थापना) की संख्या	कुलस्थापित क्षमता (किलोवाट)
		घर की छतोंपरसौरउर्जास्थापना	1	3 किलोवाट
		विद्यालय की छत परसौरउर्जास्थापना	0	
		चिकित्सालय की छत परसौरउर्जास्थापना	0	
		ग्रामपंचायतभवनपरसौरउर्जास्थापना	0	
		अन्य सौरउर्जास्थापना	0	
		सौरस्ट्रीटलाईट	5	1/2 किलोवाट
		बायोगैस	0	
		विकेन्द्रितनवीनीकरणउर्जा/मिनीग्रीड	0	
	b	क्याआपसौरउर्जास्थापना के लिए उपलब्ध अनुदान के बारेमेंजानतेहैं (कुछ योजनाओं/कार्यक्रमों का उल्लेख करें)	Yes	

58	भोजनबनानेहेतुप्रयुक्तईंधन	परिवारों की संख्या	प्रतिपरिवारप्रयुक्तऔसत मात्रा (किग्रा/महीना)
	पारम्परिकजलौनी (उपले/जलौनी लकड़ी)	800	80 से 100 किलो
	बायोगैस	0	
	एलपीजीगैस	377	14.2 किग्राप्रतिपरिवार
	विद्युत	0	
	सौरउर्जा	0	
	अन्य (कोयला, मिट्टी का तेल, चारकोल आदि)	0	

59	वाहन की संख्या			
	वाहन के प्रकार	ग्रामपंचायतमेंवाहन संख्या (अनुमानित)	प्रयुक्तईधन के प्रकार	तय की गईऔसतदूरी (किमी प्रतिदिन)
a	जीप	0		
b	कार	32	डीजल/पेट्रोल/गैस	50 किमीप्रतिदिन
c	दोपहियावाहन	700	पेट्रोल	40 किमीप्रतिदिन
d	विद्युतचालितवाहन	0		
e	आटो	2	डीजल	60 किमीप्रतिदिन
f	ई–रिक्शा	11	बैटरी	50 किमीप्रतिदिन
g	अन्य			

60	कृषि यंत्र	ग्रामपंचायतमेंकृषि यंत्रों/मशीनों की सख्या	प्रयुक्तईधन के प्रकार	तय की गईऔसतदूरी(किमी प्रतिदिन)
a	टैक्ट्रर	94	डीजल	15 किमीप्रतिदिन
b	कम्बाईनहारवेस्टर	0		
c	अन्य (कृपयाउल्लेख करें)	0		

61	ग्रामपंचायतमेंअवस्थितपेट्रोलपम्प (अगर कोई है)										
	ईधन के प्रकार	प्रतिदिन की बिक्री	पम्प से आपूर्तिवाले गांव की संख्या	कितनेप्रकार के वाहनएकदिन/महीनामेंपेट्रोलपम्प से ईधनलेतेहैं? (समय/ अवधि का उल्लेख करें)							
				टैक्ट्रर	कृषि यंत्र	जीप	कार	दोपहिया वाहन	आटो	ई–रिक्शा	अन्य
a	डीजल	2000 ली	3	5	0	0	12	0	5	0	0
b	पेट्रोल	700 ली	3	0	0	0	20	10	5	0	0

62	औद्योगिकइकाई			
	उद्योग के प्रकार	संख्या	उर्जा के स्रोतः ग्रिडविद्युत (1), डीजलजेनरेटर (2), नवीनीकरण/अक्षय उर्जा (3)	उर्जा की खपत प्रतिमाहविद्युत का उपयोग (किलोवाट) ईधनउपयोग (लीटर प्रतिदिन)
	Nil			

Annexure-III: HRVCA

क्लाइमेट स्मार्ट ग्राम पंचायत विकास योजना

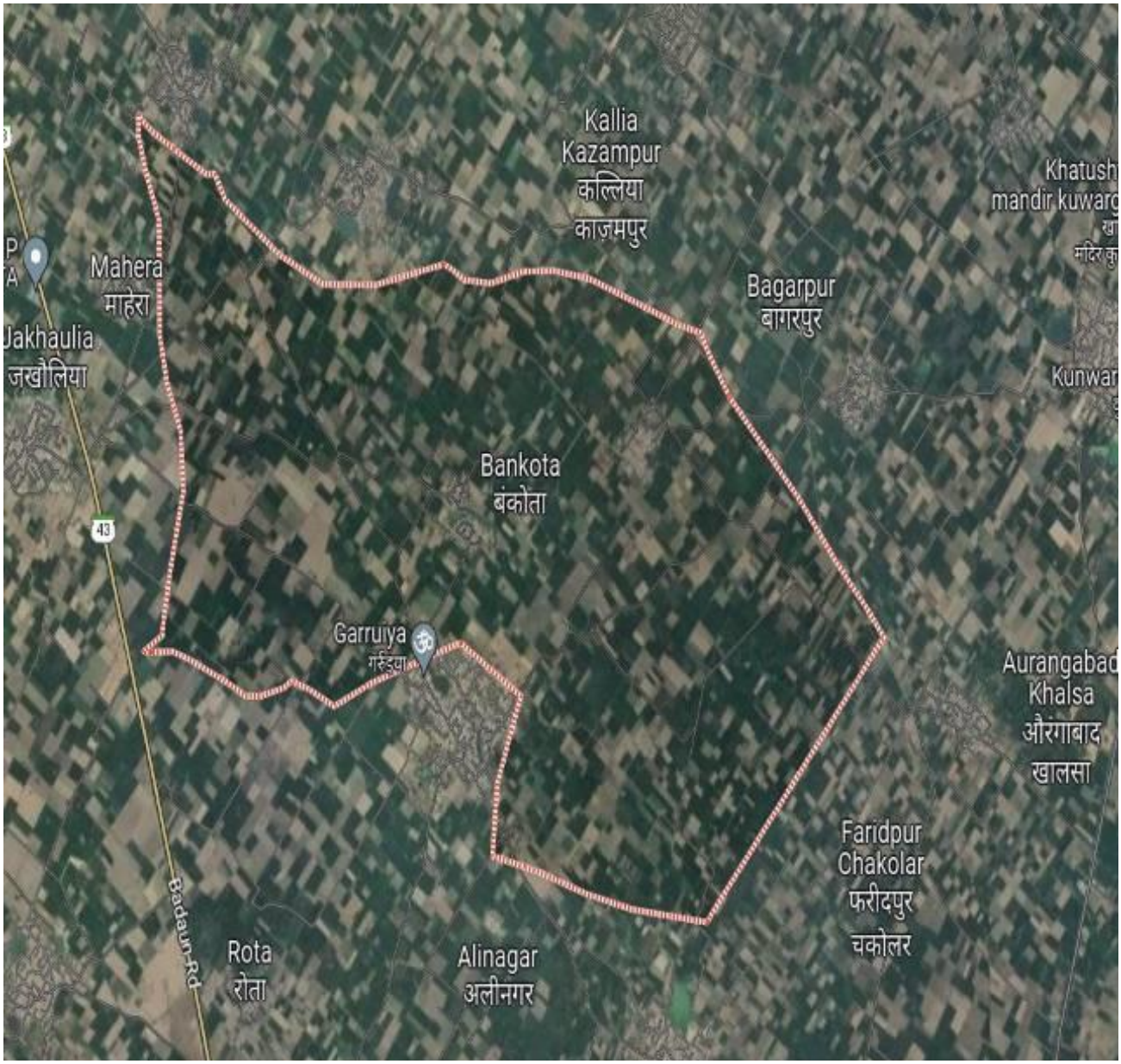
ग्राम पंचायत– बनकोटा

विकासखण्ड– बजीरगंज

जनपद– बदायूं

ग्राम पंचायत की प्रोफाइल

उत्तर प्रदेश के जनपद बदायूं के ब्लाक वजीरगंज में बनकोटा ग्राम पंचायत स्थित है। यह ग्राम पंचायत ब्लाक मुख्यालय बजीरगंज से 5 किमी तथा जिला मुख्यालय बदायूं से 18 किमी की दूरी पर स्थित है। बनकोटा ग्राम पंचायत में 3 गांव बनकोटा, गर्रुइया, निनमा है। जिसमें बनकोटा से गर्रुइया ग्राम 2 किमी दूर तथा बनकोटा से निनमा की दूरी 3 किमी है। गर्रुइया ग्राम में सबसे अधिक पशुपालन है। जिससे काफी परिवारों की आजीविका दूध के व्यवसाय पर ही आधारित है।



जलवायु परिर्वतन शीलता :–

प्रवृत्ति/परिवर्तन, मुख्य चुनौतियां/झटके एवं तनाव

ग्राम पंचायत बनकोटा में सभी मौसम सर्दी गर्मी बरसात का प्रभाव रहता है। 25 वर्ष पूर्व सर्दी नवम्बर माह से फरवरी माह तक रहती थी। किन्तु अब सर्दी दिसम्बर जनवरी तक ही रहती है। पहले बरसात जून से सितम्बर तक रहती थी। मगर अब बरसात जुलाई के अन्त से सितम्बर के शुरू तक ही रहती है। पहले गर्मी अप्रैल से लेकर अक्टूबर तक रहती थी किन्तु अब गर्मी मार्च से नवम्बर तक रहती है।

आपदा जोखिम प्रोफाइल के अन्तर्गत से निम्न सूचनाओं का संकलन किया है जो निम्न है

ग्राम पंचायत बनकोटा को प्रभावित करने वाली आपदाओं की पहचान करना समुदाय के साथ उन आपदाओं के बारे में विचार विमर्श किया। जिससे उनकी दैनिक दिनचर्या, रोजगार, शिक्षा, पेयजल, समुदाय में साफ सफाई आदि पर एक सूची प्राप्त की गई है।

आपदाओं का मौसमी कलैण्डर

टापदा	जनवरी	फरवरी	मार्च	अप्रैल	मई	जून	जुलाई	अगस्त	सितम्बर	अक्टूबर	नवम्बर	दिसम्बर
जल भराव												
सूखा												
भूकम्प												
टाग												
ओलावृष्टि												
शीतलहर												
लू												

आपदामान चित्रण मौसमी कलैण्डर बनाने से पूर्व समुदाय से चर्चा हुई जिससे स्पष्ट हुआ कि कम दिनों में अधिक वर्षा तथा सर्दी कम दिनों तक पड़ती है एवं गर्मी के दिनों में वृद्वि तथा तापमान बढ़ता ही चला जा रहा है।

जलवायु परिवर्तन जनित आपदा के जोखिम/खतरों का मानचित्रण आपदाओं के आधार पर होने वाले नुकसान तथा प्रभावित समुदाय से विस्तृत जानकारी प्राप्त आपदाओं का ग्राम पंचायत बनकोटा के पर्यावरण के साथ ही मानव जीवन एवं स्वास्थ्य पर प्रभाव पड़ रहा है, जल भराव, सूखा, कम वर्षा, शीतलहर से प्रतिवर्ष नुकसान सहना पड़ रहा है। जो निम्न है।

क्रम	आपदा	जोखिम क्षेत्र	जोखिम	आवादी	घर	संसाधन
1	जल भराव	स्वच्छता	पानी की बजह से कूड़ा निकल नहीं पाता है। और बरसात के समय पर जगह जगह कूड़ा एकत्र हो जाता है।	बनकोटा	30 घर	अनिल सिंह के घर से मैन सड़क तक बनकोटा जखोलिया मार्ग पर

		स्वास्थ्य	जलजनित बीमारियों का होना	71 लोग प्रभावित		.....
		पशु पालन	जलजमाव के कारण पशुओं को हरा चारा कम मिलता है।	गर्रूइया बनकोटा निनमा	300 घर	दुग्ध की उत्पादकता में कमी।
		आजीविका	स्थानीय स्तर पर मजदूरी न मिलना	गर्रूइया बनकोटा निनमा	300 घर	फसल में नुकसान होने के कारण कुछ लोग बड़े शहरों में चले जाते हैं।
2	सूखा	पेयजल	जल स्तर का नीचे जाना पेयजल की कमी	सम्पूर्ण ग्राम पंचायत	1177	50 इण्डियामार्का एवं 525 निजी नल का जलस्तर नीचे चला जाता है
		कृषि	उपज का प्रभावित होना	सम्पूर्ण ग्राम पंचायत	1177	फसलों में पैदावार कम
		खेती पर प्रभाव	सब्जी उत्पादन	सम्पूर्ण ग्राम पंचायत	1177	खेत
		पशु पालन	जानवरों को चारा का संकट तापमान बढ़ने से विभिन्न बीमारियों का होना एवं दुग्ध उत्पादन कम होना	गाय, भैंस, बकरी पालन	50	.....
3	लू लगना	स्वास्थ्य	मानव एवं पशुओं को लू लगने से उनके स्वास्थ्य पर बुरा प्रभाव पड़ता	सम्पूर्ण ग्रामपंचायत	1177	.....
4	शीतलहर	स्वास्थ्य एवं कृषि पशु पालन	मानव एवं पशुओ को ठंड लगना, फसल में नुकसान,	सम्पूर्ण ग्रामपंचायत	1177	.....
5	ओलावृष्टि	फसल एवं मानव स्वास्थ्य	फसल का नुकसान, मानव स्वास्थ्य पर बुरा प्रभाव	सम्पूर्ण पंचायत	1177	कच्चे घर क्षतिगृस्त, ओलों की वजह से महिलाओं एंव पुरूषों को चोट लगने का भय

आजीविका के साधन पर आपदा का प्रभाव :– बनकोटा ग्रामपंचायत का आजीविका का प्रमुख साधन कृषि, मजूदरी, पशु पालन है। सूखा के समय फसल नष्ट हो जाती है। आजीविका हेतु ग्रामवासी मजदूरी के लिए बड़े नगरों में जाते हैं।

आपदाओं का ऐतिहासिक समय एवं घटनाक्रम :–

ग्राम पंचायत वन कोटा का ऐतिहासिक समय रेखा आपदाओं एवं उसके प्रभाव को जानने के बाद समुदाय के साथ यह भी जानने का प्रयास किया गया कि ये आपदाएं इस ग्राम पंचायत को कब–कब प्रभावित कर रही है। जिसमें समुदाय ने माना जल भराव, सूखा, लू लगना, शीतलहर, ओलावृष्टि आपदा

जो लगातार समुदाय को प्रभावित कर रही है। साथ ही प्रत्येक वर्ष बढ़ रही है। विग्त दो वर्षों से कोराना बीमारी भी आपदा ही हो गई। इस बीमारी से बचाव के लिये पूरे देश में लॉकडाउन लग जाने के कारण लोग अपने में ही घरों में रहे। इसका सबसे अधिक प्रभाव खेती पर पड़ा सबकुछ बन्द हो जाने के कारण ग्राम बासियों की आर्थिक स्थिति पर प्रभाव पड़ा ।

क्रम	बर्ष	आपदा/खतरा	घटनाओं का कारण	मृतकों की संख्या	प्रभावित लोगों की संख्या	आर्थिक क्षति	न्यूनीकरण हेतु किया गया कार्य
1	2013	असमय वर्षा	अधिक बारिश हुई	0	पूरी ग्राम पंचायत प्रभावित	फसलों के उत्पादन में 45 प्रतिशत की हानि	कुछ नहीं किया गया ।
2	2014	सूखा	बारिश कम हुई	0	पूरा ग्राम पंचायत प्रभावित	60 प्रतिशत की हानि	पेयजल हेतु हैण्डपम्प रिवोर एवं समरसेबिल लगाना
3	2022	सूखा	बारिश समय से नही हुई	0	पूरा ग्राम पंचायत प्रभावित	धान की फसल में 50 प्रतिशत की हानि हुई	कृषि सिंचाई हेतु निजी टयूबेल बोरिंग
4	2022	शीत लहर	ठण्ड अधिक पड़ने से	0	पूरा ग्राम पंचायत प्रभावित	आलू और मिर्च के उत्पादन में 50 प्रतिशत की हानि	प्राकृतिक आपदा
5	2023	ओलावृष्टि	बारिश के साथ ओला	0	पूरी ग्राम पंचायत	गेंहू और सरसों के उत्पादन में लगभग 20 प्रतिशत हानि	प्राकृतिक आपदा
6	2023	जल भराव	नीचा क्षेत्र होने के कारण जल भराव	0	अनिल सिंह के घर से मैन सड़क तक बनकोटा जखोलिया मार्ग पर जल भराव	.....	कोई कार्य नही

2013 में अधिक वर्षा के कारण सभी फसलों में 45 प्रतिशत की हानि हुई। 2014 में वर्षा न होने के कारण सूखा की स्थिति बन गई। जिससे फसलों के उत्पादन में 60 प्रतिशत की हानि हुई। वर्षा कम होने के कारण 2020 में सूखा की स्थिति बन गई। जिससे सरसों धान में लगभग 50 प्रतिशत की हानि हुई। जिसमें सरकार से कुछ अनुदान भी मिल गया था। 2022 में वर्षा समय से नही हुई। इसलिए धान की फसल में 50 प्रतिशत की हानि हुई। 2022 शीतलहर में आलू मिर्च में 50 प्रतिशत की हानि हुई। कोई सरकारी सहायता नहीं मिली।

आजीविका के साधनों पर आपदाओं का प्रभाव :–

क्रम	आजीविका के प्रकार	आपदा	आपदा का प्रभाव			प्रभाव
			अधिक	मध्यम	कम	
1.	कृषि	जल भराव				एक गांव से दूसरे गांव तक आवागमन बरसात में बन्द होने से कृषि गतिविधियों में समस्या आती है। विद्यार्थियों को जल भराव के कारण विद्यालय जाने में परेशानी होती है। कम दिन के जल भराव बाले क्षेत्र की पैदावार भी प्रभावित होती है।
		सूखा				खेत की फसलें पानी बरसा न होने के कारण फसल सूख जाती है सिंचाई खर्च अधिक आता है। फसलों की बढबार नहीं होती है। सभी फसलों का उत्पादन कम हो जाता है।
		शीतलहर				फसलें झुलस जाती है । सरसों में माहू का प्रकोप बड जाता है। फसलों की बढ़बार प्रभावित हो जाती है।
		ओलावृष्टि				ओलावृष्टि से फसलों के उत्पादन में हानि हो जाती है। कच्चे मकान क्षतिग्रस्त हो जाते है।
2.	मजदूरी	सूखा				कृषिगत् मजदूरी का कार्य नहीं मिलता है। खानपान पर प्रभाव पड़ता है। आजीविका प्रभावित होती है। आर्थिक संकट उत्पन्न हो जाता है। रोजगार के लिए बडे ष्शहरों में जाना पडता है।
		शीतलहर				काम नहीं मिल पाता है। स्वास्थ्य खराब रहता है।
3.	पशुपालन	सूखा				पशुओं में दुग्ध उत्पादन कम हो जाता है। गाय भैंसो के नहलाने के लिए पानी

						की कमी हो जाती है। चारा कम हो जाता है।
		शीतलहर				पशु चारे की समस्या हो जाती है। पशुओं मे बीमारीयां हो जाती है। पशुओ में दुग्ध उत्पादन कम हो जाता है।

नाजुकता विशलेषण :–

आपदाओं का सामना करने से प्रभावित समुदाय सामाजिक, आर्थिक रूप से कमजोर हो जाता है। इसे जानने के लिए ग्रामवासियो, आशाबहू, आगंनबाड़ी कार्यकत्री से चर्चा की जिससे निम्न जानकारी प्राप्त हुई।

समुदाय पर जलजमाव का प्रभाव :–

बनकोटा ग्राम पंचायत में जल भराव की समस्या कई जगह है। जिसमें प्रमुख अनिल सिंह के घर से मुख्य सड़क तक और बनकोटा जखोलिया मार्ग तक है। नालियों का पानी निकास के लिए नाला होना चाहिए। जल भराव से आवागमन बाधित होता है। जल भराव से आबादी का पूरा–पूरा कचरा निचले क्षेत्र में इक्ठठा होता है। जो जल भराव के दौरान पूरे क्षेत्र में फैल जाता है। जिससे स्वच्छता एवं स्वास्थ्य सम्बन्धित समस्यों से समुदाय प्रभावित रहता है। जैसे फोडा, फुन्सी, चर्म रोग हो जाते है।

समुदाय पर सूखा का प्रभाव :–

ग्राम पंचायत बनकोटा में 2014 में बारिश बहुत कम हुई। इससे फसलों के उत्पादन में 60 प्रतिशत की हानि हुई। हैण्डपम्प और बोरिंग काम नहीं कर रहे थे। जल की समस्या काफी हो जाती है। हर बार बारिश कम होने से सूखा की स्थिति बनी रहती है। जिससे फसलों में कई बार मोटर चलाके पानी लगाना पड़ता है। सुखे के प्रभाव से खरीफ की फसल में सिंचाई की लागत बढ जाती है। फसलों में लागत अधिक और उत्पादन कम होता है। पेयजल प्रभावित होता है। गर्मी के दिनों में 50 इण्डियामार्का एवं 525 निजी नल का जल स्तर नीचे चला जाता है।

समुदाय पर लू का प्रभाव :–

लू के कारण पशुओं तथा बच्चों एवं मानवों का स्वास्थ्य खराब हो जाता है। मई से जून तक तापमान में अत्यधिक वृद्वि हो जाती है। गर्म हवाएं चलने लगती है। लू के समय में जब गर्म हवायें चलती हैं। इसका समुदाय के स्वास्थ्य पर बुरा प्रभाव पड़ता है। मानव एवं पशुओं को लू लगने से उनका स्वास्थ्य खराब हो जाता है।

समुदाय पर शीतलहर का प्रभाव :–

दिसम्बर एवं जनवरी में है। शीतलहर में बच्चों का स्वास्थ्य खराब हो जाता है। पशुओं की ठंड के कारण मृत्यु हो जाती है। सर्दीयों के मौसम में दिसम्बर से जनवरी शीतलहर का प्रभाव रहता है। शीतलहार मानव एवं पशुओं के स्वास्थ्य के साथ कृषि को भी प्रभावित करता है। गाय भैंसो के दुग्ध उत्पादन में आ जाती है। शीतलहर के कारण मजदुरी, कृषि कार्य आदि आजीविका प्रभावित होती है।

समुदाय पर ओलावृष्टि का प्रभाव :–

ओले जब पड़ते हैं तो फसलों के उत्पादन में हानि हो जाती है। फरवरी मार्च में ओलावृष्टि होने से फसलों के उत्पादन में लगभग 20 प्रतिशत हानि हो जाती है कच्चे घर क्षतिग्रस्त हो जाते है। मानवों एवं बच्चों को ओलों से चोट लगने का भय रहता है।

समुदाय की व्यवहारगत एवं ढांचागत संरचना में कमियां

समुदाय से विचार विमर्श करने के बाद समुदाय की व्यवहारगत एवं ढांचागत संरचना में निम्न कमियां प्राप्त हुई –

- मानसून के दिनों में जलजनित एवं मच्छर–मखियों द्वारा संक्रामक बीमारियों के होने आशंका बढ़ जाती है। यहां टाईफाईड मलेरिया सांस सम्बन्धित बीमारियां हो जाती हैं।
- गांव में कृषि केन्द्र, बीज केन्द्र, किसान संगठन, अनाज केन्द्र आदि सामाजिक संगठन की कमी है। इस कारण आपदा के समय समुदाय को सरकारी एवं बाह्य सहायता पर निर्भर रहना पड़ता है।
- केवल 1 सोलर पैननल है। यहां 90 प्रतिशत से अधिक पक्की छते हैं जहां सौर उर्जा का प्रयोग किया जा सकता है। ग्रामपंचायत बनकोटा में सौर उर्जा पैनलों को छतों पर लगाया जा सकता है।
- लोगों में जानकारी एवं जागरूकता का अभाव है लोगों को सरकारी कल्याणकारी योजनाओ की जानकारी का अभाव है। पशुपालन तो करते हैं किन्तु नस्ल सुधार पशुओं का बीमा आदि की जानकारी कम है।
- ग्राम बनकोटा में जिसमें सफाई कर्मियों द्वारा गीला कचरा सूखा कचरा अलग किया जाता है। सफाई कर्मी बनकोटा ग्राम पंचायत में कचरा ठेली द्वारा आरआरसी सेन्टर पर एकत्र करते हैं। इसके बाद भी ग्राम में स्वच्छता का अभाव है। इसके लिए ग्राम वासियों को स्वच्छता के लिए जागरूकता बैठक होनी चाहिए।
- गावं में गाय, भैंस आदि पशुपालन होने के बावजूद भी गोबर का प्रयोग जैविक खाद एवं कम्पोस्ट खाद बनाने में नहीं किया जाता है, बल्कि सड़कों किनारे ढेर लगाकर रखते हैं और कण्डे बनाते हैं। केवल आरआरसी सेन्टर के पास गौशाला का गोबर उपयोग करने के लिए वर्मी कम्पोस्ट बेड बनाये गये हैं जिसमें गौशाला का गोबर उपयोग किया जाता है। गर्रूइया ग्राम में सबसे अधिक पशुपालक है उनका गोबर सड़को किनारे ढेर लगे रहते हैं। अतः पशुपालकों वर्मी कम्पोस्ट का प्रशिक्षण देकर उनके स्थान पर बेड बनवाकर देना चाहिए जिससे उनके पशुओं के

गोबर का उपयोग हो सके। इसके लिए ग्रामवासियों को जागरूक करना चाहिए एवं वर्मी कम्पोस्ट खाद बनाने का प्रशिक्षण देना चाहिए। जिससे बनकोटा ग्राम पंचायत स्वच्छ हो जाये।

- गांव की मुख्य सड़क –बदायूं चंदौसी रोड मार्ग से गर्रूइया का सम्पर्क मार्ग जगह जगह टूटा है जिससे आवागमन में परेशनी होती है जो लगभग 1500 मीटर है।
- ग्राम सभा में चार तालाब स्थित हैं जिसमें दो बनकोटा में और दो गर्रूइया ग्राम में है तालाबों में साफ सफाई नहीं है। गांव का कचरा भी जल निकासी के समय तालाबों में ही चला जाता है। तालाबों की साफ सफाई होना चहिए, तालाबो का जीर्णोद्वार होना चाहिए जिससे तालाब का जल पशुओं के पीने के लिए प्रयोग किया जा सके। तथा जल संरक्षण भी हो सके।
- ग्राम में वृक्षारोपण बहुत कम है बाग भी बहुत कम है जिसमें जागरूक ग्रामवासी विनीत कुमार के यहां 50 पेड़ हैं। इसके अलावा इक्का दुक्का कहीं पेड़ है गंगा एक्सप्रेस–वे बनने से कई वृक्ष कट गये हैं और कट रहे है। ग्राम पंचायत बनकोटा में वृक्षारोपण में ध्यान देना चाहिए। इसके लिए ग्राम पंचायत में नर्सरी की व्यवस्था होनी चाहिए। ग्राम पंचायत के पास भूमि भी उपलब्ध है। ग्राम पंचायत के ग्रामवासी वृक्षारोपण करके जलवायु को प्रदूषित होने से बचा सकते।
- गर्रूइया ग्राम में जगह जगह गोबर के ढेर लगे हुए हैं। गोबर के ढेरों को हटाने के लिए ग्रामबासी तैयार नहीं है। इसलिए ग्रामवासियों को गोबर के पास ही बैड बनाकर देना चाहिए जिससे वह वर्मी कम्पोस्ट खाद बनायें और शेष कचरे को ठेली द्वारा कूड़ा एकत्र केन्द्र पर पहुंचाना चाहिए जिससे ग्राम में स्वच्छता का वातावरण हो जाये जिससे हमारी जलवायु शुद्व हो जायेगी। इसके लिए ग्राम वासियों को वर्मी कम्पोस्ट खाद बनाने का प्रशिक्षण देना चाहिए।

क्षमता विश्लेषण–

ग्राम पंचायत बनकोटा को क्लाइमेंट स्मार्ट बनाने की दृष्टि से स्वंय में कितना सक्षम है। इसकी जानकारी हेतू समुदाय के साथ मिलकर जलवायु परिवर्तन से उत्पन्न होने वाली आपदाओं के बारे में जानकारी प्राप्त की जो निम्न है–

- बनकोटा ग्राम पंचायत बदायूं चंदौसी मार्ग पर स्थित है। इस ग्रामपंचायत में ग्रामीणों की सुविधा के लिए एक सामुदायिक शौचालय है।
- तीन प्राथमिक विद्यालय, एक जूनियर स्कूल एक संस्कृत इण्टर कॉलेज एक हाईस्कूल है। गांव में आंगनबाड़ी भवन बना है। जिसमें आंगनबाड़ी रेखा यादव कार्यकत्री और संगीता सहायिका है।
- उच्च शिक्षा के ख्वाजा गरीब नबाज डिग्री कॉलेज है।
- पूरे गांव में इण्टरलाकिंग हैं 90 प्रतिशत घर पक्के हैं।
- स्वच्छता की दृष्टि से बनकोटा ग्राम पंचायत में आरआरसी सेन्टर कूड़ा एकत्र केन्द्र जिसमें गीला कचरा एवं सूखा कचरा अलग अलग किया जाता है। बनकोटा से ठेली द्वारा कचरा लाया जाता है।

- ग्राम पंचायत में 1177 निजी हैण्डपम्प है तथा 150 इण्डिया मार्का नल है। पानी का स्वाद अच्छा है। जल का शुद्वीकरण के लिए कुछ परिवार आर.ओ का प्रयोग करते हैं। अन्य व्यक्ति यही जल पीते हैं। जिससे पेट सम्बन्धी बीमारी होने का भय रहता है। अतः जल की टेस्टिंग जरूरी है।

- **भौतिक संसाधनों की उपलब्धता एवं गावं की दूरी**

विवरण	संख्या	सम्पर्क व्यक्ति	गांव से दूरी
प्राथमिक विद्यालय ग्रामपंचायत बनकोटा	1 बनकोटा 1 गर्रूइया 1 निनमा	श्री धनेशपाल यादव श्री कमल कुमार शर्मा श्री अशोक कुमार	0किमी 1किमी 2किमी
पंचायत भवन	0	टूट गया है	
सरकारी राशन की दुकान	2	श्रीपाल गर्रूइया निनमा विमला देवी बनकोटा	1.5किमी 0 किमी
पीएचसी	1	प्राथमिक स्वास्थ्य केन्द्र बजीरगंज श्रीमती मधु कष्यप	5 किमी
तहसील	1	बिसौली	8 किमी
विकास खण्ड	1	बजीरगंज	5 किमी
पोस्ट आफिस	1	बजीरगंज	5 किमी
बैंक	1	बजीरगंज	5 किमी
सीएचसी	1	सैदपुर	8 किमी

प्राकृतिक संसाधन उपलब्धता संख्या एंव दूरी

क्रमांक	संसाधन	छूरी	संख्या	विवरण/नाम / सम्पर्क संख्या	मोबाईल नं.
1	तालाब	0,1 किमी	4	अरविन्द यादव	6396325070
2	बाग	0 किमी	2	दानवीर, विनीत कुमार	
3	भौगोलिक क्षेत्रफल		818 हे.		

मानव संसाधन

1	ग्रामप्रधान	प्रमिला यादव 8859318660
2	शिक्षक	ऋषिपाल सिंह9927562134
3	आंगनबाड़ी	रेखा यादव 8954923827
4	आशा	ममता 7839788754
5	एएनएम	मधु कष्यप 8218197605 सहगुफता आताब 9458708309
6	ग्राम विकास अधिकारी	मनोज कुमार सिंह 9410600037

वित्तीय संसाधन 2022–23

क्रम	कार्य विवरण	अनुमानित लागत		योग
		लेबर	मटैरियल	
	राज्यवित्त आयोग 2022–23	–	–	759101
	केन्द्र वित्त 15वां वित्त आयोग 2022–23	–	–	143911
			योग	2198212

क्लाइमेट स्मार्ट ग्राम पंचायत विकास कार्य योजना वर्ष 2023–24 :–

क्लाइमेट स्मार्ट ग्राम पंचायत विकास योजना बनाने हेतु समूह चर्चा की गई ग्राम पंचायत में वर्तमान स्थिति उससे सम्बन्धित समस्याएं उन समस्याओं के निराकरण हेतु जानकारी प्राप्त की गई। क्लाइमेट स्मार्ट ग्राम पंचायत बनकोटा की कार्य योजना तालिका.....

क्रम	कार्य का क्षेत्र	कार्य का नाम	कार्य का विवरण	परिसम्पत्ति का स्थान	अनुमानित धनराशि रू.	अवधि	योजना का परिव्य
1	मानव विकास एवं सामाजिक स्वच्छता	हैण्डपम्प मरम्मत	100 खराब हैण्डपम्पो की मरम्मत	बनकोटा , निनमा , गर्रूइया	2.10 लाख	6 माह	15 वॉ वित्त आयोग
2		हैण्डपम्प रिबोर	72 हैण्डपम्पों की रिबोरिंग	बनकोटा , निनमा , गर्रूइया	284728	6 माह	15 वॉ वित्त आयोग
3		दिव्यॉग शौचालय निर्माण	1 दिव्यॉग शौचालय निर्माण प्रा0 विद्यालय	प्राथमिक विद्यालय बनकोटा	121351	6 माह	15 वॉ वित्त आयोग
4		दिव्यॉग शौचालय निर्माण	प्राथमिक विद्यालय गर्रूइया में 1 दिव्यॉग शौचालय निर्माण 80 मीटर लम्बाई , 2 मीटर उॅचाई	प्राथमिक विद्यालय गर्रूइया में	89537	6 माह	15 वॉ वित्त आयोग
5		दिव्यॉग शौचालय निर्माण	1 दिव्यॉग शौचालय निर्माण	उच्च प्राथमिक विद्यालय गर्रूइया गर्रूइया	50091	6 माह	15 वॉ वित्त आयोग
6	बुनियादी एवं आधारभूत संरचना	गौशाला मरम्मत कार्य	1 गौशाला मरम्मत कार्य	बनकोटा	46407	6 माह	राज्य वित्त आयोग
7		गौशाला पर मिटटी भराव	1 गौशाला पर मिटटी भराव कार्य	बनकोटा	24700	6 माह	राज्य वित्त आयोग

8		सोकता गडडा	भूगर्भ जल प्रबन्धन हेतु 40 सोकता गडडा	बनकोटा, गर्रूइया निनमा,	12 लाख	6 माह	15वां वित्त आयोग /अन्य श्रोत्र
9		तालाब जीर्णोद्वार	4 तालाब का जीर्णोद्वार कार्य	बनकोटा, गर्रूइया निनमा	60 लाख	6 माह	15वां वित्त आयोग /अन्य श्रोत्र
10		वृक्षारोपण कार्य	1500 छायादार, फलदार वृक्षो का रोपण	चारों तालाबों के किनारे	22 लाख	6 माह	15वां वित्त आयोग /अन्य श्रोत्र
11		नर्सरी निर्माण	पॉली हाउस नेट हाउस बनाकर नर्सरी तैयार करना	बनकोटा में 20 डिस्मिल ग्राम पंचायत की जमीन पर	3 लाख	6 माह	15वां वित्त आयोग /अन्य श्रोत्र
12		जैविक खाद प्रशिक्षण एवं पर्यावरण पर जागरूकता बैठकें	प्रशिक्षण एवं जागरूकता बैठकें	बनकोटा निनमा, गर्रूइया	5 लाख	6 माह	15वां वित्त आयोग /अन्य श्रोत्र
13		सौर ऊर्जा द्वारा प्रकाश की व्यवस्था	300 घरों की छतों पर सौर ऊर्जा के लिए पैनल एवं प्रकाश की व्यवस्था	बनकोटा, निनमा, गर्रूइया 300 घर	38 लाख	6 माह	15वां वित्त आयोग /अन्य श्रोत्र
14		कूड़ा एकत्र पात्र	1177 घर निनमा, गर्रूइया, बनकोटा	1177 घर निनमा, गर्रूइया, बनकोटा	6 लाख	6 माह	15वां वित्त आयोग /अन्य श्रोत्र
15		रैन वाटर हार्वेस्टिंग	4 रैन वाटर हार्वेस्टिंग	निनमा, गर्रूइया, बनकोटा	6 लाख	6 माह	15वां वित्त आयोग

16		नोडप निर्माण	20 नाडेप	निनमा, गर्रूइया, बनकोटा	5 लाख	6 माह	15वां वित्त आयोग
17		बाउंड्री बाल पार्ट 1	उच्च प्राथमिक विद्यालय गर्ररूइया बाउंड्री बाल पार्ट 1 80 मीटर लम्बाई , 2 मीटर उँचाई	उच्च प्राथमिक विद्यालय गर्ररूइया	367916	6 माह	15 वॉ वित्त आयोग
18		टाइल्स कार्य	उच्च प्राथमिक विद्यालय गर्ररूइया में टाइल्स कार्य 80 मीटर लम्बाई , 2 मीटर उँचाई	उच्च प्राथमिक विद्यालय गर्ररूइया	411016	6 माह	15 वॉ वित्त आयोग

उपरोक्त तथ्यों के आधार पर जलवायु परिवर्तन का प्रभाव ग्रामपंचायत बनकोटा में सर्दी गर्मी एवं बरसात में रहता है। सबसे अधिक प्रभाव जुलाई से सितम्बर तक वर्षा कम होने से फसलें नष्ट हो जाती है। जलवायु परिवर्तन की दृष्टि से ग्राम में अधिक से अधिक बृक्षारोपण किया जाये वृक्षारोपण के लिए ग्राम में नर्सरी की व्यवस्था होनी चाहि। ग्राम में सोलर पैनल लगाने चाहिए। पशुओं के गोवर से वर्मी कम्पोस्ट खाद बनाने का प्रशिक्षण ग्राम वासियों को देना चाहिए। बैटरी चलित वाहनों पर सरकार को सब्सिडी देकर ग्राम वासियों को बैट्री चलित वाहनों के उपयोग करने के लिए प्रोत्साहित करना चाहिए। इस प्रकार हमारी ग्राम पंचायत बनकोटा क्लाइमेट स्मार्ट ग्राम पंचायत बन जायेगी।

कर सकें। ग्राम में अत्यधिक पेट्रोल डीजल वाहन होने के कारण हमारी वायु प्रदूषित होती है। वायु प्रदूषण को रोकने के लिए हमें बैट्री चलित वाहनों का उपयोग करना चाहिए। विद्युत का उपयोग कम करें उसकी जगह पर सोलर पैनल लगवायें जिससे पर्यावरण को प्रदूषित होने से बचाया जा सके। खेतों में कीटनाशक एवं रासायनिक खाद का प्रयोग कम करके जैविक खाद का प्रयोग किया जाये जिससे हमारी जमीन की उर्वरा शक्ति बनी रहें। बनकोटा क्लाइमेट स्मार्ट ग्राम पंचायत बन जायेगी। टीम मेम्बर अशोक सिंह ने बताया ग्राम स्वच्छ होने से स्वास्थ्य सम्बन्धी बीमारियां कम होती हैं। इसके बाद के.पी. सिंह अपने सुझाव रखे उन्होने बताया जब हमारी जल, जमीन वायु शुद्व होगी तो हमारी जलवायु भी शुद्व हो जायेगी।

ग्राम पंचायत में चार तालाब हैं। तालाब साफ सफाई एवं जीर्णोद्धार होना चाहिए जिससे उसके जल का उपयोग अन्य कार्यों में किया जा सके। वातावरण निर्माण के लिए पर्यावरण की दृष्टि से गांव में सोलर पैनल लगाये जाने चाहिए तथा वायु को शुद्व करने के लिए वृक्षारोपण लगायें जाने चाहिए। ग्राम बनकोटा में पेट्रोल डीजल वाहन अधिक हैं एवं उनकी जगह बैटरी चलित वाहनों का उपयोग करना चाहिए। इस प्रकार हम अपनी ग्राम पंचायत को क्लाइमेट स्मार्ट ग्राम पंचायत बना सकते हैं। इसमें सरकार एंव ग्राम वासियों की सहभागिता बहुत जरूरी है। बैठक का समापन करते हूए ग्राम प्रधान ने सभी को धन्यवाद दिया।

ग्राम पंचायत समितियों का विवरण

प्रशासनिक समिति	शिक्षा समिति	नियोजन एवं विकास समिति

प्रमिला यादव– अध्यक्ष श्रीमती प्रेमलता–सदस्य श्री सुमित कुमार–सदस्य श्री अरविन्द कुमार–सदस्य श्री संदेश–सदस्य श्री मुनेन्द्र–सदस्य श्री हरिकेश–सदस्य	प्रमिलायादव–अध्यक्ष (प्रधान) श्रीमती निशा–सदस्य श्रीमती आशा–सदस्य श्री अरविन्द कुमार–सदस्य श्री नीरज–सदस्य श्री जय सिंह–सदस्य श्रीमती महर बानों–सदस्य	प्रमिला यादव– अध्यक्ष श्री रंजीत–सदस्य श्री हरिकेश–सदस्य श्रीमती आशा–सदस्य श्रीमती प्रेमलता–सदस्य श्री हेमन्द्रप्रताप सिंह–सदस्य श्री अरविन्द–सदस्य
निर्माण कार्य समिति	जल प्रबन्धन समिति	स्वास्थ्य एवं परिवार कल्याण समिति
श्रीमती आशा–अध्यक्ष श्रीमती प्रेमलता–सदस्य श्री नीरज–सदस्य श्री रंजीत–सदस्य श्री हरिकेश–सदस्य श्री जयसिंह–सदस्य	श्री हरिकेश–अध्यक्ष श्रीमती आशा श्री नीरज श्रीमती निशा श्री हरसिंह श्रीमती महरबानों	श्री अरविन्द कुमार–अध्यक्ष श्रीमती निशा–सदस्य श्री हेमेन्द्रप्रताप सिंह–सदस्य श्री नीरज–सदस्य श्री हरिकेश–सदस्य श्रीमती आशा–सदस्य

ग्राम पंचायत सदस्यों की सूची

क.सं.	ग्राम पंचायत सदस्य का नाम
1	आशा यादव
2	अरविन्द कुमार
3	हरिकेश
4	नीरज
5	जय सिंह
6	मुनेन्द्र
7	हेमेन्द्र प्रताप सिंह
8	निशा
9	नूर वानों
10	रंजीत
11	प्रेमलता
12	विपिन
13	एकता
14	सर्वेश

ग्राम भ्रमण – (Transit walk)

प्राथमिक विद्यालय गर्रूइया से ग्राम भ्रमण शुरू होकर पूरा गांव घूमते हुए आंगनबाड़ी केन्द्र और कोटेदार के यहां भ्रमण करते हुए बनकोटा जूनियर विद्यालय में आंगनबाड़ी केन्द्र और विद्यालय के अध्यापकों से सम्पर्क किया एवं ग्राम की शिक्षा स्वास्थ्य से जुड़ी हुई जानकारियां प्राप्त की। उसके बाद गर्रूइया में स्थित दोनों तालाबों को देखने गये। तालाबो में साफ–सफाई नहीं थी अतः प्रधान जी से कहा तालाब की साफ सफाई एंव जीर्णोद्धार किया जाये जिससे जल संरक्षण हो सके एवं तालाब के जल का उपयोग पशुओं के पीने के लिए एवं मत्स्य पालन में उपयोग हो सके। उसके बाद हम लोग पूरे गांव का भ्रमण करते हुए निनमा ग्राम की तरफ गये निनमा ग्रामवासियों से मिले उनकी समस्याओं को सुना एवं उसके बाद निनमा प्राथमिक विद्यालय में गये वहां विद्यालय के मुख्य अध्यापक अशोक कुमार जी से मिले उनसे शिक्षा के विषय में वार्ता की।

ट्रांजेक्ट वाक के दौरान अवलोकन की गई स्थितियां :–

बसाहट	ग्राम पंचायत बनकोटा में गॉव के अधिकतर मकान पक्के है बीच–बीच में कुछ मकान कच्चे हैं। ग्राम गर्रूइया मे पक्के मकान बने हुए हैं। ग्राम में पशुपालन लगभग 400 परिवार करते हैं। बदायूं जिले का सबसे बड़ा दुग्ध उत्पादन ग्राम है। गर्रूइया से एक किमी दूरी पर निनमा ग्राम स्थित है। उस गांव में कुछ कच्चे मकान हैं कुछ पक्के मकान हैं।
तालाब	ग्राम सभा में 4 में से 3 तालाबो की साफ सफाई नहीं है 2 तालाबों में मत्स्यपालन होता है ।
हरित क्षेत्र बाग बगीचा	ग्राम मे वृक्षारोपण बहुत कम है गॉव में वृक्ष लगाने आवश्कता है ।
भौतिक संसाधन	प्राथमिक विद्यालय पूर्व माध्यमिक विद्यालय भी है। पास में ही संस्कृत कॉलेज एवं ख्वाजा गरीब नबाज डिग्री कॉलेज भी है। बनकोटा ग्राम पंचायत में आरआरसी सेन्टर, वर्मी कम्पोस्ट खाद निर्माण यूनिट, गौशाला, आंगनबाड़ी केन्द्र बने हुए हैं। पानी के लिए इण्डिया मार्का नल है।

समाजिक मानचित्रणः–

बनकोटा ग्राम पंचायत में गौशाला के पास सामाजिक मानचित्रण ग्रामवासियों की मदद से किया गया इस प्रक्रिया में संस्था की टीम द्वारा जो लोग उपस्थित थे उनको सोशल मैपिगं के बारें में पर्याप्त जानकारी दी गयी। गांव का नक्शा अच्छे ढंग से बने इसलिए सभी लोगों को पूर्व पश्चिम उत्तर दक्षिण दिशाओ का ज्ञान कराया गया उसके बाद गांव सड़के, बस्ती, मकान, तालाब, कुआं, सभी कुछ दर्शाने के लिए बताया गया।

जाति वर्ग अनुसार परिवारों की संख्या

सामान्य जाति के घरों की संख्या	240
पिछड़ी जाति के घरों की संख्या	782
अनुसूचित जाति के घरों की संख्या	155
योग	1177

संस्था का नाम :– विनोबा सेवा आश्रम बरतारा (शाहजहाँपुर)
सर्वे टीम के नाम

1. **संजीव प्रकाश**
2. **के.पी. सिंह**
3. **अशोक सिंह**


ग्राम पंचायत बनकोट
मन्दिर
खेत

Annexure IV: Estimating Targets and Costs

Enhancing Green Spaces and Biodiversity

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
a) Plantation activities	**Phase 1:** Similar to current level of plantation activities that the GP does (to be asked during consultation with the Pradhan) **Phase 2:** Increase plantation targets by 1500-2000 based on availability of land **Phase 3:** Further increase target by 1500-2000 based on availability of land	Tree plantation (preparation, sapling, labour, etc.)[97] = **₹70 per tree** (saplings are also available at no cost from DoEFCC, GoUP) Tree Guards (metal)[98] = **₹1,200 per unit** Maintenance of plantations: **1.5 lakh/ha**	Sequestration potential estimated based on teak species - 5.6 to 10 tCO_2e sequestered per tree Plantation density for agro forestry is considered 100 trees/ha
b) Arogya van	For a GP with area less than **300-400 ha**, one *Arogya* van can be suggested with **0.1 ha** area For a GP with area of around **1000 ha**, one *Arogya* van can be suggested with an area of **0.2- 0.5 ha** based on availability of land		
c) Agro-forestry	(Can be subjective and agro-forestry activities can be started from **Phase 1**) **Phase 2:** 40vv% of total agricultural land; with +100 trees planted per hectare **Phase 3:** Remaining agricultural land; with + 100 trees planted per hectare	Cost of agroforestry[99] = **₹40,000/hectare**[100]	

97 Cost as per plantation guidelines and inputs from GPs
98 Cost as per market rates
99 Cost as per Sub-mission on Agroforestry Guidelines, National Mission for Sustainable Agriculture
100 https://link.springer.com/article/10.1007/s42535-022-00348-9

Sustainable Agriculture

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
a) Micro irrigation- drip and sprinkler irrigation	**Phase 1:** 30% of total agricultural land to be covered **Phase 2:** 70% of total agricultural land to be covered **Phase 3:** 100% of total agricultural land to be covered	**₹1 lakh per ha**	
b) Construction of bunds	**Phase 1:** 50% of total agricultural land to be covered **Phase 2:** 100% of total agricultural land to be covered **Phase 3**: Maintenance of bunds - Bunding is done on periphery of agricultural fields - Farmers in GP have land holdings of various sizes **Assumption**: all fields are square	**1m of bunding[101]= ₹150**	
c) Construction of farm ponds	**Phase 1**: 5-10 ponds **Phase 2**: 15- 20 ponds Phase: More if required + Maintenance of ponds Capacity of 1 farm pond= 300 m^3 Depends on number of large farms in GP + requirement of ponds (based on conversation with Pradhan)	Construction of 1 farm pond[102]= **₹90,000**	

101 Cost as per inputs received from GPs in HRVCA
102 Cost as per inputs received from GPs in HRVCA

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
d) Transition to natural farming	**Phase 1**: 15% of total agricultural land to be covered **Phase 2**: 40% of total agricultural land to be covered **Phase 3**: 100% of total agricultural land to be covered	A. Training & demonstration (3 sessions): **₹60,000** B. Certification (based on expert consultation): **₹33,000** C. Introduction of cropping system- organic seed procurement; planting nitrogen harvesting plants: > Cost per acre = **₹2,500** D. Integrated manure management - Procuring liquid bio fertiliser & its application; Procuring liquid biopesticide & its application; Natural pest control mechanism set up; Phosphate rich organic manure: > Cost per acre= **₹2,500** E. Calculation (cost of transition per acre)= (a)+(b)+(c)+(d) = **₹1,00,000** *Total Cost*[103]: Area (ha)*2.471*Calculation done in (e) [Area (ha)*2.471*1,00,000 = **₹2,47,100**]	

103 UP State Organic Certification Agency (UPSOCA_Tariff_20March.pdf (apeda.gov.in)) and National Mission for Sustainable Agriculture (NMSA) Guidelines

Management & Rejuvenation of Water Bodies

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
a) Maintenance of Water Bodies (Cost not to be double counted if these plantations are a part of the overall green space enhancement initiative as mentioned above)	**Phase 1**: Cleaning, desilting & fencing of water bodies + Tree plantations (1000) around periphery of water bodies (along with tree guards) **Phase 2**: Additional 100 tree plantations (along with tree guards) around water bodies + continued maintenance of water bodies **Phase 3**: Continued maintenance of water bodies	Approximate Cost[104]: 1. Restoration (cleaning, desilting, increase in catchment area, etc.) of 1 pond = **₹ 7Lakhs** 2. Construction of 1 Retention Pond (300 m^3 capacity) = **₹7 Lakhs** 3. Tree plantation with tree guard = **₹1,200 per unit** 4. Maintenance Cost: a. 1 Pond/water body = **₹3,75,000** b. 1 Retention Pond = **₹50,000** c. Tree with tree guard = **₹20 per unit**	
b) Safe drinking water supply	**Phase I:** Installation of community based solar powered/gravity based RO water filtration system at strategic locations **Phase II & III:** Continued maintenance of solar powered/ gravity based RO water filtration system	Approximate cost : 1. 1 unit of solar powered RO water filtration system with 1000 LPH (liter per hour) capacity: ~ **₹2,00,000**	
c) Enhancing Drainage and Sewage Infrastructure	**Phase 1**: Cleaning & desilting of existing drains + enhancing drainage infrastructure (construction of new drains) **Phase 2 & 3:** Continued activities carried out in Phase 1	Refer mostly to the costs provided in the HRVCA	

104 Cost as per inputs received from GPs in HRVCA

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
d) Rainwater harvesting (RwH) structures	**Phase I:** Installation of rainwater harvesting structures (RwH) in all PRI buildings + recharge pits (as recommended in HRVCA) **Phase II:** Installation of RwH structures in residential buildings above a plot size of 1500 sq. ft. + Additional recharge pits + Incorporating RwH system in all new buildings **Phase III:** Installation of RwH structures in residential buildings 1000 sq.ft.+ Incorporating RwH system in all new buildings	Cost of 1 rainwater harvesting structure with 10 m^3 capacity[105] = **₹35,000** Cost of 1 recharge pit[106] = **₹35,000**	

Sustainable and Enhanced Mobility

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
a) Enhancing Intermediate Public Transport (IPT)	E-autorickshaws as per inputs on requirement of GP	Cost of 1 e-autorickshaw: ~**₹3,00,000** Available subsidy: up to **₹12,000** per vehicle	

105 Rooftop Rainwater Harvesting Guidelines, Indian Standards (IS 15797:2008)

106 Cost as per inputs received from GPs in HRVCA

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
b) Facility to Hire E-tractors & E-goods Vehicles	**Phase 1**: Promote electric alternatives of diesel tractors and goods transport vehicles + sensitising farmers about long-term benefits of e-vehicles **Phase 2 & 3**: Continued sensitisation	Cost of 1 e-tractor= **₹6,00,000** Cost of 1 commercial e-vehicle= **₹5 to ₹10 lakhs**	

Sustainable Solid Waste Management

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
a) Establishing a waste management system	**Phase 1:** a. Coverage of 100% households under GP's door-to-door waste collection system b. Provision for Electric Garbage Vans to collect 100% of existing waste generated c. Installation of waste bins d. Building partnership with other stakeholders (SHGs, local scrap dealers, local businesses, and MSMEs)	Total waste generated = Primary data, if not available, take average per capita waste generated in the GP as approximately **80 g per day**; biodegradable/organic waste - 58% non-biodegradable / inorganic waste - 42% No. of e-garbage Vans required[107] = Total waste generated / capacity of each van (310 kg) No. of waste bins = from HRVCA orcan be estimated by identifying strategic locations (PRI buildings, public buildings, parks, etc.)	

107 Cost as per market rates

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
	Phase 2: a. Installation of additional waste bins b. Provision for additional Electric Garbage Vans c. Maintenance of existing facilities/infrastructure d. Scaling up partnership	Additional waste bins = from HRVCA or estimated by identifying strategic locations (PRI buildings, public buildings, parks, etc.)	
	Phase 3: a. Maintenance works b. Scaling up partnership	COST[108]: 1. 1 Electric Garbage Van = **₹95,000** to **1,00,000** 2. 1 waste bins/ containers[109] = **₹15,000**	

108 Cost as per market rates

109 Cost as per SBM guidelines and inputs in HRVCA reports

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
b) Management of organic waste	**Phase 1:** a. Setting up Compost & vermi-compost pits through community involvement b. Partnership model between panchayat, community members and farmer groups for: 1. production & sale of compost 2. sale of agricultural waste	Total biodegradable/ organic waste generated = Primary data Organic waste from houses, commercial shops, PRI buildings, public buildings and open spaces, etc. = xxx kg per day (as per primary data) Potential compost quantity (kg per day) which can be generated[110] = xxx kg/day of organic waste / 2 Periodic composting of __ kg per year of agricultural waste (as per primary data)	
	Phase II and III: a. Maintenance and increasing compost pits capacity b. Scaling up partnership	Cost[111]: 1. Compost Pits cost reference: 30 vermicomposting and 15 Nadep compost pits = **₹4,50,000** 2. Solid Waste Management Yard (for both organic and inorganic waste) cost[112] reference: **₹35,00,000**	

110 https://www.biocycle.net/connection-CO_2-math-for-compost-benefits/#:~:text=In%20the%20process%20of%20making%20compost%20the%20microbes,food%20waste%20turns%20into%2050%20kg%20of%20compost

111 Cost as per inputs received from GPs in HRVCA

112 Cost as per inputs received from GPs in HRVCA

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
c) Ban on single-use-plastics	**Phase 1:** a. Complete ban on Single Use Plastics b. Awareness, training, and capacity-building programs c. Leveraging RACE Campaign and LiFE Mission d. Partnership model between panchayat, women and SHGs	Engagement of 100 women in manufacturing	
	Phase 2: a. Continued Awareness, training, and capacity-building programs b. Increased engagement from this GP & nearby villages of women, SHGs, MSMEs & individual entrepreneurs	Additional 200 women	
	Phase III: a. Continued Awareness, training, and capacity-building programs b. Increased engagement from this GP & nearby villages of women, SHGs, MSMEs & individual entrepreneurs	Additional 300 women	

Access to Clean, Sustainable, Affordable and Reliable Energy

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
a) Solar rooftops	**Phase 1:** PRI buildings (Panchayat Bhawan, schools, anganwadi, PHC, CHC, CSC etc) Assumption- 70% of rooftop area is available for solar rooftop installation	Total rooftop capacity installed = 5 sq.m. = 5 kW About 10 sq.m. area is required to set up 1 kWp grid connected rooftop solar system Annual clean electricity generated (in kWh) = installed capacity (kWp)*310 (sunny days)*24 (hrs)*0.18 (CUF) (calculate this for each PRI building and add up for total) Installed capacity- from the above website Total installed capacity= Panchayat Bhawan+ School 1+ School 2.... + any other PRI buildings Cost per kWh= **₹50,000**[113] No. of units of clean electricity generated per day= Electricity generated/365	Annual electricity generated (kWh)* 0.82/ 1000= ____ tonnes of CO<

113 Cost as per MNRE and current market rates

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
	Phase 2 & 3: Households Assumption- 70% of rooftop area is available for solar rooftop installation Installed capacity taken to be 3 kWp **Phase 2**: 40% of total pucca houses to install **Phase 3**: 100% of total pucca houses to install	Average Installed capacity per HH= 3 kWp Total capacity installed at HH level= No. of HH * 3 kWp Annual clean electricity generated (in kWh)=Total capacity installed at HH level (kWp) *310 (sunny days)*24 (hrs)*0.18 (CUF) Cost per kWh= **₹50,000**[114] No. of units of clean electricity generated per day= Annual Electricity generated/ 365	
b) Agro-photovoltaic	**Phase 2**: 25% of suitable agricultural area **Phase 3**: 50% of suitable agricultural area Suitable agri area- area under legumes & vegetables (keep the value under 10 ha)	250 kWp installed per hectare Total capacity installed = Area (ha) * 250 kWp Annual clean electricity generated (in kWh)=Total capacity installed (kWp) *310 (sunny days)*24 (hrs)*0.18 (CUF) Cost per kWh= **₹1 lakh**[115] No. of units of clean electricity generated per day= Annual Electricity generated/ 365	

114 Cost as per MNRE and current market rates
115 Cost as per market rate of installation

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
c) Solar pumps	**Phase 1**: 20% of diesel pumps replaced **Phase 2**: 50% of diesel pumps replaced **Phase 3**: 100% of diesel pumps replaced	Installed capacity = 5.5 kWh per pump Total installed capacity= No.of pumps replaced * 5.5 kWh Annual clean electricity generated= Total installed capacity (kWh) *310 (days)*24 (hrs)*0.18 (CUF) No. of units of clean electricity generated per day= Annual Electricity generated/ 365 Cost per pump = **₹3** to **₹5** lakhs[116]	Diesel consumption avoided= 390 litres/ per/ year Total diesel consumption avoided per year= No.of pumps replaced * 390 Emissions avoided= 1.05 tonnes CO_2e per pump per year
d) Clean cooking	**Phase 1**: 25% of households having cattle to install biogas + 25% of households in the top income groups to have solar induction cookstoves + 50% of households that currently use biomass to have improved *chulhas* **Phase 2**: 50% of households having cattle to install biogas + 50% of households in the top income groups to have solar induction cookstoves + 100% of households that currently use biomass to have improved *chulhas* **Phase 3**: 100% of households having cattle to install biogas + 100% of households in the top income groups to have solar induction cookstoves	Cost for 1 biogas plant= **₹50,000** for 2 to 3 m^3 biogas plant Cost for 1 for double burner solar cookstove without battery= **₹45,000** Cost for 1 improved *chulhas*= **₹3,000**[117]	

116 Cost as per market rates and PMKSY guidelines
117 Costs as per market rates

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
e) Energy efficiency (EE)	**Phase 1**: All PRI buildings to replace all fixtures and fans with energy efficient fixtures and fans + All HH to replace 1 incandescent/CFL bulb with LED bulb or 1 fluorescent tube lights with LED tube light **Phase 2**: All incandescent/CFL bulbs replaced with with LED bulb & all fluorescent tube lights replaced with LED tube light + 1 conventional fan replaced with EE fan in all HH **Phase 3**: All fans in all HH to be replaced with EE fans	Cost of 1 LED bulb= **₹70** Cost of 1 LED tubelight= **₹220** Cost of 1 EE fan= **₹1,110**[118]	
f) Solar streetlights	Based on inputs from Pradhan High-mast solar street light-1 (or more as per requirement) for each PRI building, pond/ lake, green space/parks/ playground/ gardens/ *arogya* van	Cost of 1 high-mast= **₹50,000** Cost of 1 solar LED street light= **₹10,000**[119]	

118 Costs as per UJALA scheme guidelines by Ministry of Power (https://static.pib.gov.in/WriteReadData/specificdocs/documents/2022/jun/doc202261464801.pdf)

119 Costs as per market rates

Enhancing Livelihoods and Green Entrepreneurship

Suggested Actions	Broad Guidelines to decide targets of various activities (can be subject to change based on Gram Panchayat context)	Calculation/formula for estimating quantitative target	Sequestration potential/ emissions avoided
a) Construction & Renting out of Solar-powered Cold Storage	Setting up of cold storage	Capacity : 1 unit = **5 - 10** metric tonnes based on production of vegetables and fruits/ and/or milk and milk products Cost: **₹8-15** lakh per unit	
b) Engage SHGs in Manu-facturing of Sustainable Products from Agricultural	Setting up of agricultural waste processing unit	Cost of 1 processing unit[120] = **₹3,00,000**	

120 Costs as per market norms

Annexure V: Relevant SDGs & Targets

SDG 2: Zero Hunger

Target 2.3: Double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

Target 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality

Target 2.a; Article 10.3.e: Development of sustainable irrigation programmes

SDG 3: Good Health and Well being

Target 3.3: End the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

Target 3.9: Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

SDG 6: Clean Water and Sanitation

Target 6.1: Achieve universal and equitable access to drinking water

Target 6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

Target 6.4: Substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals

Target 6.5: Implement integrated water resources management at all levels

Target 6.8: Support and strengthen the participation of local communities

Target 6.a: Expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including wastewater treatment, recycling and reuse technologies

SDG 7: Affordable & Clean Energy

Target 7.1: Ensure universal access to affordable, reliable and modern energy services

Target 7.2: Increase share of renewable energy in energy mix

Target 7.3: Double the global rate of improvement in energy efficiency

Target 7.a: Enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology

Target 7.b: Expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries in accordance with their respective programmes of support.

SDG 8: Decent Work and Economic Growth

Target 8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalisation and growth of micro-, small- and medium-sized enterprises, including through access to financial services

SDG 9: Industries, Innovation and Infrastructure

Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure

SDG 11: Sustainable Cities and Communities

Target 11.2: Safe, affordable, accessible and sustainable transport systems for all

Target 11.4: Strengthen efforts to protect and safeguard the world's cultural and natural heritage

Target 11.7: By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

SDG 12: Ensure sustainable consumption and production patterns

Target 12.2: Achieve the sustainable management and efficient use of natural resources

Target 12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international

frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

Target 12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

Target 12.8: By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

SDG 13: Climate Action

Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

Target 13.2: Integrate climate change measures into national policies, strategies and planning

Target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

SDG 15: Life on Land

Target 15.1: Ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

Target 15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

Target 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world

Target 15.5: Take urgent and significant action to reduce degradation of natural habitats, halt loss of biodiversity

Target 15.9: By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies

Annexure VI: Suitable species for plantation activities

Timber Trees

Name of plants	Family	Local names	Uses/ Medicinal properties
Acacia nilotica	Fabaceae	Babul	It is used for such products as bodies and wheels of carts, instruments and tools
Ficus religiosa	Moraceae	Peepal	Has medicinal properties and religious value
Azadirachta indica A. Juss.	Meliaceae	Neem	All parts of the neem tree- leaves, flowers, seeds, fruits, roots and bark have been used traditionally for treatment. The wood is ideal for furniture, both strong and termite resistant.
Tectona grandis	Lamiaceae	Sagaun	It is used in the manufacture of outdoor furniture and boat decks
Dalbergia sissoo	Fabaceae	Sheesham	It has several applications in aircraft and marine plywood, as charcoal for heating and cooking food, creating musical instruments etc
Madhuca longifolia	Sapotaceae	Mahua	It provides quality timber wood for various uses
Shorea robusta	Dipterocarpaceae	Sal	It is used for railway sleepers, ship-building, and bridges.
Cinnamomum tamala	Lauraceae	Indian bay leaf	It helps manage various health issues and used in cooking.

Fruits and Wild Food Plants

Name of plants	Family	Local names	Uses/ Medicinal properties
Mangifera indica	Anacardiaceae	Aam, Mango	All parts are used in traditional treatments
Artocarpus heterophyllus	Moraceae	Kathahal, Jackfruit	The timber is used for furniture. Many parts of the plant, including the bark, roots, leaves, and fruits, are known for their medicinal properties in traditional and folk medicine.
Psidium guajava	Myrtaceae	Guava, Amrood	It is a common and popular traditional remedy for various gastric ailments
Agaricus campestris L	Agaricaceae	Dharti Ka Phool	A type of mushroom
Alangium salvifolium (L.f.) Wang	Alangiaceae	Dhera, Ako	Ripe fruits are eaten
Amorphophallus paeoniifolius Dennst	Araceae	Elephant foot, Zimi Kand	Eaten as vegetable.
Crotolaria juncea L.	Fabaceae	Sanai	Light boiled buds eaten as vegetable.
Manilkara hexandra (Roxb) Dub	Sapoataceae	Khirini	The fruits are made into pickles & sauces.
Eugenia jambolana	Myrtaceae	Jamun	The root, leaves, fruits and bark have numerous medicinal properties
Aegle marmelos	Rutaceae	Bael	The unripe fruit, root, leaf, and branch are used to make medicine.
Morus rubra	Moraceae	Mulberry	Mulberries can be eaten raw and are also used to make jams, pies etc. They also have medicinal properties

Trees with Medicinal properties

Name of plants	Family	Local names	Uses/ Medicinal properties
Withania somnifera	Solanaceae	Ashwagandha	It is useful for different types of diseases
Bacopa monnieri	Plantaginaceae	Brahmi	It is used to manage different respiratory ailments
Andrographis paniculata	Acanthaceae	Kalmegh	It helps to boost immunity and is used to manage the symptoms of the common cold, sinusitis and allergies
Rauvolfia serpentina	Apocynaceae	Sarpagandha	It is used for the treatment of many different ailments.

Endangered trees with medicinal properties

Name of plants	Family	Local names	Uses/ Medicinal properties
Acorus calamus L.	Araceae	Bach, Bal, Ghorbach	A useful ethnomedicinal plants for curing bronchitis, cough, and cold
Asparagus adscendens Roxb.	Liliaceae	Satavar	Helps in treating conditions related to hormone imbalance
Celastrus paniculatus Wild.	Celastraceae	Umjain, Mujhani, Malkangani, Kakundan	Useful in the treatments of a variety of ailments

Other Trees

Name of plants	Family	Local names	Uses/ Medicinal properties
Populus ciliata	Salicaceae	Semal, kapok	Its leaves are used for animal fodder and herbal teas
Eucalyptus globulus	Myrtaceae	Tailapatra	Used in medicines to treat coughs and the common cold and also used to make essential oil

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