VASUDHA FOUNDATION
Green ways for a good earth!

Framework & Standard Operating Procedure for Development of

Climate Smart Gram Panchayat Action Plans (CSGPAP) for Uttar Pradesh (UP)

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

DECEMBER 2024

VASUDHA FOUNDATION
Green ways for a good earth!

Framework & Standard Operating Procedure for Development of

Climate Smart Gram Panchayat Action Plans (CSGPAP) for Uttar Pradesh (UP)

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

DECEMBER 2024

Credits

Published by

Directorate of Environment, UP (DoE) and UP Climate Change Authority

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

Email: **doeuplko@yahoo.com**

SOP can be accessed at: **http://www.upenv.upsdc.gov.in/**

With Technical Support from

Vasudha Foundation

Gorakhpur Environmental Action Group (GEAG)

External Review

Dr. K.V. Raju, Economic Advisor to Chief Minister, Uttar Pradesh

Mr. Manoj Singh, IAS, Additional Chief Secretary (Former), Environment, Forest and Climate Change Department, Government of Uttar Pradesh

Dr. Manmohan Kapshe, Professor, Department of Architecture and Planning, Maulana Azad National Institute of Technology, Bhopal

Authors

Mr. Ashish Tiwari, IFS, Secretary (Former), Environment, Forest and Climate Change Department, Government of Uttar Pradesh

Dr. Shiraz Wajih, President, Gorakhpur Environmental Action Group

Mr. Srinivas Krishnaswamy, CEO, Vasudha Foundation

Ms. Riya Sethia, Assistant Manager (Climate), Vasudha Foundation

Ms. Rini Dutt, Associate Director (Climate), Vasudha Foundation

Ms. Shivika Solanki, Senior Manager (Climate), Vasudha Foundation

Dr. Preeti Singh, Senior Advisor (Climate & Energy), Vasudha Foundation

Mr. Raman Mehta, Programme Director, Vasudha Foundation

Dr. S. Satapathy, Expert Consultant, Vasudha Foundation

Ms. Nupur Rai, Junior Research Fellow, Directorate of Environment, Uttar Pradesh

Design & Layout

Mr. Aman Kumar, Assistant Manager (Graphic Design), Vasudha Foundation

Ms. Swati Bansal, Senior Manager (Strategic Outreach), Vasudha Foundation

Ms. Priya Kalia, Associate Director (Communications), Vasudha Foundation

Message

ओम प्रकाश राजभर
मंत्री
पंचायती राज तथा अल्पसंख्यक कल्याण
मुस्लिम वक्फ एवं हज़ विभाग

विधान भवन सचिवालय
कक्ष सं. 62-62 ए
दूरभाष (आफिस) 0522-2238519
आवास
ए-1 श्रेणी-4 विधायक निवास
पार्क रोड, लखनऊ
दूरभाष (आवास) 0522-2237990

No. 564

लखनऊ दिनांक

जलवायु परिवर्तन हमारे जीवन के हर पहलू को प्रभावित करता है, जिससे इस महत्वपूर्ण मुद्दे से निपटने के लिए एक व्यापक और समावेशी दृष्टिकोण की आवश्यकता होती है। भारत के सबसे बड़े राज्यों में से एक उत्तर प्रदेश राज्य ने जलवायु विषय पर कार्यवाही में महत्वपूर्ण योगदान दिया है। नीति आयोग के राज्य ऊर्जा और जलवायु सूचकांक 2022 द्वारा मान्यता प्राप्त उत्तर प्रदेश, जलवायु पहल में अग्रणी राज्यों में से एक के रूप में उभरा है। हमारे प्रयासों को एक सामूहिक आंदोलन, विशेष रूप से ग्लासगो में कॉन्फ्रेंस ऑफ पार्टीज- कॉप26 (COP26) में माननीय प्रधान मंत्री श्री नरेंद्र मोदी द्वारा घोषित 'पंचामृत' लक्ष्य के आलोक में और मिशन LiFE के अनुरूप, परिवर्तित करने की अनिवार्य आवश्यकता है।

इस दृष्टिकोण की दिशा में एक प्रयास के रूप में, उत्तर प्रदेश सरकार ने राज्य, जिला, शहर से लेकर ग्राम पंचायतों तक सभी स्तरों पर *'जलवायु कार्रवाई का स्थानीयकरण'* शुरू किया है। हमारी ग्राम पंचायतों को जलवायु अनुकूल और जलवायु अनुकूल बनाने के लिए, ग्राम पंचायतों के लिए जलवायु स्मार्ट कार्य योजना (सीएसएपी) के विकास के लिए एक मानक संचालन प्रक्रिया (एसओपी) विकसित की गई है। यह दस्तावेज़ ग्रामीण शासन संस्थानों के लिए एक मार्गदर्शक ढांचे के रूप में कार्य करता है। समृद्ध भारतीय संस्कृति और मूल्य प्रणाली ने हमेशा प्रकृति की पूजा की है और पर्यावरण की रक्षा की है। भारत में शांति पथ की संस्कृति है, जिसमें पर्यावरण के हर पहलू को संरक्षित करने का संकल्प लिया जाता है, जो प्रकृति के प्रति हमारी प्रतिबद्धता को दर्शाता है। इन मूल्यों को इस मानक संचालन प्रक्रिया (SOP) और क्लाइमेट स्मार्ट ग्राम पंचायत कार्ययोजना में आत्मसात किया गया है जो जमीनी स्तर पर एक ऐसे परिवर्तन की शुरुआत करेगा जो सतत और जलवायु के प्रति जागरूक हो।

मैं क्लाइमेट स्मार्ट ग्राम पंचायत कार्य योजना के विकास के लिए एक विस्तृत एसओपी तैयार करने के लिए पर्यावरण, वन और जलवायु परिवर्तन विभाग, उत्तर प्रदेश सरकार, वसुधा फाउंडेशन और गोरखपुर एनवायरनमेंट एक्शन ग्रुप (जीईएजी) की सराहना करता हूं।

मैं उत्तर प्रदेश के सभी विभागों से जलवायु अनुकूल विकास के लिए प्रयास करने और संरक्षण के पारंपरिक मूल्यों में निहित जीवन के स्थायी तरीके को बढ़ावा देने का आग्रह करना चाहता हूं। मुझे उम्मीद है कि जलवायु स्मार्ट ग्राम पंचायत कार्य योजनाओं के विकास के लिए मानक संचालन प्रक्रियाओं (एसओपी) का कार्यान्वयन इस प्रयास में महत्वपूर्ण भूमिका निभाएगा।

11-12-2024

(ओम प्रकाश राजभर)
मंत्री
पंचायतीराज तथा अल्पसंख्यक कल्याण,
मुस्लिम वक्फ एवं हज,
उत्तर प्रदेश।

Message

डा. अरुण कुमार

एम.बी.बी.एस.(लखनऊ)
डी.एन.बी.,एफ.सी.जी.पी.
राज्य मंत्री (स्वतंत्र प्रभार)
वन, पर्यावरण, जन्तु उद्यान एवं
जलवायु परिवर्तन विभाग
उत्तर प्रदेश।

कक्ष संख्या - एफ ब्लाक 1/2
प्रथम तल, बापू भवन,
उत्तर प्रदेश शासन, लखनऊ
कार्यालय : 0522-2235740
सी0 एच0 : 0522-2214800

संदेश

हमारे दैनिक जीवन में जलवायु संकट की उभरती हुई गम्भीर वास्तविकता है। हमारा देश नवीन पर्यावरण कार्यक्रमों का वैश्विक समर्थक रहा है। उत्तर प्रदेश इस गम्भीर संकट के खिलाफ भारत की लड़ाई का नेतृत्व करने के लिए प्रतिबद्ध है। जलवायु परिवर्तन पर राज्य कार्य योजना (एसएपीसीसी) के तहत, उत्तर प्रदेश सरकार ने समन्वय और निगरानी के लिए जलवायु परिवर्तन सेल की स्थापना करके राज्य की जनता को जलवायु परिवर्तन की प्रतिकूल घटनाओं से बचाने की पहल की है। इसका उद्देश्य ग्रामीण क्षेत्रों में जलवायु लचीलापन हासिल करना, विकासात्मक आकांक्षाओं और प्रकृति संरक्षण के बीच एक संतुलन बनाना है।

मैं ग्राम पंचायतों के लिए जलवायु–स्मार्ट कार्य योजना बनाने के लिए एक विस्तृत एसओपी तैयार करने के लिए वसुधा फाउंडेशन और गोरखपुर पर्यावरण एक्शन ग्रुप (जीईएजी) की सराहना करता हूं। मेरा दृढ विश्वास है कि ग्राम पंचायतों के लिए सीएसजीपीएपी ग्रामीण स्तर पर जलवायु कार्यवाही में व्यक्तिगत योगदान को प्रेरित करेगा, जिससे पूरे ग्रामीण समुदाय का उत्थान होगा। जलवायु–स्मार्ट ग्राम पंचायत कार्य योजना जलवायु–लचीले ग्रामीण विकास को बढ़ावा देने के सरकार के प्रयासों की क्षमता को उजागर करेगी।

जलवायु–स्मार्ट ग्राम पंचायत कार्य योजनाओं को विकसित करने में एसओपी के प्रभावी उपयोग के लिए फाउंडेशन को मेरी हार्दिक शुभकामनाएं।

11.12.2024
(डॉ० अरूण कुमार)
राज्य मंत्री (स्वतंत्र प्रभार),
वन, पर्यावरण, जन्तु उद्यान
एवं जलवायु परिवर्तन विभाग,
उत्तर प्रदेश।

श्रीनिवास कृष्णास्वामी,
सी0ई0ओ0 वसुधा फाउण्डेशन,
नई दिल्ली।

Message

मनोज कुमार सिंह
मुख्य सचिव
Manoj Kumar Singh
Chief Secretary

उत्तर प्रदेश शासन
लोक भवन, लखनऊ - 226001
Government of Uttar Pradesh
Lok Bhawan, Lucknow-226001

Message

India's remarkable growth in renewable energy and sustainability has set a benchmark for climate resilient development. The state of Uttar Pradesh is already playing and will continue to play a pivotal role in this transition and sustainable growth under the leadership of the Honourable Chief Minister, Shri Yogi Adityanath Ji. The Government of Uttar Pradesh is diligently addressing the climate impact on communities, particularly focusing on uplifting rural areas.

The Uttar Pradesh State Action Plan on Climate Change (SAPCC) encompasses seven missions with well-planned actions and strategies to address the climate impacts. The actions specifically concentrate on grassroots-level initiatives, as demonstrated by endeavors such as the Sustainable Agriculture Mission.The inclusion of villages into the broader climate action strategy embracing a bottom-up approach is a significant step toward inclusive growth. The initiative to develop the Standard Operating Procedure (SOP) for Development of Climate Smart Action Plan (CSAP) for Gram Panchayats is reflective of this. This comprehensive SOP intends to address climate issues on rural communities and formulate action plans to build resilience and climate smart villages. The alignment of CSAP with the Gram Panchayat Development Plan (GPDP) will enhance people's participation in the sustainable development journey of Uttar Pradesh. These efforts have been designed to be aligned with the principles of Mission LiFE (Lifestyle for Environment) pioneered by the Honourable Prime Minister of India.

I express my appreciation for the commendable efforts of the Department of Environment, Forest and Climate Change, Vasudha Foundation and Gorakhpur Environmental Action Group (GEAG) in developing the SOP for climate-resilient Gram Panchayats in Uttar Pradesh. I firmly believe that under the CSAP for Gram Panchayats, rural communities will serve as environmental stewards by elevating their awareness levels and demonstrating their commitment.

I wish for the successful implementation of the SOP for the development of Climate Smart Action Plans in Gram Panchayats and integrate climate action with development activities. This reflects a commitment to sustainable development, environmental conservation, and climate justice to protect the vulnerable from the impacts of climate change.

16.12.24.

(Manoj Kumar Singh)

Office Address : Room No. 101 'B' Wing, Lok Bhawan, U.P. Secretariat, Lucknow-226001
Tel.: 0522-2289212, 2289296; Fax: 0522-2239283; Resi.: 0522-2239461, 2237299; Email: csup@nic.in
Website: https://up.gov.in/

Message

डा. के.वी. राजू
आर्थिक सलाहकार, मा. मुख्यमंत्री,
उत्तर प्रदेश

Dr. K.V. Raju
Economic Advisor to Hon'ble Chief Minister,
Uttar Pradesh

कार्यालय
कक्ष सं0–522, पंचम तल, लाल बहादुर शास्त्री भवन
लखनऊ, उत्तर प्रदेश–226001

Room No. - 522, Fifth floor, Lal Bahadur Shastri
Bhawan, Lucknow, Uttar Pradesh-226001
Phone No.:0522-2238226, 2215509
E-mail: kvraju2008@gmail.com

पत्रांक: 139/E.A-CM/2024

दिनांक: 16/12/2024

Dr. K.V. Raju
Economic Advisor to the Hon'ble Chief Minister, Uttar Pradesh

Message

The state of Uttar Pradesh contributes significantly to India's growing economy. A large portion of the state's population is engaged in agricultural and allied activities, which contribute approximately 42% to the Uttar Pradesh Gross State Domestic Product (GSDP). Climate change has adverse impacts on various sectors which includes agricultural productivity and livelihoods of rural communities. There is an urgent need for action at the village level to safeguard livelihoods, promote sustainable agriculture practices and build climate resilience while reducing greenhouse emissions.

The pivotal role played by rural areas in the economic contribution of the state underscores the importance of sustainable and inclusive planning at the panchayat level. The Standard Operating Procedure (SOP) for the Development of Climate Smart Action Plan (CSAP) for all the 58,000 Gram Panchayats of Uttar Pradesh, covering a population of approximately 16 Crore serves as a guiding framework to strengthen climate resilience by enhancing adaptive capacity to climate impacts on agriculture, livelihoods, and natural resources. A noteworthy feature of the CSAP for Gram Panchayats is its potential to generate green livelihoods and entrepreneurship opportunities that will boost the income of the population. Further, I believe that the climate smart Gram Panchayats will significantly contribute towards the State's goal of reaching 1 Trillion dollar economy by 2027.

Additionally, I am happy to see that both the SOP will enable the CSAPs to be aligned with the Sustainable Development Goals (SDGs) while fostering social welfare and inclusive development at the grassrootlevel. The CSAP is intended to promote a sustainable way of life that can potentially ensure both economic development and environmental protection. These plans will play a pivotal role in empowering the capacity of Panchayati Raj Institutions (PRI) and enhancing governance for sustainable economic growth. Further, I am delighted to share that the SOP also provides guidance to converge CSAP with the Gram Panchayat Development Plan (GPDP) to ensure streamlining of schemes and budget allocation.

I commend the collaborative efforts of the Department of Environment, Forest, and Climate Change, Vasudha Foundation, and Gorakhpur Environmental Action Group (GEAG) for developing the SOP for the Development of the Climate Smart Gram Panchayats Action Plan for Uttar Pradesh.

I extend my best wishes for the successful implementation of the SOP for the development of Climate-Smart Gram Panchayat Action Plans. I hope all the relevant departments collaborate effectively to achieve the noble goals of sustainable development by aligning climate actions at the village level with comprehensive developmental plans.

This SOP will appear in both English and Hindi languages, and it will also be an e-version for wider and free circulation.

16/12/2024
(के० वी० राजू)
आर्थिक सलाहकार
(मा० मुख्यमंत्री जी)
उत्तर प्रदेश शासन

Message

Shri Manoj Singh, IAS

Additional Chief Secretary (Former),
Environment, Forest & Climate Change
Government of Uttar Pradesh

Climate change is a pressing global issue with widespread impacts across various sectors, hindering the development of nations. Fluctuations in seasons, extreme weather events, and altered rainfall patterns directly affect vital activities such as agriculture, significantly impacting productivity & yield of foodgrains and other agriculture products. This challenge disproportionately affects small and marginal farmers, posing a threat to overall food security. Additionally, the repercussions extend to other sectors, affecting adaptive capacity, health, and livelihoods. The environmental degradation resulting from developmental activities further exacerbates the situation, compromising natural resources and the climate system. It is our shared responsibility to secure the future by urgently addressing the challenges posed by climate change.

In Uttar Pradesh, the problem of climate change is heightened due to the large population relying on agriculture, forests, and agri-forests for their livelihoods. Consequently, a bottom-up approach is crucial, beginning at the village administration level. Recognizing this need, the Government of Uttar Pradesh is committed to fostering inclusive, sustainable, and climate-friendly development. In line with this commitment, the Standard Operating Procedure (SOP) for the Development of Climate-Smart Gram Panchayat Action Plans (CSGPAP) at the Gram Panchayat level has been formulated. This initiative aims to localize climate action and empower communities to address climate change at the grassroots level.

Using this SOP as a guiding framework, Climate-Smart Gram Panchayat Action Plans will be devised across the state. The state government's objective is to establish climate-resilient villages and promote adaptive practices, emphasizing inclusive participation in the planning process. This collaborative approach involves all stakeholders, underscoring the importance of their engagement in building climate resilience in rural Uttar Pradesh.

Ensuring the resilience of livelihoods, fostering a clean and green environment, and achieving energy and food security are essential for a sustainable and climate-resilient future. I extend my appreciation to the Department of Environment, Forest, and Climate Change, as well as their collaborators Vasudha Foundation and GEAG, for their dedicated efforts in developing CSGPAP for the villages of Uttar Pradesh.

I am confident that this Standard Operating Procedure (SOP) will prove invaluable in the development of Climate-Smart Gram Panchayat Action Plans (CSGPAP) for Gram Panchayats in the state. Emphasizing climate resilience, I encourage a collective approach towards fostering an environmentally conscious lifestyle that promotes the overall well-being of our communities.

(Manoj Singh)

Preface

Shri Ashish Tiwari, IFS

Secretary, Environment (Former),
Forest & Climate Change Department,
Government of Uttar Pradesh

The state of Uttar Pradesh, endowed with abundant rivers, natural forests, rich biodiversity and fertile soils, is one of the most populous regions facing the global challenge of climate change impacting social, economic and environmental aspects. As a result, the livelihood and health of the residents here are being affected.

In response to disruptions caused by climate change and to align with national climate goals, the Government of Uttar Pradesh has implemented various policy measures focusing on sectors such as agriculture, water, renewable energy and sustainable transportation. Addressing the local level impacts of climate change, Uttar Pradesh has formulated a State Action Plan on Climate Change (SAPCC) 2021-2030 which includes nine missions dedicated to promoting climate action. Additionally, initiatives such as organizing Conference of Panchayats (COP) have been taken to identify and strengthen climate action at the Panchayat level.

Initiative has been taken to develop a Standard Operating Procedure (SOP) for creating Climate Smart Gram Panchayat Action Plans (CSGPAP) to empower Panchayats to address climate change issues while truly localizing climate action in the state and enhancing resilience. This SOP provides a comprehensive roadmap for proactive adaptation and mitigation actions at the Gram Panchayat level, which plays an important role in addressing the negative drivers of climate change at the local level. It involves coordination between all stakeholders, panchayat level institutions and communities, ensuring that development at the local level is sustainable, green and climate-friendly.

CSGPAP is being developed in conjunction with Gram Panchayat Development Plan (GPDP) to optimize available resources, address climate and environmental concerns. This integrated approach aims to promote climate-resilient villages in Uttar Pradesh, combined with the LiFE mission to ensure that Gram Panchayats become truly climate-smart.

The Standard Operating Procedure (SOP), presented by the Department of Environment, Forest and Climate Change, Government of Uttar Pradesh, will act as a guiding document to empower Gram Panchayats to not only build resilience but also contribute to the green development of Uttar Pradesh. I express my special appreciation to Vasudha Foundation, New Delhi and Gorakhpur Environmental Action Group for their support in developing both the SOP and CSAP documents.

Contents

Standard Operating Procedure (SOP) Executive Summary

Villages in India are vulnerable and at-risk of climate change impacts like increasing temperatures over a longer duration, variation in intensity and frequency of rainfall, disasters like heatwaves, droughts, and cold waves, etc. This further critically impacts agriculture, water resources/supply, health, energy, livelihood, environment, and biodiversity in the Gram Panchayats. Thus, there is an **urgent need to make Gram Panchayats climate-proof, smart, resilient and sustainable**.

Climate Smart Gram Panchayat Action Plan (CSGPAP)

Climate Smart Gram Panchayat Action Plan (CSGPAP) for Gram Panchayats envisions "Climate Smart Villages (CSVs)" with enhanced adaptive capacities and a proactive mitigative approach towards climate change. It aims to foster climate-resilient agriculture, water conservation, a circular economy, access to clean and reliable energy, sustainable mobility solutions, good health, enhanced/diversified livelihood opportunities, and flourishing environment and biodiversity.

The Climate Smart Gram Panchayat is an **effort to build a collaborative, cooperative, inclusive, and sustainable community** moving together for a climate-resilient future. It also aims to initiate **climate -conscious and sustainability-focused transformation** at individual, household and community levels.

Climate Smart Gram Panchayat Action Plan (CSGPAP) for 43 Gram Panchayats

As a **pilot approach** in this direction, **Climate Smart Gram Panchayat Action Plans are being developed for 43 Gram Panchayats** of Uttar Pradesh. These 43 Gram Panchayats (GPs) are located in all major agro-climatic zones. Multi-criteria rapid assessment was conducted to shortlist 'Climate-friendly' GPs from the highly vulnerable districts of Uttar Pradesh as per 'State Action Plan for Climate Change of Uttar Pradesh (SAPCC 2.0)' and the Report on 'Scoping Assessment for Climate Change Adaptation Planning in Uttar Pradesh' by DoEFCC, GoUP.

The Climate Smart Gram Panchayat Action Plan for the selected **43 GPs will cover around 170+ villages and 2.5 lakh people.** The necessary ground level assessment including data collection and validation and identification of issues is completed and CSGPAP for the 43 GPs is at various stages of development.

To **scale up this endeavor for all the ~58,000 GPs (approx.) in Uttar Pradesh, a Standard Operating Procedure (SOP) is developed** as a step-by-step approach to be used by Gram Pradhans (or any other stakeholder) to develop Climate Smart Gram Panchayat Action Plan for their respective Gram Panchayats.

Standard Operating Procedure (SOP)*

The SOP provides the need and rationale for developing CSGPAP. The SOP also **guides in integrating CSGPAP with the Gram Panchayat Development Plan (GPDP)** (see section 1.2). It explains in detail the process of developing the CSGPAP as well provides the key contents of a CSGPAP.

Further, the preparatory activities to be undertaken for the development of the CSGPAP are also mentioned in the SOP. A detailed **matrix highlighting the roles and responsibilities (see section 2.4)** of various stakeholders at various stages of CSGPAP including data collection and analysis, plan development, plan approval, endorsement, and final launch is also incorporated.

---

* The SOP has been developed through a rigorous approach of multi-stakeholder involvement and review process. Multiple rounds of stakeholder consultations and dialogue with experts from academia, line departments, sectoral experts, CSOs, community, private role players, and others were organized to strengthen and refine the SOP.

The SOP also provides **a proposed bucket list of interventions** (along with phased targets and cost estimation) (see Chapter 3) from which interventions can be tailor-made to **GP's agro-climatic zone, issues, challenges, and opportunities.**

For an effective and realistic CSGPAP, it is important to identify, understand, and analyze GP-specific gaps, challenges, and opportunities from a climate change and resilience perspective.

A **two-pronged approach** has been proposed to collect data and accurate information about the Gram Panchayats through:
a. Community perception survey
b. Government data on various aspects

Use of SOP

The SOP is developed as a **self-explanatory manual allowing the Gram Pradhans** and community members, and student volunteers to understand the SOP and prepare CSGPAP for their Gram Panchayats, contextual to the GP-specific needs. However, the **Gram Pradhans can also seek necessary assistance from relevant line departments and local Civil Society Organisation (CSOs)** in understanding the SOP and how to adopt it to prepare CSGPAP.

The District Forest Officers (DFOs) would be empowered to provide the necessary technical and other support required to the Gram Pradhans and other community members in their endeavor to prepare CSGPAP for their respective Gram Panchayats. The DFOs could also involve other district, block and panchayat level officials as required to provide the necessary technical assistance in the plan preparation.

1

Mainstreaming Climate Action into GP-level Development Planning

1 Mainstreaming Climate Action into GP-level Development Planning

1.1 Why? – Need & Rationale of the Action Plan

Over the years, we have all witnessed changes in not only the weather conditions but also its impacts on the key sources of rural income like agriculture, livestock and livelihoods dependent on natural resources. We have not only seen an increase in temperatures but also witnessed an increase in the number of hot/warm days, a reduction in cold days, changes in rainfall intensity and shifts in seasons. This in turn has impacted agriculture yield and livestock productivity, cropping cycles, cultivation practices, etc. Further, the water availability has continuously reduced and the green spaces have shrunk. These changes have not only impacted our livelihoods but have also affected our lives, health and social well-being.

There is no doubt that we are experiencing transformational times, when air-conditioners or air-coolers are needed on most days throughout the year, water bodies are shrinking with each passing day, and we are constantly wondering what the next agricultural output will look like.

These changes and their adverse impacts that are felt starkly can be attributed to the over-exploitation of Mother Earth and unsustainable consumption patterns by humans. This in turn has resulted in what is known as climate change and global warming.

Furthermore, it has been established scientifically that climate change is primarily driven by human activity. This has been confirmed by several well-known reports, global research institutes, and countries around the world.

The considerable use of fossil fuels and excessive demand for a wide range of products and services has contributed to climate change and its consequences. Historically, people prepared their own snacks and clothing, as well as furniture, at home. However, nowadays everything is produced at the industrial level in large quantities, resulting in pollution and over-exploitation of natural resources. Moreover, the paper packaging that was common earlier has been replaced with plastic wrapping which has led to global plastic menace.

While introducing the Mission Lifestyle for Environment (LiFE), our Hon'ble Prime Minister, Shri Narendra Modi highlighted the significance of individual action in bringing a change. Taking his commitment further, we as a community can help the state of Uttar Pradesh and our country in taking timely action against climate change.

A Climate Smart Gram Panchayat Action Plan for Gram Panchayats does exactly that by providing a roadmap that will help reduce vulnerability, and build resilience while addressing the Gram Panchayat's emissions.

Climate Smart Gram Panchayat Action Plan will **COMPLEMENT THE GPDP** by mainstreaming environment and climate

STRENGTHEN CLIMATE RESILIENCE by increasing adaptive capacity[1] and coping capacity[2] to climate impacts

Reduce **DEPENDENCE** on **CONVENTIONAL ENERGY SOURCES** (fossil fuels)

Enhance **ACCESS TO RELIABLE, AFFORDABLE** and **SUSTAINABLE ENERGY**

IMPROVE NATURAL RESOURCES: forests, wetlands, water bodies and soil

ELIMINATION OF AIR, WATER and **LAND POLLUTION**

SUSTAINABLE AGRICULTURAL PRACTICES with improved yields and productivity

ENHANCE INCOME and **REVENUE GENERATION** through green livelihoods

POVERTY ALLEVIATION, SOCIAL WELFARE and **INCLUSIVE DEVELOPMENT**

IMPROVE SANITATION with **ENHANCED HEALTH CO-BENEFITS** for all

Find **LOCAL CHAMPIONS** for climate action and adaptation actions

1. Adaptive capacity is the ability of a system to evolve in order to accommodate climatic changes or to expand the range of variability with which it can cope.
2. Coping capacity is the ability of a system (natural or human) to cope with a natural hazard & is determined by the ability of the system to adjust to a disturbance, moderate potential damage, take advantage of opportunities, and adapt to the consequences.

1.2 Convergence of Climate Smart Gram Panchayat Action Plan (CSGPAP) with Gram Panchayat Development Plan (GPDP)

The Gram Panchayat Development Plan (GPDP) details the proposed activities for the development of the village under the nine themes of LSDG (Local Self Development Goals) and 29 subjects under the Eleventh Schedule of the Indian Constitution[3]. The GPDP also identifies sources of financing for the proposed activities.

The Climate Smart Gram Panchayat Action Plan will supplement and complement the GPDP by:

a. Broad-basing existing development initiatives and activities with a climate perspective

b. Dovetailing ongoing national and state programs on climate change with the proposed development activities in the GPDP
(e.g., 8 Missions under the National Action Plan on Climate Change (NAPCC), missions/ activities under the Uttar Pradesh State Action Plan on Climate Change (SAPCC), etc).

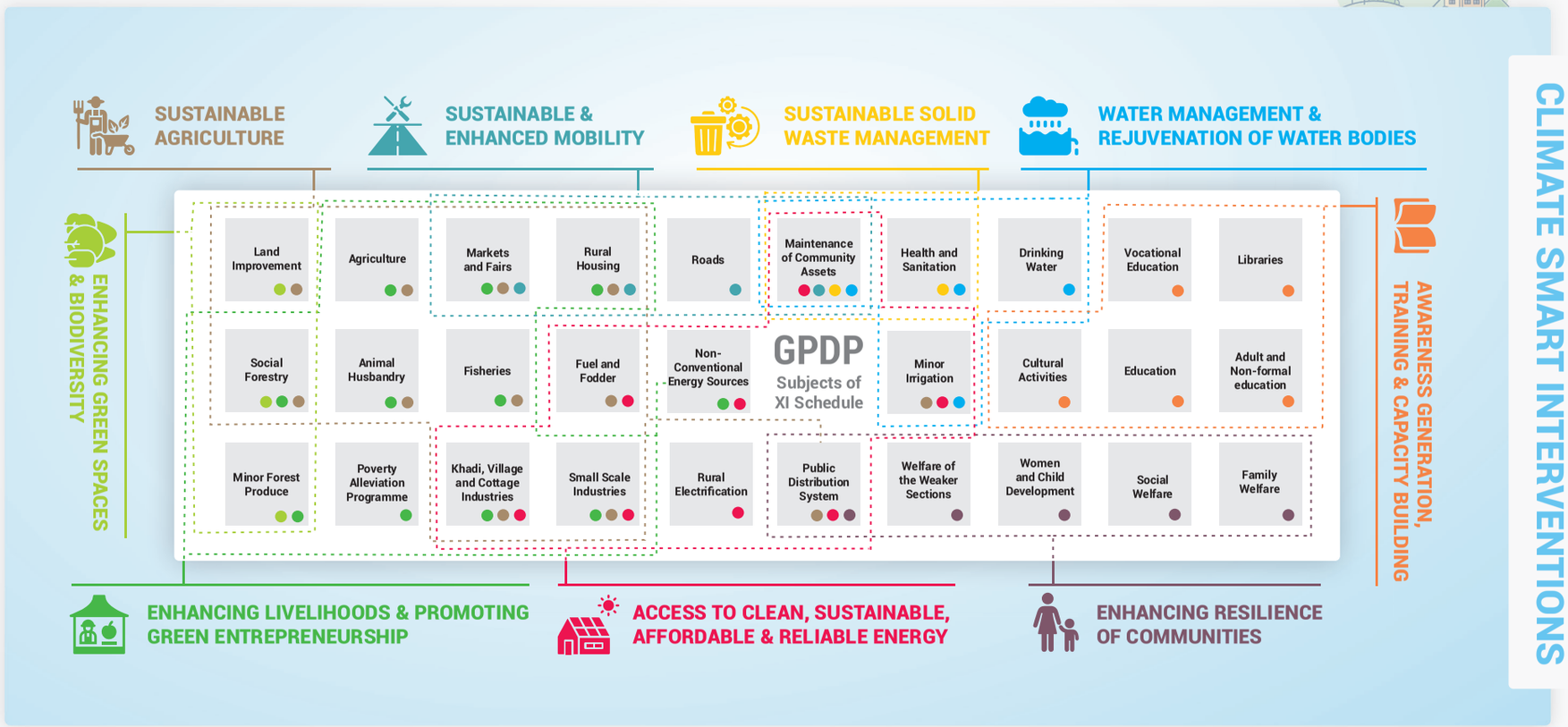
The interventions and annual targets under CSGPAP can be implemented in convergence with the planned activities of the GPDP. The existing budgetary allocations earmarked for certain programs under the GPDP can be used for climate adaptation and mitigation activities proposed in the CSGPAP. For example, water body rejuvenation carried out through schemes like Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) will have climate change adaptation benefits.

Similarly, funds earmarked under the "non-conventional energy" subject of the Eleventh Schedule (basis for GPDP) can be utilized to scale up renewable energy deployment (as illustrated in the following figure). The additional activities proposed in the CSGPAP can be financed through relevant Central and State schemes, missions and programs as well as from Corporate Social Responsibilities (CSRs) and private sector engagement.

3. 73rd Amendment: Decentralization of powers to the Local Self Government (Panchayati Raj Institutions); https://www.mea.gov.in/Images/pdf1/S11.pdf

Climate Smart and Sustainable Gram Panchayats by 2035

Mainstreaming Climate Action with Development



1.3 Elements of the Action Plan

- Executive Summary
- Gram Panchayat Profile
- Carbon Footprint Profile
- Key Issues & Resulting Impacts Identified in the GP
- Proposed Recommendations
- Sources of Financing
- Alignment with Sustainable Development Goals (SDGs) and Nationally Determined Contributions (NDCs)
- Way Forward

1.4 Process for Action Plan Development

1. Data Collection
2. Analysis & Assessments
3. Preparation of Action Plan
4. Sources of Finance & Convergence with GPDP
5. Plan Endorsement
6. Plan Approval
7. Formal Submission
8. Plan Launch

2

Preparatory Activities for Action Plan (CSGPAP) Development

2 Preparatory Activities for Action Plan (CSGPAP) Development

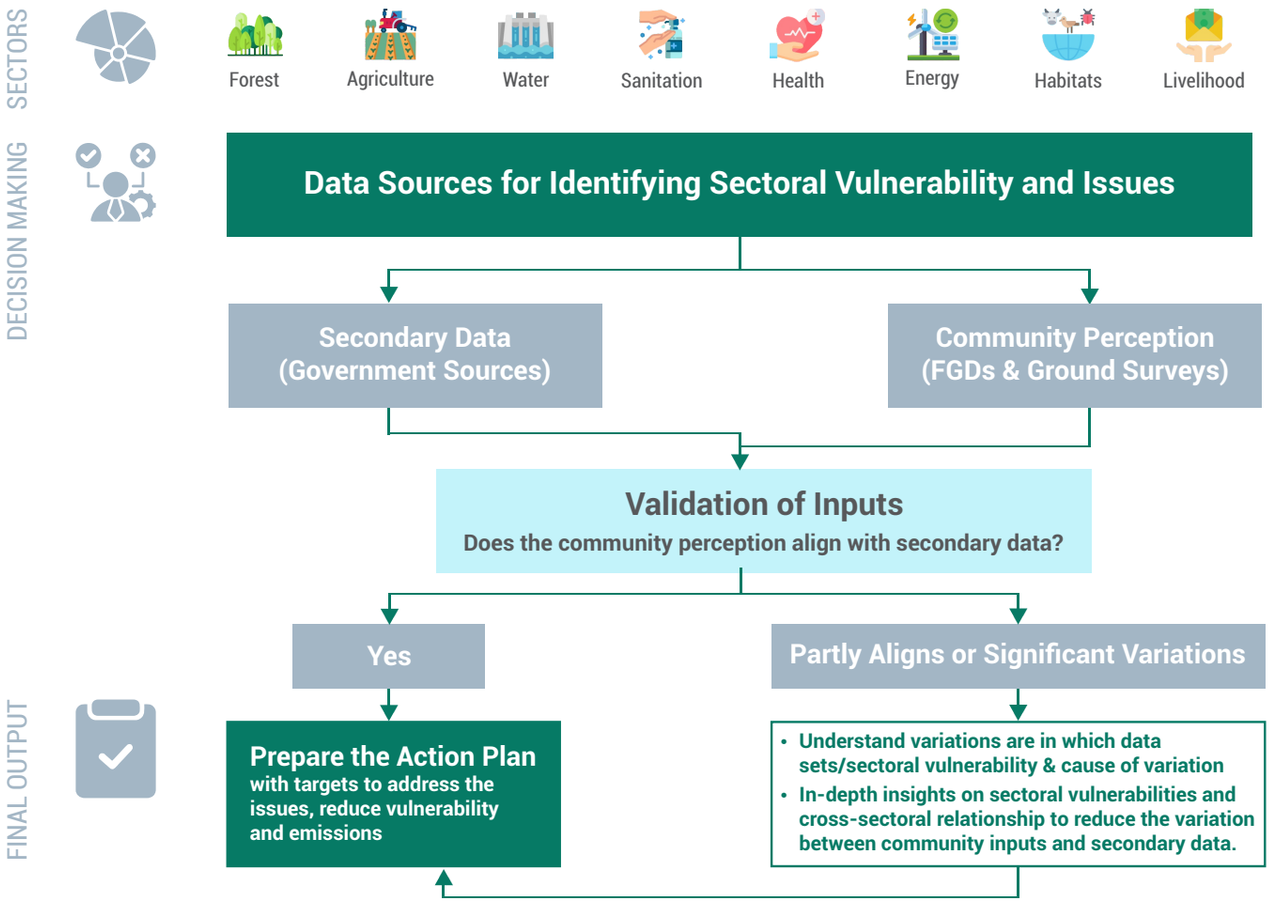
2.1 Understanding What Needs to be Done?

Knowing key climate issues and problems of the GP

To develop an effective Climate Smart Gram Panchayat Action Plan that elaborates the GP-specific action points and interventions, it is important to identify and understand the existing and potential issues, gaps and opportunities in the GP through a climate lens.

This requires developing an understanding of the climate change impacts, vulnerabilities and risks for the GP, as well as the key sources of carbon footprint (climate change drivers) within the GP boundary. The various tools and techniques to conduct these assessments are described in the sections below (sections 2.1 and 2.2).

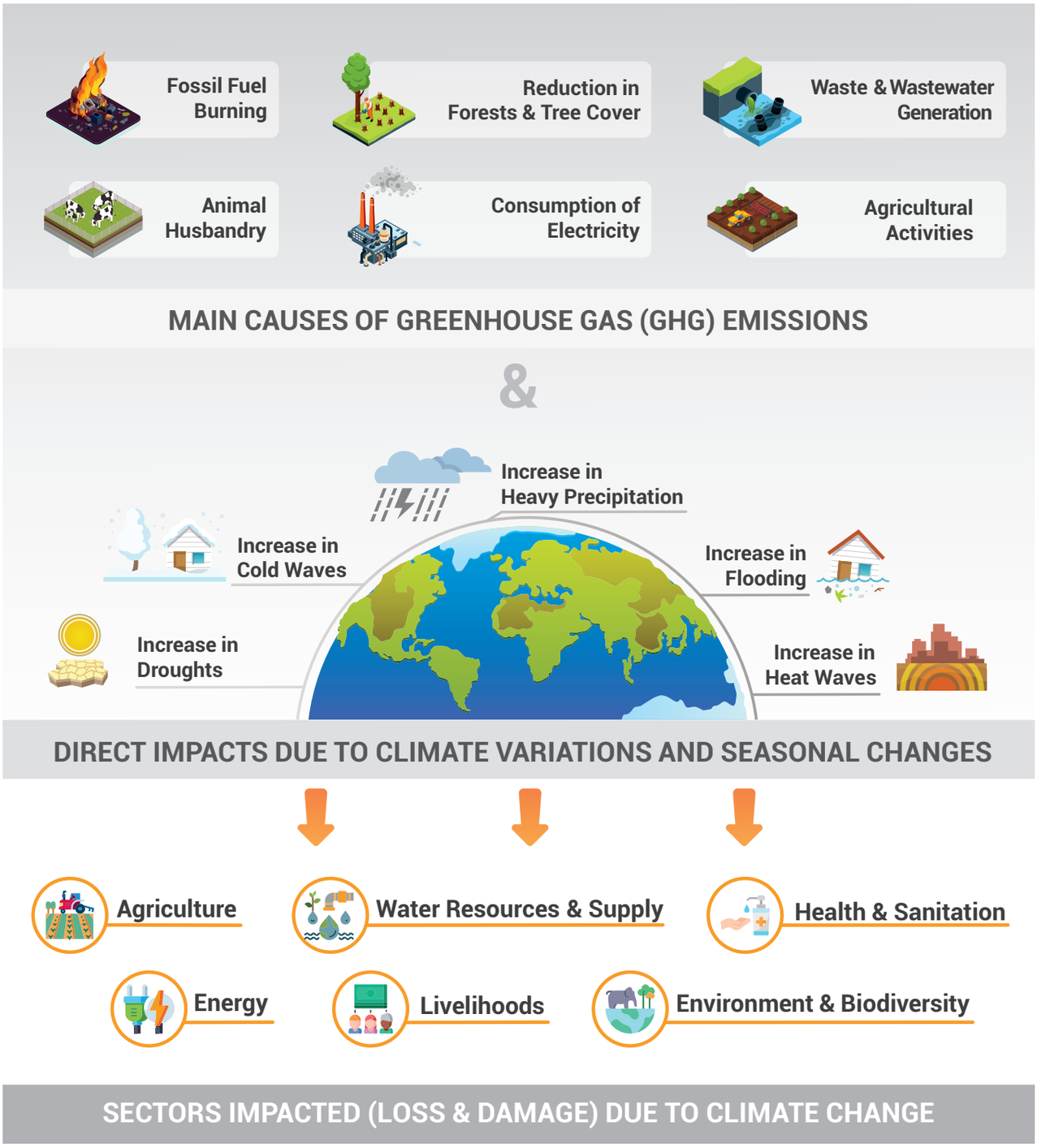
To achieve this, a two-pronged approach is needed:
a) understanding the community perception and,
b) by collating government data on various aspects.
Ideally, the information collected from the community should corroborate with the government data; in case of variations, the following decision matrix can be adopted to deep dive into reasons for mismatch and possible solutions.



2.2 Mapping GP-level Climate Change Impacts, Vulnerabilities and Risks

2.2.1 What are the Climate Change Impacts and Resulting Vulnerabilities and Risks?

Climate variability results in rising surface temperature, changes in rainfall patterns, and an increase in the frequency as well as the intensity of extreme weather events such as heatwaves, floods, droughts, etc. Climate variability and its consequences have far-reaching implications on social, economic, and environmental aspects of human life.



Climate change impacts agriculture, water, energy, health and sanitation, livelihoods, environment and biodiversity, etc. All these sectors are vulnerable to varying degrees. Vulnerability here is defined as "the degree to which a system is susceptible to and unable to cope with, adverse effects of climate change, including climate variability and extremes." The functional criteria of vulnerability are exposure, sensitivity and adaptive capacity[4].

Global warming, reaching 1.5°C in the near-term, would cause unavoidable increases in multiple climate hazards and present multiple risks to ecosystems and humans (very high confidence)[5].
The level of risk will depend on concurrent near-term trends in vulnerability, exposure, level of socioeconomic development and adaptation (high confidence). If these risks and vulnerabilities are not addressed, the loss and damage to people's lives and livelihoods and to their development progress can increase manifold.

2.2.2 How to Identify Vulnerabilities and Risks?

The following tools and techniques can be employed in the GP to gather information, analyze, identify and understand GP-specific:

- **impacts of climate change and,**
- **major sectoral and socio-economic vulnerabilities and risks**

i. **Desk Research** to conduct climate variability trends and analysis over the last 2-3 decades and understand GP-specific agro-climatic zone and characteristics (temperature, rainfall, soil type, crops grown, etc.) through secondary information (government records/portals as given in Annexure I).

ii. **Primary Survey and Focus-group Discussions (FGDs)** to collect information on impacts experienced and factors amplifying vulnerability, from local people (villagers) and selected target groups (vulnerable groups, especially village elders) through primary survey questionnaire (attached in Annexure II). In addition to this, self-assessment tools (which are designed in tandem with the primary survey questionnaire) aim to capture the perception of the local community on climate variations and observed impacts.

Self-Assessment Tools[6] (listed below) follow a participatory approach to involve local communities in recording their experiences and observations.

a. **Seasonal Mapping and Climate Implications** - Participatory (questionnaire) tool to collect perceptions of the local people regarding seasonal variations (temperature/rainfall) over the years.

4. Exposure is the degree to which people and the things they value could be affected by hazards; sensitivity is the degree to which they could be harmed by that exposure; and adaptive capacity is the degree to which they could mitigate the potential for harm by taking action to reduce exposure or sensitivity.
5. IPCC AR6: https://ipcc.ch/report/ar6/wg2/chapter/summary-for-policymakers/
6. As mentioned above, Self-Assessment tools are a part of the larger 'Primary Survey Questionnaire'. These self-assessment tools / templates will help the Gram Panchayat to fill-up the main 'Primary Survey Questionnaire' and carry out various analyses to develop the Action Plan.

PERCEPTION-BASED SEASONAL VARIATIONS DUE TO CLIMATE CHANGE

Observed Climate Variability (Community Perception)[7]		
	Has there been a change in duration (no.) of summer months/days over last 10 years?	**Has there been any change in temperature during summer months over last 10 years?**
YES		
If yes, there is an increase or decrease?		
NO		
	Has there been a change in duration (no.) of monsoon months/days over last 10 years?	**Has there been any change in intensity[8] of rainfall over last 10 years?**
YES		
If yes, there is an increase or decrease?		
NO		
	Has there been any change in duration (no.) of winter months/days over last 10 years?	**Has there been any change in temperature during winter months over last 10 years?**
YES		
If yes, there is an increase or decrease?		
NO		

b. Disaster Mapping & Risk Record - Participatory (questionnaire) tool to collect perceptions of the local people regarding the occurrence of climate disasters and the resulting impact on human lives, housing, agriculture, infrastructure, and the environment.

7. Community perception of temperature and rainfall during summer, winter and monsoon months is mapped by marking a tick mark against the response (Yes or No) for each of the question. Further, if the change is experienced (i.e., Yes is the response), then a follow-up question maps whether there is an increase or decrease in temperature or number of season days/months

8. Intensity indicating amount of rainfall in particular number of days i.e., for e.g., increased intensity meaning high amount of rainfall in lesser number of days

Annual Disaster Mapping over the months[9]												
Disaster	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Water-Logging												
Flood												
Drought												
Heat Waves												
Hail Storms												
Cold Wave												
Lightning & Thunder Storm												
Gail												

Mapping sectoral impact of disasters							
Disaster	**Vulnerable Locations[10]**	**Impact on Sectors (Indicators are defined after the table*)[11]**					
		Human Life	**Housing**	**Agriculture & Livestock**	**Other Livelihoods**	**Community Infrastructure (Physical and Social)**	**Natural Resources & Environment**
Water-Logging							
Flood							
Drought	NA						
Heat Wave	NA						
Hail Storms	NA						
Cold Wave	NA						
Lightning & Thunder Storm	NA						
Gail	NA						

NA – Not Applicable

9. Occurrence of each disaster is mapped by marking a tick mark against all relevant months when that disaster occurs
10. The specific locations where the disaster impact is observed will be listed
11. Sectoral impacts of each disaster is mapped by marking a tick mark against all relevant sectors which have been impacted due to that disaster

*Sectoral Impact Indicators:

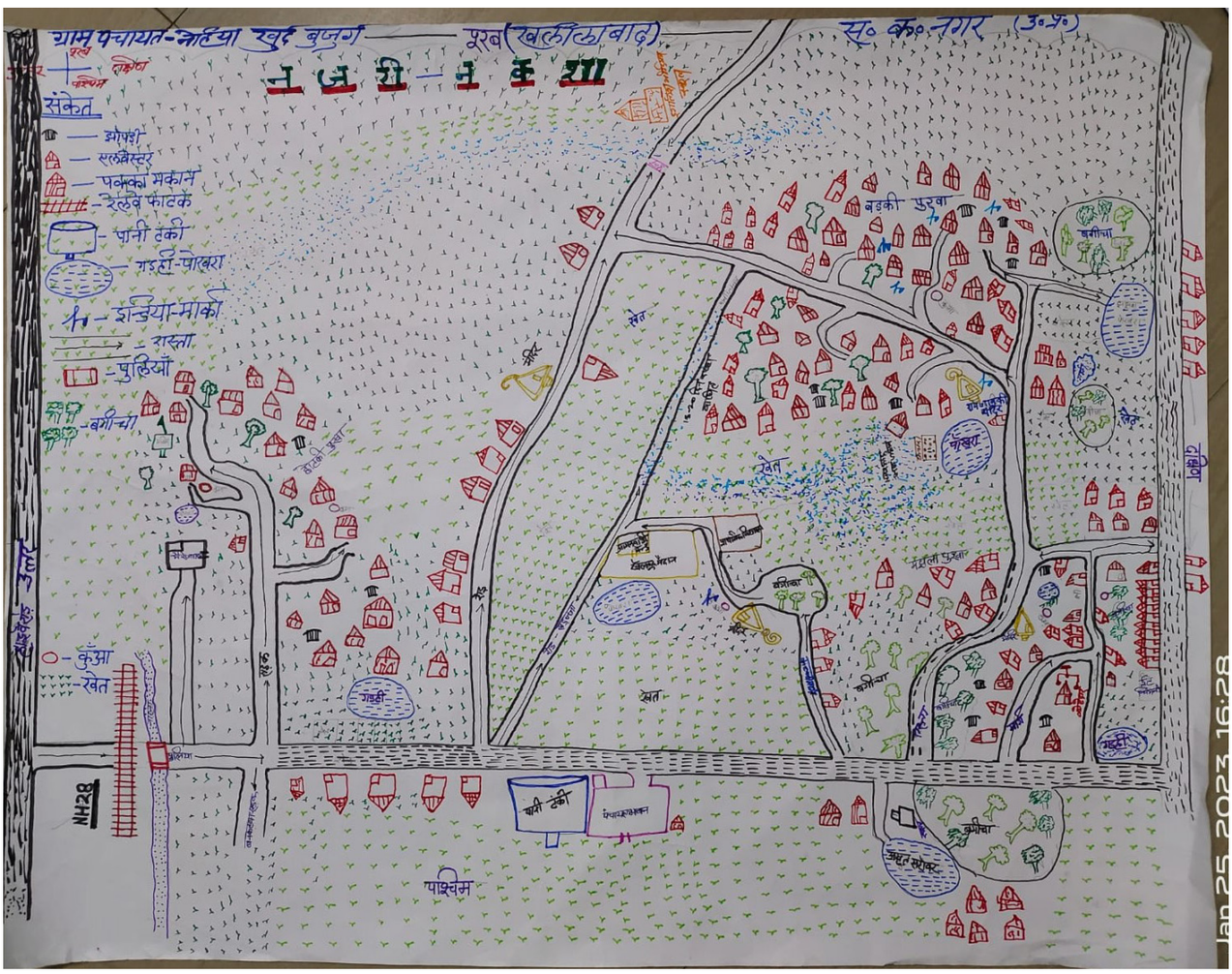
- **Human Life -** (Deaths, injuries, permanent disability)
- **Housing -** (Extent of damage, type of housing, type of damage)
- **Agriculture & Livestock -** (Extent and type of damage to crop and livestock yield, productivity, death of livestock)
- **Other Livelihoods -** (Impact on cottage industries, business failure, employment loss, income loss for daily wage laborers)
- **Community Infrastructure (Physical and Social) -** (extent and type of damage to water supply, drainage/ sewerage network, transportation & communication, electric supply, health, education, administrative, community/ religious facilities)
- **Natural Resources & Environment -** (Extent and type of damage to water resources, land, vegetation/forestry, biodiversity)

iii. Social and Resource Mapping

a. **Social Map** depicts habitation patterns and the nature of housing and social infrastructure such as roads, drainage systems, schools, drinking water facilities, etc. It is prepared by local people and reflects their perceptions.

b. **Resource Map** focuses on the natural resources in the locality and depicts land, hills, water bodies, fields, vegetation, forest, soil type, land use, etc., and reflects views of people for their own locality with respect to the natural resources.

For example, the figure below shows the social map for Nehiya Khurd Panchayat, Sant Kabeer Nagar District.



iv. Sectoral Vulnerability Tool

The Uttar Pradesh SAPCC 2.0* has categorized the sectoral and composite vulnerabilities for the districts in the state as shown in Annexure III. Going a step ahead, the tool below helps in assessing the GP-specific vulnerability under various sectors through identified 'vulnerability indicators'.

WATER VULNERABILITY (W)

S.No.	Vulnerability Indicators	Response for GP[12] *(tick from the options below)*			
		Strongly Agree	Agree	Disagree	Strongly Disagree
HOUSEHOLD WATER SUPPLY					
1	Complete coverage of piped water supply in all households of GP				
2	Water is supplied on daily-basis				
3	Quantity of water supply is adequate				
4	Water quality is satisfactory				
WATER RESOURCES (SURFACE WATER AND GROUNDWATER)					
5	Water bodies (ponds/lakes/rivers within GP Boundary) are not encroached				
6	Water bodies are not contaminated and regularly restored/conserved i.e., the water bodies are pristine				
7	GP has adequate ground water available and accessible to all				

* In order to avoid doubling of efforts, vulnerability assessment of the district as given in SAPCC 2.0 is taken as a reference to understand the GP-level vulnerabilities; however, the tools (sectoral vulnerability tool, self assessment tool, social and resource mapping, etc.) intend to strengthen and assess granular (GP-context) vulnerabilities in a Gram Panchayat to some extent. It may be noted that conducting a comprehensive vulnerability assessment at GP level is a complicated exercise and there are no existing frameworks for Gram Panchayat level vulnerability assessments.

12. Strongly Agree = Not Vulnerable; Agree = Slightly Vulnerable; Disagree = Vulnerable; Strongly Disagree = Highly Vulnerable

AGRICULTURE VULNERABILITY (A)

S.No.	Vulnerability Indicators	Response for GP[13] *(tick from the options below)*			
		Strongly Agree	Agree	Disagree	Strongly Disagree
AGRICULTURE					
1	Sowing time of crops is unaffected due to climatic variations				
2	Irrigation (water) requirement remains unaffected due to climatic variations				
3	There are no crop losses due to climatic variations and disasters (e.g., floods, heatwaves, droughts, hailstorms, etc.)				
4	No new crop pests have emerged in past 5-10 years				
5	Existing pest attacks have not increased in past 5-10 years				
6	All (100%) farmers are availing crop insurance schemes				
7	Use of chemical inputs (fertilizers/pesticides) has reduced and access to & application of organic inputs has increased				
8	Nurseries and seed banks in/near the GP: Available and accessible to all				
ANIMAL HUSBANDRY/POULTRY/FISHERIES					
9	Diseases, deaths and productivity is not affected due to heat and other climate stresses				
10	Good quality veterinary facilities (clinics and practitioners) in/near the GP, with awareness of current animal management problems are available and accessible to all				

13. Strongly Agree = Not Vulnerable; Agree = Slightly Vulnerable; Disagree = Vulnerable; Strongly Disagree = Highly Vulnerable

FORESTS, GREEN SPACES AND BIODIVERSITY VULNERABILITY (FGB)

S.No.	Vulnerability Indicators	Response for GP[14] *(tick from the options below)*			
		Strongly Agree	Agree	Disagree	Strongly Disagree
	FORESTS AND GREEN COVER				
1	Forest land (if any) in the GP is not encroached				
2	No forest degradation is observed/occurred in last 5 years				
3	GP has adequate tree cover and regular plantation activities (trees outside forests, along roads/streets, around water bodies, etc.)				
4	Agro-forestry, tree cover and social-forestry is unaffected due to extreme heat/temperature, water scarcity, etc.				
5	Adequate number of green spaces (parks/gardens) are in the GP				
	BIODIVERSITY				
6	GP has flourishing (increasing) flora species (trees, shrubs, herbs, indigenous crops, etc.)				
7	GP has flourishing (increasing) fauna species (wild - birds, animals, insects, etc.)				
8	Local Biodiversity Committee: present and efficiently functioning				
9	Biodiversity register (type and count of biodiversity) exists and is regularly updated				

14. Strongly Agree = Not Vulnerable; Agree = Slightly Vulnerable; Disagree = Vulnerable; Strongly Disagree = Highly Vulnerable

HEALTH & SANITATION VULNERABILITY (HS)

S.No.	Vulnerability Indicators	Response for GP[15] *(tick from the options below)*			
		Strongly Agree	Agree	Disagree	Strongly Disagree
SOLID WASTE MANAGEMENT					
1	Door-to-door waste collected from all houses (100%) and commercial establishments (shops, hotels, offices, etc.)				
2	Waste is collected daily				
3	Waste segregation: dry, wet and hazardous waste is collected and managed separately				
4	Waste is not thrown on streets/road sides, in water bodies, vacant lands, etc.				
5	Organic waste treatment (composting facility/biogas plants, etc.): Available and functional				
6	Plastic waste management system: Available and functional				
WASTEWATER MANAGEMENT					
7	Presence of household-level toilets in all households (100%) of the GP				
8	ODF (Open Defecation Free) status achieved for the GP				
9	Drainage network is present in all areas of GP				
10	Presence of separate drains for rain water and sewage water				

15. Strongly Agree = Not Vulnerable; Agree = Slightly Vulnerable; Disagree = Vulnerable; Strongly Disagree = Highly Vulnerable

11	All wastewater (100%) generated in the GP is treated (septic tanks, soak pits, etc.) and no release of untreated wastewater in waterbodies, etc.				
HEALTH					
13	Reported disease cases (like vector-borne, water-borne, respiratory) have not increased in past 5 years				
14	Primary Healthcare Centers (PHCs) or Community Healthcare Centers (CHCs): Available & accessible to all households				
15	ASHA Centers/Anganwadis: Available & accessible to all households				
16	Local healthcare professionals are well-trained/aware in management of various health issues				

DISASTER VULNERABILITY (D)

S.No.	Vulnerability Indicators	Response for GP[16] *(tick from the options below)*			
		Strongly Agree	Agree	Disagree	Strongly Disagree
DISASTER OCCURRENCE SCENARIO[17]					
1	Occurrence & Frequency of following disasters is not exacerbated in past 5 years[18]: • Drought • Floods • Heat waves • Hail storms • Cold waves • Gail • Lightning & Thunder Storm				

16. Strongly Agree = Not Vulnerable; Agree = Slightly Vulnerable; Disagree = Vulnerable; Strongly Disagree = Highly Vulnerable
17. Detailed mapping of disasters (occurrence and type) is covered in Primary Survey Questionnaire and Self-assessment tools
18. Tick marks to be placed individually for each disaster

RISK TO PEOPLE AND HOUSING					
2	Households in GP are not at-risk (no kuccha houses, no houses in catchment/low lying areas, etc.)				
DISASTER PREPAREDNESS AND RESPONSE					
3	Village Disaster Management Plan (VDMP): Available for GP				
4	Village Disaster Management Committee: Available and functional				
5	GP-level Early Warning System/ Weather Alert System/AWS: Available and functional				
6	Amenities and infrastructure for disaster preparedness: emergency food packets, torches, stoves, blankets, etc.: Available & accessible to all households				

ENERGY VULNERABILITY (E)

S.No.	Vulnerability Indicators	Response for GP[19] *(tick from the options below)*			
		Strongly Agree	Agree	Disagree	Strongly Disagree
ELECTRIC SUPPLY					
1	All households in the GP are electrified				
2	Power supply is uninterrupted (no frequent or long power cuts)				
3	Power backup available for all households				

19. Strongly Agree = Not Vulnerable; Agree = Slightly Vulnerable; Disagree = Vulnerable; Strongly Disagree = Highly Vulnerable

RENEWABLE AND ENERGY EFFICIENT SOURCES					
4	Solar rooftop is installed in Government/PRI buildings and houses				
5	GP has solar streetlights				
6	GP has energy efficient (LEDs) streetlights				
7	Biogas plant/s: Available and properly functioning				
8	Households are not dependent on traditional biomass (cow dung/ fuelwood)				

MOBILITY (TRANSPORTATION) VULNERABILITY (M)

S.No.	Vulnerability Indicators	Response for GP[20] *(tick from the options below)*			
		Strongly Agree	Agree	Disagree	Strongly Disagree
ROAD INFRASTRUCTURE					
1	Roads are not waterlogged in the GP				
2	All roads in the GP are pucca or paved roads				
3	Roads in the GP do not have potholes				
4	All roads/streets in GP have sufficient streetlights				

20. Strongly Agree = Not Vulnerable; Agree = Slightly Vulnerable; Disagree = Vulnerable; Strongly Disagree = Highly Vulnerable

5	Public transport for commute within and outside the GP: Available and accessible to all				
6	Public transport for commute within and outside the GP: Reliable (frequent and timely)				
7	Intermediate Public Transport (auto rickshaw) for commute within the GP: Available, accessible to all and reliable				
TRANSIT STOPS (BUS STOPS/RICKSHAW STAND)					
8	Availability of bus stops/rickshaw stand in all prominent locations (markets, health and education facilities, public spaces, PRI buildings, etc.)				
9	Bus stops/rickshaw stand are in good condition (e.g., with shades, seating area, etc.)				

2.3 Estimating the Carbon Footprint of the GP

2.3.1 What are the Drivers of Carbon Footprint of the GP?

The activities responsible for carbon footprint (greenhouse gas emissions) of Gram Panchayats include electricity consumption*, use of fuelwood and LPG for cooking, diesel pumps for irrigation, diesel generators for power backup, and fossil fuels (petrol/diesel) in various means of transport. Emissions also arise from agricultural activities such as rice cultivation, application of fertilizers and crop residue burning as well as animal husbandry activities like enteric fermentation in livestock and management of animal waste. Domestic wastewater also contributes to the carbon footprint of GP.

POTENTIAL SOURCES OF EMISSIONS FROM GRAM PANCHAYAT

S.No.	Activity	Emission Component
1	Cooking	Use of LPG, fuelwood and cow dung, kero
2	Transport	Use of petrol, diesel, LPG, CNG
3	Power backup	Use of diesel
4	Diesel pumps for irrigation	Use of diesel
5	Rice cultivation	Area under rice cultivation
6	Fertilizers	Use of urea and other nitrogenous fertilizers
7	Crop residue burning	Burning of crop residue
8	Enteric fermentation in livestock	Methane from animal gut
9	Management of animal waste	Handling and storage of animal dung
10	Domestic wastewater	Dissolved organics in wastewater
11	Electricity	Electricity use

2.3.2 How to Identify and Assess the Drivers of Carbon Footprint of the GP?

The following tools and techniques can be employed in the GP to gather information, analyze, identify and understand GP-specific drivers of carbon footprint.

i. Field Surveys and Focus-group Discussions (FGDs) to collect information on drivers of emissions, and possible recommendations from local people (villagers) and selected target groups (vulnerable groups) through primary survey questionnaire (attached in Annexure II).

ii. Self-Assessment Tool as part of participatory approach to provide an indicative guidance to people on calculating carbon footprint from various sectors like energy, agriculture, livestock, waste and electricity consumption at individual and household levels.

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

Potential Sources of Emissions	Indicative Emissions Estimation
Diesel Consumption	1 liter of Diesel = 2.72 kg CO_2e emissions
Petrol Consumption	1 liter of Petrol = 2.34 kg CO_2e emissions
Coal Consumption	1 kg coal emits 2.23 kg CO_2e
Consumption of Procured Fuelwood	1 kg fuelwood emits 0.12 kg CO_2e
LPG Consumption	1 cylinder (14.2 kg) of LPG = 42.45 kg CO_2e emissions
Nitrogenous Fertilizer Use (Urea + Other N Fertilizer)	1 kg of Nitrogen Fertilizer = 1.22 kg of CO_2e emissions
Livestock	1 Indigenous Cattle Dairy = 661.5 CO_2e (kg/year) 1 Indigenous Cattle Non-Dairy (Adult) = 732.9 CO_2e (kg/year) 1 Crossbreed Cattle Dairy = 982.8 CO_2e (kg/year) 1 Crossbreed Cattle Non-Dairy (Adult)= 745.5 CO_2e (kg/year) 1 Buffalo Dairy =1142.4 CO_2e (kg/year) 1 Buffalo Non-Dairy (Adult)=1008 CO_2e (kg/year) 1 Goat =109.62 CO_2e (kg/year) 1 Sheep =109.20 CO_2e (kg/year) 1 Horse = 423.99 CO_2e (kg/year) 1 Donkey =228.90 CO_2e (kg/year) 1 Pig = 105 CO_2e (kg/year)
Rice cultivation	**Emissions from Rice cultivation (1 hectare of area under different water regimes):** Continuously flooding = 3402 kg CO_2e Intermittent single aeration = 1386 kg CO_2e Intermittent multiple aeration = 378 kg CO_2e Rainfed flood prone = 3990 kg CO_2e Rainfed drought prone =1386 kg CO_2e Deep water = 3990 kg CO_2e
Domestic Wastewater	Domestic Wastewater emissions = 41.62 kg of CO_2e/person/year
Electricity Consumption	1kwh or 1 Unit of Electricity = 0.82 kg CO_2e emissions

2.4 Understanding Who will Do What? (Roles & Responsibilities)

The following table elaborates the various steps for developing a Climate Smart Gram Panchayat Action Plan (CSGPAP) and the relevant stakeholders responsible for implementation at each step. Once the CSGPAP is endorsed, approved, submitted and launched, the implementation stage will include the following:

- Gram Pradhan and Panchayat Secretary will identify the relevant departments for implementation
- Panchayat Office (PO) and the Block Development Officer (BDO) will facilitate the preparation of detailed project reports (DPRs)/proposals for each interventions in consultation with the relevant departments (at district level)
- Panchayat members in consultation with departments and local CSRs can carry out the vendor selection process

Steps	Activities in each step	Who will do?
Step 1: Data Collection	Secondary Data From Govt. Departments, Dashboards And Portals Survey Questionnaire and Focus Group Discussions (FGDs) Participatory Rural Appraisal Social and Resource Maps of the GP Address information gaps, if any	1. Gram Pradhan 2. Panchayat Members 3. Panchayat Secretary 4. Local Committees (e.g., Education Committee, Planning & Development Committees, other relevant standing committees, etc.) 5. Community (women groups, self- help groups, student and youth groups) 6. Volunteer Groups (on-ground)
Step 2: Analysis & Assessments	Greenhouse Gas Emissions Sectoral Vulnerability Assessment Hazard, Risk, Vulnerability and Capacity Assessment (HRVCA) Climate Variability (temperature and rainfall) and Climate Impacts on Ground Identification of key issues in the GP from a climate lens	1. Panchayat Members 2. Gram Pradhan 3. Panchayat Secretary 4. Farmer Producer Organizations (FPOs) and Other Farmer Groups 5. Student and Youth Groups 6. Local Committees: a. Water & Sanitation Committee b. Heath, Sanitation and Nutrition Committee c. Planning & Development Committee d. Disaster Management Committee e. Other relevant standing committees, etc. 7. Institutions (if any): a. Krishi Vigyan Kendra (KVK) b. Polytechnic Institutes c. Local Colleges and Technical Institutions d. Local Agriculture University 8. Local NGOs and CSRs

Step 3: Preparation of Action Plan	Identifying thematic areas for recommendations and detailed interventions Frame tentative phase-wise targets and estimated cost for each intervention Develop M&E Framework	1. Panchayat Members 2. Gram Pradhan 3. Panchayat Secretary 4. Local committees: a. Water & Sanitation Committee b. Heath, Sanitation and Nutrition Committee c. Planning & Development Committee d. Disaster Management Committee e. Other relevant standing committees, etc. 5. Local NGOs and CSRs
Step 4: Sources of Finance & Convergence with GPDP	Identify potential sources of finance[21] for implementation Establishing linkages with GPDP to compliment GP development priorities	1. Panchayat Members 2. Gram Pradhan 3. Panchayat Secretary 4. Planning & Development Committee
Step 5: Plan Endorsement	Plan presented to community for endorsement	1. Panchayat Members 2. Gram Pradhan 3. Planning & Development Committee
Step 6: Plan Approval	Presenting plan to BDO/Collector Fine-tuning of action plan Climate Smart Gram Panchayat Plan approved	1. Panchayat Members 2. Gram Pradhan 3. Panchayat Secretary 4. Local Committees
Step 7: Formal Submission	The plan is formally submitted to the DoEFCC or other relevant stakeholders/line departments	1. Gram Pradhan 2. Panchayat Secretary 3. Block Development Officer
Step 8: Plan Launch	Formally launch of the plan and ensure buy-in/commitment from all relevant line departments for convergence of funds/schemes for implementation	1. DoEFCC (lead role) 2. Panchayati Raj Department (lead role) 3. Panchayat Members 4. Gram Pradhan 5. Panchayat Secretary

21. State and Central government schemes, missions, and private sector such as CSR funds

3

Potential Interventions: Resilience Building, Climate Change Adaptation and Mitigation

3 Potential Interventions: Resilience Building, Climate Change Adaptation and Mitigation

3.1 Identifying Issues and Corresponding Recommendations: Setting the Context

The insights about GP's agro-climatic zone*, climate change impacts faced in a GP, socio-economic and sectoral vulnerabilities and GHG emissions drivers for each Gram Panchayat, allows unpacking the critical issues and challenges for each sector in a GP. This helps in identification of most appropriate, tailor-made and need-specific recommendations.

A basket-list of interventions[22] is given below from which the GP will adopt the interventions based on the existing or potential problems to address them.

S. No.	Relevant Sectors[23]	Proposed Interventions	Supporting Schemes/Missions/Initiatives
1.	Forest, Green Cover & Biodiversity Interventions	**Improving Green Cover across GP:** 1. Restoration and conservation of trees in existing forest area 2. Planting saplings through community engagement: a. Green Stewardship Programme for students b. Creation of Food Forest by planting fruit trees c. Creation of Bal Van d. In forest, along roads/pathways, around water bodies, etc. 3. Development of Arogya Van; Partnership building between panchayat, CIMAP-Lucknow, FPO's, Women groups, youth groups, etc. for production and sale of natural medicines and supplements 4. Encouragement to farmers to adopt agroforestry 5. Skill development and training by CIMAP-Lucknow to all stakeholders 6. Awareness and training sessions for students, youth and local communities	1. Sub-mission on Agro-Forestry (Under National Mission on Sustainable Agriculture) 2. 'Trees Outside Forests in India' initiative by MoEFCC 3. Green India Mission 4. Jal Jeevan Mission 5. UP State Plantation Targets 6. UP State Compensatory Afforestation Fund Management and Planning Authority Fund (State CAMPA fund) 7. MGNREGA Scheme
		People's Biodiversity Register: 1. Updating People's Biodiversity Register 2. Build awareness amongst community and all stakeholders	

* The list of agro-climatic zones and their relevant features is added in Annexure VII.

22. The list is not exhaustive and other suitable interventions/activities can be added based on Gram Panchayat's needs and requirements

23. Based on vulnerability & identified Issues (from HRVCA, FGDs, primary survey questionnaire and self-assessment tools)

S. No.	Relevant Sectors[23]	Proposed Interventions	Supporting Schemes/Missions/Initiatives
2.	Water Interventions	**Rainwater Harvesting (RwH) Structures:** 1. RwH structures installation in government/PRI buildings and residential buildings 2. Incorporating RwH system in all new buildings	1. MGNREGA Scheme 2. Pradhan Mantri Krishi Sinchai Yojana (PMKSY) (Watershed Development Component) 3. Jal Shakti Abhiyan: Catch the Rain campaign
		Rejuvenation of water bodies and creation of retention ponds: 1. Restoration & rejuvenation of existing ponds by: a. Cleaning and desilting b. Increasing the depth of catchment area c. Creation of embankment to widen catchment area d. Tree plantation with tree guards around water bodies 2. Construction of retention ponds (man-made ponds) in low- lying areas 3. Training and orientation sessions to encourage community involvement in restoration of water bodies and creation of retention pond 4. Capacity building of the GP's Water and Sanitation Committee (WSC) and Construction Work Committee (CWC)	
		Restoration of wells & enhancing groundwater recharge: 1. Cleaning and restoration of all wells 2. Reboring of hand pumps for availability of drinking water 3. Constructing recharge pits for ground water management	
		Enhancing drainage infrastructure: 1. Construction of culverts for wastewater/stormwater drainage and eliminating waterflow via roads 2. Construction of canals for water recharge and agricultural irrigation 3. Cleaning and desilting of existing drains 4. Installing siphons for out flow of water	

S. No.	Relevant Sectors[23]	Proposed Interventions	Supporting Schemes/Missions/Initiatives
		Panchayat level Water Budgeting: Water budgeting to do water audit and compute "Water Defcit" and "Water Surplus" at the village level	
3.	Agriculture Interventions	**Drought Management for Agriculture:** 1. Adoption of micro irrigation practices like drip irrigation and sprinkler irrigation 2. Construction of bunds with trees around agricultural fields 3. Construction of farm ponds 4. Adoption of drought tolerant varieties of rice and wheat 5. Shift to dry direct-seeded rice 6. Community seed banks providing farmers drought-tolerant and climate-resilient varieties of crops; ensuring safety nets for farmers and crop diversification.	1. Paramparagat Krishi Vikas Yojana (PKVY) 2. Soil Health Management Scheme 3. Pradhan Mantri Krishi Sinchai Yojana (PMKSY) 4. UP Millets revival Programme 5. Pradhan Mantri Fasal Bima Yojana 6. National Agricultural Insurance Scheme 7. Weather-based Crop Insurance Scheme 8. Gramin Krishi Mausam Seva Scheme 9. Krishi Raksha Scheme 10. State Rural Livelihood Mission 11. Uttar Pradesh Pashudhan Swasthya Evam Rog Niyantran Yojana 12. Rashtriya Gokul Mission 13. Weather Information Network and Data Systems (WINDS) program
		Shift to Natural Farming: 1. Adoption of natural fertilizers, bio-pesticides and bio- weedicides 2. Setting up and adoption of organic produce certification process 3. Exploring and establishment market linkages for natural farm produce 4. Adoption of practices such as mixed cropping, crop rotation, mulching and zero tillage 5. Training Sessions and demonstrations for farmers, FPOs and other relevant stakeholder groups on: a. Importance of natural farming and drought tolerant crops b. Techniques to adopt resilient cropping pattern c. Sustainable irrigation methods d. Certification systems e. Market outreach and profitability	

S. No.	Relevant Sectors[23]	Proposed Interventions	Supporting Schemes/Missions/Initiatives
		Sustainable Livestock Management: 1. Construction of solar powered cattle sheds 2. Provision of feed supplements for cattle (supplements such as Harit Dhara and Tamarin Plus) to reduce methane emissions 3. Awareness workshops for households engaged in animal husbandry on sustainable rearing practices, disease prevention, and management of livestock health 4. Training of community members as animal health workers/para-vets for improving livestock health service	
4.	**Solid Waste Management Interventions**	**Establishing a Waste Management System:** 1. Setting up a system for at-source (household, commercial, etc.) waste segregation into wet and dry waste 2. Provision of Electric Garbage Vans for: a. Door-to-door collection of segregated waste b. Transportation of plastic waste to nearest plastic recycling facility 3. Converting existing dump yard into or building new solid waste management yard having: a. Segregation & storage space (for further segregation) b. Compost & vermi-compost pits c. An open park with tree plantation (using compost/manure from waste) 4. Setting up GP-level recycling and plastic shredder facility 5. Installation of waste collection bins at strategic locations (markets, schools, shops, tea stalls etc.) 6. Setting up partnerships between Panchayat and a. SHGs, informal ragpickers, local scrap dealers: for collection/transportation of waste b. Local businesses, and MSMEs: for operation of waste management park	1. Swachh Bharat Mission - Gramin (SBM-G) 2. MGNREGA Scheme

S. No.	Relevant Sectors[23]	Proposed Interventions	Supporting Schemes/Missions/Initiatives
		Management of Organic Waste: 1. Setting up Compost & vermi-compost pits through community involvement 2. Promoting above community initiative by providing incentives like concessions on utility services such as water tariffs, waste collection fees, etc., or subsidies on the purchase of biogas 3. Partnership model between panchayat, community members and farmer groups for: a. production & sale of compost b. sale of agricultural waste	
		Ban on Single-Use Plastics: 1. Enforcement of the existing ban on the use of Single Use Plastics (SUPs) 2. Awareness, training, and capacity-building programs for: a. Village Water and Sanitation Committee (VWSC) b. Students & youth groups c. Community members 3. Orientation sessions for commercial establishments on plastic waste management and promote the use of alternatives 4. Leveraging RACE Campaign and LiFE Mission to organize awareness campaigns and training sessions 5. Partnership model between panchayat, women and SHGs for manufacturing products from plastic-alternative materials e.g.: bags, home décor, cutlery, stationery items, furniture, etc.	

S. No.	Relevant Sectors[23]	Proposed Interventions	Supporting Schemes/Missions/Initiatives
5.	Mobility Interventions	**Enhancing road & pedestrian infrastructure:** 1. Reconstruction of all roads in GP as Pucca roads 2. Repair works for existing roads with potholes and any other damages 3. Construction of footpaths/pathways in selected locations 4. Road elevation works in areas prone to waterlogging	1. Pradhan Mantri Gram Sadak Yojana 2. MGNREGA Scheme 3. UP Electric Vehicle Manufacturing and Mobility Policy, 2022 4. Faster Adoption and Manufacturing of Electric Vehicles (FAME III) Scheme - Phase III
		Promoting Intermediate Public Transport (e-autorickshaws) for Last mile connectivity: 1. Provision of e-autorickshaws to ensure serviceability in all areas in the GP 2. Partnership building and setting up a business model/system for commercial hiring (on rental basis) of e- autorickshaws between: a. Businesses/owners giving e-autorickshaws on rent (Green Entrepreneurship) b. Working class/youth hiring e-autorickshaws on rent (Green livelihood) 3. Maintenance and repair work for existing e-autorickshaws (if required) 4. Planning strategic locations as e-autorickshaw transit stop/pick-up points for public 5. Increasing awareness amongst local people on benefits of opting for IPTs and e-mobility	

S. No.	Relevant Sectors[23]	Proposed Interventions	Supporting Schemes/Missions/Initiatives
		E-Goods carriers and E-tractors: 1. Provision of e-goods carriers & e-tractors 2. Partnership building and setting up a business model/system for commercial hiring (on rental basis) of E- Goods carriers & e- tractors between: a. Businesses/owners giving E-Goods carriers & E-tractors on rent (Green Entrepreneurship) b. Farmers/working class/youth hiring E-Goods carriers & E- tractors on rent (Green Livelihood) 3. Incentive system (subsidy on rent charges, etc.) to encourage farmers/transporters choose e-tractors/carriers over conventional diesel-based vehicles 4. Sensitizing user groups (farmers/logistic owners) towards use of E-tractors & e-goods carriers	
6.	Energy Interventions	**Solar Rooftop Installations:** Solar rooftop on all government buildings and pucca houses in the GP	1. Uttar Pradesh Solar Energy Policy, 2022 - 2. Components A, B & C of PM KUSUM Yojana 3. EESL's market-based interventions for Solar-based Induction cooking solutions 4. Atal Jyoti Yojana (MNRE Solar Streetlight Programme) 5. GRAM UJALA scheme 6. Grid Connected Solar Rooftop Programme, MNRE 7. National Horticulture Board (NHB) Scheme - Capital Investment Subsidy for Cold Storages and Storages for Horticulture Products 8. PM-Surya Ghar: Muft Bijli Yojana
		Agro-photovoltaic: Agro-photovoltaic installations on area under horticulture and legume crops	
		Solar Pumps: Replacing existing diesel pump sets with solar pumps or energy efficient pumps	

S. No.	Relevant Sectors[23]	Proposed Interventions	Supporting Schemes/Missions/Initiatives
		Clean Cooking: Promoting and achieving clean cooking methods through combinations of options like: a. Biogas b. Solar powered induction cookstoves c. Improved Chulhas d. LPG	9. GOBARDHAN scheme under Swachh Bharat Mission - Gramin (SBM-G) 10. UP Bio-Energy Policy 2022 11. Waste to Energy (WTE) Programme
		Energy Efficiency: All light fixtures and fans to be replaced with energy efficient fixtures in all government buildings and residential buildings	
		Solar Street Lights: Installation of LED streetlights along roads, public spaces and other key locations	
		Cool Roofs: Implementing a Cool Roof Programme for government, community and residential buildings	
		Solar Water ATM: Installing solar-powered drinking water kiosks at multiple strategically identified locations, especially in water-scarce and drought-prone GP	
		Solar-powered cold storage unit (FPO/SHG/Individual farmers): Solar-powered cold storage units to enhance post-harvest efficiency and reduction in loss, improving farmers' income	
		Solar Passive Design and Passive Cooling: Promoting building orientation as per solar geometry, vernacular materials and sustainable design (efficient movement of natural air, natural lighting through light vaults, plantation/horticulture, etc.) in buildings to reduce energy demand and increase energy efficiency	

S. No.	Relevant Sectors[23]	Proposed Interventions	Supporting Schemes/Missions/Initiatives
7.	Industry Interventions	**Energy Transition:** 1. Promoting solar power installations at industry level through incentives, loans/financing aids, direct economic benefit mechanisms like green tariffs and tax reductions 2. Developing partnership and business model between industries and Panchayat for giving the excess renewable energy to grid and to support the development of DRE 3. Promotion and adoption of adopt clean technologies **Emission Reduction & Absorption:** 1. Ensure compliance to existing fuel emission standards 2. Promote alternative and low-emitting fuels (e.g., biofuels) for various industrial activities (transportation, processing, etc.) 3. Encouraging use of materials which low-emitting and green in the production processes 4. Increasing green spaces/buffer zones within and around industrial area **Energy and Resource Efficiency:** 1. Promoting energy-use reduction technologies like improving the insulation of industrial plants, using heat exchangers, etc. 2. Encourage adoption of Perform, Achieve and Trade Scheme (PAT) for achieving energy efficiency 3. Awareness programmes to encourage adoption of: a. Smart energy-efficient systems b. Resource efficient practices like water reuse and recycle, effluent treatment and recycle, reuse and recycle of materials, etc.	1. Uttar Pradesh Solar Energy Policy, 2022 2. Components A, B & C of PM KUSUM Yojana 3. Grid Connected Solar Rooftop Programme, MNRE 4. 'Trees Outside Forests in India' initiative by MoEFCC 5. Green India Mission 6. Centrally sponsored scheme for Common Effluent Treatment Plants (CETPs), MoEFCC[24]

24. https://www.indiawaterportal.org/articles/revised-guidelines-centrally-sponsored-scheme-common-effluent-treatment-plants-cetps

3.2 Phase-wise Targets and Cost Estimation

Each intervention identified will be implemented in a phased manner under three phases. The detail phasing of all interventions along with targets and estimated cost for each is shown in the tables below.

FOREST, GREEN COVER & BIODIVERSITY INTERVENTIONS (FGB)

Phase I: 2024-25 to 2026-27							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2024-25	**2025-26**	**2026-27**		
IMPROVING GREEN COVER ACROSS GP (FGB 1)							
FGB 1.1	**Forest Restoration & Conservation**	Restoration and conservation of trees in existing forest area of the GP (if any)				**Approximate Cost:** 1. Tree plantation (preparation, sapling, labor, etc.) = Rs. 70 per tree 2. Tree Guards (metal) = Rs. 1,200 per unit	
FGB 1.2	**Community-led Plantation Activities**[25]	Planting saplings: a. Green Stewardship Programme for students b. Creation of Food Forest by planting fruit trees c. Along roads/pathways, around water bodies					
FGB 1.3	**Arogya Van**	Initiating Arogya Van through allocation of land to establish Arogya Van					
FGB 1.4	**Agroforestry**	Awareness and capacity building programmes for farmers to adopt agroforestry					

25 Commonly found tree species and Endangered/vulnerable tree species of the region

FGB 1.5	**Awareness, Training & Capacity Building**	Awareness and training sessions for students, youth and local communities on: a. Importance of forest and green cover b. How to plant and nurture trees c. Appropriate tree species for plantation and its vulnerability					
PEOPLE'S BIODIVERSITY REGISTER (FGB 2)							
FGB 2.1	**Update & Maintenance**	Participatory update of the people's biodiversity register				**Approximate Cost:** Formation, registration and training of Biodiversity Management Committees (BMCs) = Rs. 25,000	
FGB 2.2	**Awareness and Capacity Building**	Build awareness amongst community and all stakeholders					

Phase II: 2027-28 to 2029-30							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2027-28	**2028-29**	**2029-30**		
IMPROVING GREEN COVER ACROSS GP (FGB 1)							
FGB 1.1	**Forest Restoration & Conservation**	• Plantation of additional saplings in forest to expand tree cover • Maintenance of existing Forest trees/resources				**Approximate Cost:** 1. Tree plantation (preparation, sapling, labor, etc.) = Rs.70 per tree 2. Tree Guards (metal) = Rs. 1,200 per unit	

FGB 1.2	**Community-led Plantation Activities[26]**	• Additional plantation of saplings:
		  • Creation of Bal Van[27]
		  • Along roads/pathways, around water bodies
		• Maintenance of Food Forest and other existing plantations/green cover					

FGB 1.3	**Arogya Van**	• Establishment of Arogya Van • Development of production units • Partnership building between panchayat,CIMAP-Lucknow[28], FPO's, SHGs, women groups, youth groups, etc. for production and sale of natural medicines and supplements					
FGB 1.4	**Agroforestry**	Encouragement to farmers to adopt agroforestry in at least 40% land suitable for agroforestry					
FGB 1.5	**Awareness, Training & Capacity Building**	• Skill development and training by CIMAP-Lucknow to all stakeholders for Arogya Van • Awareness and capacity building programmes for farmers on agroforestry (importance, benefits) training sessions for students, youth and local communities on: a. Importance of forest and green cover b. How to plant and nurture trees c. Appropriate tree species for plantation its vulnerability					

26 Commonly found tree species and Endangered/vulnerable tree species of the region
27 New parents can be gifted with saplings of indigenous evergreen trees as a celebration of birth of their children and to be e ncouraged to nurture the plants through their children's life
28 Central Institute of Medicinal and Aromatic Plants, Lucknow (CIMAP)

PEOPLE'S BIODIVERSITY REGISTER (FGB 2)							
FGB 2.1	**Update & Maintenance**	Continued and regular updating of People's Biodiversity Register				**Approximate Cost:** Formation, registration and training of Biodiversity Management Committees (BMCs) = Rs.25,000	
FGB 2.2	**Awareness and Capacity Building**	Continued awareness and capacity building sessions amongst community and all stakeholders					

Phase III: 2030-31 to 2034-35									
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**					**Per Unit Cost**	**Total Cost**
			2030-31	**2031-32**	**2032-33**	**2033-34**	**2034-35**		
IMPROVING GREEN COVER ACROSS GP (FGB 1)									
FGB 1.1	**Forest Restoration & Conservation**	• Plantation of additional saplings in forest to expand tree cover • Maintenance of existingforest trees/resources						**Approximate Cost:** 1. Tree plantation (preparation, sapling, labor, etc.) = Rs.70 per tree 2. Tree Guards (metal) = Rs. 1,200 per unit	
FGB 1.2	**Community-led Plantation Activities**[29]	• Additional plantation activities along roads/pathways, around water bodies • Maintenance of Bal Van, Food Forest and other existing plantations/green cover							
FGB 1.3	**Arogya Van**	• Maintenance of Arogya Van • Production of natural medicines and supplements • Scaling up partnership beyond GP to other villages/ districts							

29 Commonly found tree species and Endangered/vulnerable tree species of the region

FGB 1.4	**Agroforestry**	Scaling up agroforestry adoption in 100% land suitable for agroforestry							
FGB 1.5	**Awareness, Training & Capacity Building**	• Skill development and training by CIMAP-Lucknow to all stakeholders for Arogya Van • Awareness and capacity building programmes for farmers on agroforestry (importance, benefits) • Awareness and training sessions for students, youth and local communities on: a. Importance of forest and green cover b. How to plant and nurture trees c. Appropriate tree species for plantation its vulnerability							
PEOPLE'S BIODIVERSITY REGISTER (FGB 2)									
FGB 2.1	**Update & Maintenance**	Continued and regular updating of People's Biodiversity Register						**Approximate Cost:** Formation, registration and training of Biodiversity Management Committees (BMCs) = Rs.25,000	
FGB 2.2	**Awareness and Capacity Building**	Continued awareness and capacity building sessions amongst community and all stakeholders							

WATER INTERVENTIONS (W)

Phase I: 2024-25 to 2026-27							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2024-25	**2025-26**	**2026-27**		
RAINWATER HARVESTING (RWH) STRUCTURES (W 1)							
W 1.1	**Adoption of RwH in buildings**	Construction of RwH structures in all (100%) government/PRI buildings (Panchayat Bhavan, Primary & Secondary schools, Inter college, PHCs, etc.)				**Approximate Cost:** RwH Structure with Recharge Pits of 10 m^3 capacity = Rs. 35,000/unit	
REJUVENATION OF WATER BODIES AND CREATION OF RETENTION PONDS (W 2)							
W 2.1	**Restoration & rejuvenation of existing water bodies (lakes/ ponds)**	• Cleaning and desilting of water bodies • Increasing the depth of catchment area • Creation of embankment to widen catchment area • Plantation of trees with tree guards (around water bodies)				**Approximate Cost:** 1. Restoration (cleaning, desilting, increase in catchment area, etc.) of 1 pond = Rs. 7 Lakhs 2. Construction of 1 Retention Pond (300 m^3 capacity) = Rs. 7 Lakhs 3. Tree plantation with tree guard = Rs. 1,200 per unit 4. Maintenance Cost: a. 1 Pond/water body = Rs. 3, 75,000 b. 1 Retention Pond = Rs. 50,000 c. Tree with tree guard = Rs. 20 per unit	
W 2.2	**Retention Ponds**	Construction of retention ponds (man-made ponds) in identified low-lying areas					

W 2.3	**Awareness, Capacity Building & Community Participation**	• Capacity building of the GP's Water and Sanitation Committee (WSC) and Construction Work Committee (CWC) • Encouraging community involvement in restoration of water bodies and creation of retention pond • Training and orientation sessions for local people to engage in above activities					
RESTORATION OF WELLS & ENHANCING GROUND WATER RECHARGE (W 3)							
W 3.1	**Restoration and maintenance of ground water sources**	• Cleaning, repair and restoration of all wells • Reboring of hand pumps for availability of drinking water				**Approximate Cost:** 1. Cleaning & Restoration (safety and repair works, etc.) of 1 well = Rs.3,12,500 2. Reboring of 1 Handpump =Rs. 60,000 3. Construction of 1 Recharge pit = Rs. 10, 000 4. Maintenance of 1 well = Rs. 60,000	
W 3.2	**Recharge Pits**	• Constructing recharge pits for ground water management					
ENHANCING DRAINAGE INFRASTRUCTURE (W 4)							
W 4.1	**Wastewater & Stormwater Management**	• Cleaning, repair and restoration of all wells • Reboring of hand pumps for availability of drinking water					
W 4.2	**Water recharge & Irrigation**	Construction of canals for water recharge and agricultural irrigation					

Phase II: 2027-28 to 2029-30							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2027-28	**2028-29**	**2029-30**		
RAINWATER HARVESTING (RWH) STRUCTURES (W 1)							
W 1.1	**Adoption of RwH in buildings**	• Construction of RwH structures in 25% residential buildings with plot size greater than 1500 sq. ft. • Construction (mandatory) of RwH structures in all (100%) new buildings greater than 1000 sq. ft				**Approximate Cost:** RwH Structure with Recharge Pits of 10 m^3 capacity = Rs. 35,000/unit	
REJUVENATION OF WATER BODIES AND CREATION OF RETENTION PONDS (W 2)							
W 2.1	**Restoration & rejuvenation of existing water bodies (lakes/ ponds)**	• Continued management of all water bodies • Plantation of trees (with tree guards) around water bodies and maintenance of existing plantations				**Approximate Cost:** 1. Restoration (cleaning, desilting, increase in catchment area, etc.) of 1 pond = Rs. 7 Lakhs 2. Construction of 1 Retention Pond (300 m^3 capacity) = Rs. 7 Lakhs 3. Tree plantation with tree guard = Rs. 1,200 per unit 4. Maintenance Cost: a. 1 Pond/water body = Rs. 3, 75,000 b. 1 Retention Pond = Rs. 50,000 c. Tree with tree guard = Rs. 20 per unit	
W 2.2	**Retention Ponds**	• Continued management of retention ponds developed in Phase I • Construction of additional retention ponds in low- lying areas					
W 2.3	**Awareness, Capacity Building & Community Participation**	• Continued capacity building of the community and all other stakeholders • Scaling up community involvement in maintenance and restoration works					

RESTORATION OF WELLS & ENHANCING GROUND WATER RECHARGE (W 3)							
W 3.1	**Restoration and maintenance of ground water sources**	Continued maintenance of all existing wells and handpumps				**Approximate Cost:** 1. Cleaning & Restoration (safety and repair works, etc.) of 1 well = Rs.3,12,500 2. Reboring of 1 Handpump = Rs. 60,000 3. Construction of 1 Recharge pit = Rs. 10, 000 4. Maintenance of 1 well = Rs. 60,000	
W 3.2	**Recharge Pits**	Continued maintenance of all recharge pits					
ENHANCING DRAINAGE INFRASTRUCTURE (W 4)							
W 4.1	**Wastewater & Stormwater Management**	• Maintenance of existing drainage infrastructure • Construction of additional drains (if required) • Installation of additional siphons (as per identified need)					
W 4.2	**Water recharge & Irrigation**	• Maintenance of existing canals • Construction of additional canals (if required)					

Phase III: 2030-31 to 2034-35									
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**					**Per Unit Cost**	**Total Cost**
			2030-31	**2031-32**	**2032-33**	**2033-34**	**2034-35**		
RAINWATER HARVESTING (RWH) STRUCTURES (W 1)									
W 1.1	**Adoption of RwH in buildings**	• Construction of RwH structures in all (100%) residential buildings with plot size greater than 1500 sq. ft.						**Approximate Cost:** RwH Structure with Recharge Pits of 10 m^3 capacity = Rs. 35,000/unit	

		• Construction of RwH structures in 50% residential buildings with plot size greater than 1000 sq. ft. • Construction (mandatory) of RwH structures in all (100%) new buildings							
REJUVENATION OF WATER BODIES AND CREATION OF RETENTION PONDS (W 2)									
W 2.1	**Restoration & rejuvenation of existing water bodies (lakes/ponds)**	Continued management of all water bodies Plantation of trees (with tree guards) around water bodies and maintenance of existing plantations						**Approximate Cost:** 1. Restoration (cleaning, desilting, increase in catchment area, etc.) of 1 pond = Rs. 7 Lakhs 2. Construction of 1 Retention Pond (300 m^3 capacity) = Rs. 7 Lakhs 3. Tree plantation-with tree guard = Rs.1,200 per unit 4. Maintenance Cost: a. 1 Pond/water body = Rs. 3,75,000 b. 1 Retention Pond = Rs. 50,000 c. Tree with tree guard = Rs. 20 per unit	
W 2.2	**Retention Ponds**	Continued management of all retention ponds developed							

W 2.3	**Awareness, Capacity Building & Community Participation**	• Continued Capacity building of the community and all other stakeholders • Scaling up community involvement in maintenance and restoration works							
RESTORATION OF WELLS & ENHANCING GROUND WATER RECHARGE (W 3)									
W 3.1	**Restoration and maintenance of ground water sources**	Continued maintenance of all existing wells and handpumps						**Approximate Cost:** 1. Cleaning & Restoration (safety and repair works, etc.) of 1 well = Rs. 3,12,500 2. Reboring of 1 Handpump = Rs. 60,000 3. Construction of 1 Recharge pit = Rs. 10, 000 4. Maintenance of 1 well = Rs. 60,000	
W 3.2	**Recharge Pits**	Continued maintenance of all recharge pits							
ENHANCING DRAINAGE INFRASTRUCTURE (W 4)									
W 4.1	**Wastewater & Stormwater Management**	• Maintenance of existing drainage infrastructure • Construction of additional drains (if required) Installation of additional siphons (as per identified need)							
W 4.2	**Water recharge & Irrigation**	• Maintenance of existing canals • Construction of additional canals (if required)							

AGRICULTURE INTERVENTIONS (A)

Phase I: 2024-25 to 2026-27							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2024-25	**2025-26**	**2026-27**		
DROUGHT MANAGEMENT FOR AGRICULTURE (A 1)							
A 1.1	**Improved Irrigation Practices**	• Adoption of micro irrigation practices like drip irrigation and sprinkler irrigation on at least 30% of agricultural land • Construction of farm ponds				**Approximate Cost:** 1. Micro-irrigation = Rs. 1 Lakh per Hectare 2. 1 m of Bunding = Rs. 150 3. 1 Farm Pond (300 m^3) = Rs. 90,000	
A 1.2	**Resilient Crop variety**	• Adoption of drought tolerant varieties of rice and wheat • Shift to dry direct seeded rice					
A 1.3	**Tree plantation**	Construction of bunds with trees on 75% of agricultural fields					

NATURAL FARMING (A 2)							
A 2.1	**Shift to natural farm inputs**	• Adoption of natural fertilizers, bio-pesticides and bio-weedicides on at least 15% of agricultural land • Establishing and adoption of natural produce certification process • Exploring and establish market linkages				**Approximate Cost:** 1. Training & Demonstration = Rs. 20,000 to 30,000 per Session 2. Conversion of land to natural farming = 2,47,000 per hectare (including training cost and certification based on expert consultation)	
A 2.2	**Resilient Cropping practices**	Adoption of practices such as mixed cropping, crop rotation, mulching and zero tillage					
A 2.3	**Awareness and Capacity Building**	Training Sessions and demonstratio for farmers, FPOs and other relevant stakeholder groups on: a. Importance of natural farming and drought tolerant crops b. Techniques to adopt resilient cropping pattern c. Sustainable irrigation methods d. Certification systems e. Market outreach and profitability					
SUSTAINABLE LIVESTOCK MANAGEMENT (A 3)							
A 3.1	**Awareness, Training & Capacity Building**	• Awareness and capacity building workshops for households engaged in animal husbandry on sustainable rearing practices, disease prevention, and management of livestock health • Training of 2 community members[30] as animal health workers/ para-vets for improving access to livestock health services				**Approximate Cost:** Cattle Supplements = Rs. 6 per cattle head per day	

30 No. of community members to be trained as animal health workers as per requirement of the GP

A 3.2	**Feed supplements to reduce methane Emissions**	Provision of feed supplements[31] for 20% of total cattle					

Phase II: 2027-28 to 2029-30							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2027-28	**2028-29**	**2029-30**		
DROUGHT MANAGEMENT FOR AGRICULTURE (A 1)							
A 1.1	**Improved Irrigation Practices**	• Expansion of micro irrigation practices like drip irrigation and sprinkler irrigation on at least 70% of agricultural land • Construction of more farm ponds (as required) and maintenance of existing ponds				**Approximate Cost:** 1. Micro-irrigation = Rs. 1 Lakh per Hectare 2. 1 m of Bunding = Rs. 150 3. 1 Farm Pond (300 m^3) = Rs. 90,000	
A 1.2	**Resilient Crop variety**	• Scaling up adoption of drought tolerant variety of rice and wheat • Adoption of drought resistance crops such as millets and legumes					
A 1.3	**Tree plantation**	Construction and maintenance of bunds with trees on 100% of agricultural fields					

31 Supplements such as Harit Dhara and Tamarin Plus

NATURAL FARMING (A 2)							
A 2.1	**Shift to natural farm inputs**	• Adoption of natural fertilizers, bio-pesticides and bio-weedicides on at least 40% of agricultural land • Adoption of natural produce certification and verification process • Explore and establish more market linkages for wider reach of natural produce and to ensure best available price				**Approximate Cost:** 1. Training & Demonstration= Rs. 20,000 to 30,000 per session 2. Conversion of land to natural farming = Rs.2,47,000 per hectare (including training cost and certification based on expert consultation)	
A 2.2	**Resilient Crop variety**	Scaling up practices such as mixed cropping, crop rotation, mulching and zero tillage					
A 2.3	**Awareness and Capacity Building**	Training Sessions and demonstrations for farmers, FPOs and other relevant stakeholder groups on: a. Importance of natural farming and drought tolerant crops b. Techniques to adopt resilient cropping pattern c. Sustainable irrigation methods d. Certification systems e. Market outreach and profitability					
SUSTAINABLE LIVESTOCK MANAGEMENT (A 3)							
A 3.1	**Awareness, Training & Capacity Building**	• Additional and frequent workshops households engaged in animal husbandry based on requirement • Regular training and capacity building of community members as animal health workers/para-vets				**Approximate Cost:** Cattle Supplements = Rs. 6 per cattle head per day	

A 3.2	**Feed supplements to reduce methane Emissions**	Provision of feed supplements for 50% of total cattle					

Phase III: 2030-31 to 2034-35									
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**					**Per Unit Cost**	**Total Cost**
			2030-31	**2031-32**	**2032-33**	**2033-34**	**2034-35**		
DROUGHT MANAGEMENT FOR AGRICULTURE (A 1)									
A 1.1	**Improved Irrigation Practices**	• Expansion of micro irrigation practices like drip irrigation and sprinkler irrigation on at least 70% of agricultural land • Maintenance of existing farm ponds						**Approximate Cost:** 1. Micro- irrigation = Rs. 1 Lakh per Hectare 2. 1 m of Bunding = Rs. 150 3. 1 Farm Pond (300 m^3) = Rs. 90,000	
A 1.2	**Resilient Crop variety**	• 100% use of drought tolerant variety of rice and wheat • Scaling up adoption of drought resistance crops such as millets and legumes							
A 1.3	**Tree plantation**	Maintenance of bunds and scaling up tree plantation							
NATURAL FARMING (A 2)									
A 2.1	**Shift to natural farm inputs**	• Adoption of natural fertilizers, bio- pesticides and bio- weedicides on at least 100% of agricultural land • Adoption of natural produce certification and verification process • Explore and establish more market linkages for wider reach of natural produce						**Approximate Cost:** 1. Training & Demonstration = Rs. 20,000 to 30,000 per session	

A 2.2	**Resilient Cropping practices**	• Scaling up practices such as mixed cropping, crop rotation, mulching and zero tillage to all agricultural land						2. Conversion of land to natural farming = Rs. 2,47,000 per hectare (including training cost and certification based on expert consultation)	
A 2.3	**Awareness and Capacity Building**	Training Sessions and demonstrations for farmers, FPOs and other relevant stakeholder groups on: a. Importance of natural farming and drought tolerant crops b. Techniques to adopt resilient cropping pattern c. Sustainable irrigation methods d. Certification systems e. Market outreach and profitability							
SUSTAINABLE LIVESTOCK MANAGEMENT (A 3)									
A 3.1	**Awareness, Training & Capacity Building**	• Additional and frequent workshops households engaged in animal husbandry based on requirement • Regular training and capacity building of community members as animal health workers/ para-vets						**Approximate Cost:** Cattle Supplements = Rs. 6 per cattle head per day	
A 3.2	**Feed supplements to reduce methane emissions**	Provision of feed supplements for remaining 30% of total cattle							

SOLID WASTE MANAGEMENT INTERVENTIONS (SWM)

Phase I: 2024-25 to 2026-27							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2024-25	**2025-26**	**2026-27**		
ESTABLISHING A WASTE MANAGEMENT SYSTEM (SWM 1)							
SWM 1.1	**Waste Segregation & Collection**	• Setting up a system for at source (household, commercial, etc.) waste segregation into wet and dry wasteProvision of Electric vehicles for: a. 100% Door-to-door collection of segregated waste (biodegradable and non-biodegradable waste) b. Transportation of plastic waste to block-level plastic recycling facility • Installation of waste collection bins at strategic locations (markets, schools, shops, tea stalls etc.)				**Approximate Cost:** 1. Solid waste management yard/ center (segregation/storage space, compost units, etc.) = Rs. 35 Lakhs 2. 1 Electric vehicle for waste transportation = Rs. 95,000 to 1 Lakh 3. 1 waste bin/container = Rs.15,000 4. 1 plastic shredder unit = Rs. 50,000	
SWM 1.2	**Solid Waste Management Yard/Center**	Establishment of a Solid waste management yard having: a. Segregation & storage space (for further segregation) b. Compost & vermi-compost pits *(detailed in SWM2)*					

SWM 1.3	**Partnership Building**	Setting up partnerships between Panchayat, SHGs, informal ragpickers, local scrap dealers, local businesses, and MSMEs for: a. Collection/transportation of waste b. Operation of waste management park					
SUSTAINABLE MANAGEMENT OF ORGANIC WASTE (SWM 2)							
SWM 2.1	**Composting Facility**	• Setting up Compost & vermi- compost pits for: a. treating 100% Domestic organic waste b. portion of agricultural waste and livestock waste[32] • Encouraging community engagement by providing incentives like concessions on utility services such as water tariffs, waste collection fees, etc., or subsidies on the purchase of biogas				**Approximate Cost:** Solid waste management yard/ center (segregation/storage space, compost units, etc.) = Rs. 35 Lakhs	
SWM 2.2	**Partnership Building**	Partnership model between panchayat, community members and farmer groups for: a. production & sale of compost b. sale of agricultural waste					
SWM 2.3	**Training & Capacity Building**	Capacity building of community members and farmer groups for: a. Importance of composting and organic manure b. In-house Composting & vermi-composting techniques c. Marketing & selling compost within & outside the GP					

32. Can be periodically composted to enhance compost quantity

BAN ON SINGLE-USE-PLASTICS & PROMOTING ALTERNATIVE MATERIALS (SWM 3)							
SWM 3.1	**Ban on SUPs**	Enforcement of the existing ban on the use of Single Use Plastics (SUPs)					
SWM 3.2	**Partnership Building**	Partnership model between panchayat, women and SHGs for manufacturing products from plastic-alternative materials e.g.: bags, home décor, cutlery, stationery items, furniture, etc.					
SWM 3.3	**Awareness, Training & Capacity Building**	• Organizing awareness, training, and capacity-building programs on plastic waste management and promote the use of alternatives for: a. Village Water and Sanitation Committee (VWSC) b. Students & youth groups c. Community members d. Commercial establishments • Leveraging RACE Campaign and LiFE Mission to organize awareness campaigns and training sessions • Capacity building of women, SHGs, MSMEs and individual entrepreneurs engaged in manufacturing plastic- alternate products for: a. Diversification of product range b. Marketing/selling of the products within & outside the GP					

Phase II: 2027-28 to 2029-30							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2027-28	**2028-29**	**2029-30**		
ESTABLISHING A WASTE MANAGEMENT SYSTEM (SWM 1)							
SWM 1.1	**Waste Segregation & Collection**	• Provision of additional Electric vehicles as per increase in future demand • Installation of additional bins at new strategic locations • Maintenance of existing EVs and waste bins installed				**Approximate Cost:** 1. Solid waste management yard/ center (segregation/storage space, compost units, etc.) = Rs.35 Lakhs 2. 1 Electric vehicle for waste transportation = Rs. 95,000 to 1 Lakh 3. 1 waste bin/container = Rs. 15,000 4. 1 plastic shredder unit = Rs. 50,000	
SWM 1.2	**Solid Waste Management Yard/Center**	• Maintenance of solid waste management yard • Construction of an open park with tree plantation inside solid waste management yard (Using compost/manure generated from waste) • Setting up a plastic recycling facility inside solid waste management yard					
SWM 1.3	**Partnership Building**	Scaling up partnership beyond GP to other villages/districts					

SUSTAINABLE MANAGEMENT OF ORGANIC WASTE (SWM 2)							
SWM 2.1	**Composting Facility**	• Regular maintenance of existing compost pits • Increasing capacity/setting up new compost pits for treatment of all (100%) biodegradable/organic waste				**Approximate Cost:** Solid waste management yard/ center (segregation/storage space, compost units, etc.) = Rs. 35 Lakhs	
SWM 2.2	**Partnership Building**	Scaling up partnership beyond GP to other villages/districts					
SWM 2.3	**Training & Capacity Building**	Capacity building of community members and farmer groups					
BAN ON SINGLE-USE-PLASTICS & PROMOTING ALTERNATIVE MATERIALS (SWM 3)							
SWM 3.1	**Ban on SUPs**	Continued enforcement of ban on the use of Single Use Plastics (SUPs)					
SWM 3.2	**Partnership Building**	• Scaling up partnership by engaging additional SHGs and women from within the GP and other villages • Extending partnership to include MSMEs & individual entrepreneurs					
SWM 3.3	**Awareness, Training & Capacity Building**	Continued awareness, training, and capacity-building programs					

Phase III: 2030-31 to 2034-35									
Code	Proposed Intervention	Target Description	Annual Targets					Per Unit Cost	Total Cost
			2030-31	2031-32	2032-33	2033-34	2034-35		
ESTABLISHING A WASTE MANAGEMENT SYSTEM (SWM 1)									
SWM 1.1	**Waste Segregation & Collection**	• Provision of additional Electric vehicles as per increase in future demand • Installation of additional bins at new strategic locations • Maintenance of existing EVs and waste bins installed						**Approximate Cost:** 1. Solid waste management yard/ center (segregation/storage space, compost units etc.) = Rs. 35 Lakhs 2. 1 Electric vehicle for waste transportation = Rs. 95,000 to 1 Lakh 3. 1 waste bin/ container = Rs. 15,000 4. 1 plastic shredder unit = Rs. 50,000	
SWM 1.2	**Solid Waste Management Yard/Center**	Maintenance of solid waste management yard having: a. Segregation & storage space b. Compost & vermi- compost pits c. Open park d. Plastic recycling facility							
SWM 1.3	**Partnership Building**	Scaling up partnership beyond GP to other villages/districts							
SUSTAINABLE MANAGEMENT OF ORGANIC WASTE (SWM 2)									
SWM 2.1	**Composting Facility**	• Regular maintenance of existing compost pits • Increasing capacity/setting up new compost pits for treatment of all (100%) biodegradable/organic waste						**Approximate Cost:** Solid waste management yard/ center (segregation/ storage space, compost units, etc.) = Rs. 35 Lakhs	

SWM 2.2	**Partnership Building**	Scaling up partnership beyond GP to other villages/districts							
SWM 2.3	**Training & Capacity Building**	Capacity building of community members and farmer groups							
BAN ON SINGLE-USE-PLASTICS & PROMOTING ALTERNATIVE MATERIALS (SWM 3)									
SWM 3.1	**Ban on SUPs**	Continued enforcement of ban on the use of Single Use Plastics (SUPs)							
SWM 3.2	**Partnership Building**	Scaling up partnership beyond GP to other villages/ districts							
SWM 3.3	**Awareness, Training & Capacity Building**	Continued Awareness, training, and capacity- building programs							

MOBILITY INTERVENTIONS (M)

Phase I: 2024-25 to 2026-27							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2024-25	**2025-26**	**2026-27**		
IMPROVING ROAD & PEDESTRIAN INFRASTRUCTURE (M 1)							
M 1.1	**Accessibility & Serviceability of roads**	• Construction of all (100%) existing Kucha roads in GP as Pucca roads • Repair works for all (100%) potholes/any other damages • Construction of new roads to ensure 100% serviceability & coverage in GP				**Approximate Cost:** 1. Construction of footpaths/pathways (Kharanja & interlocking) = Rs. 1,10,000 per meter length 2. Road elevation by 2 feet = Rs. 75,00,000 per km length 3. Road RCC works/interlocking = Rs. 7,000 per meter length 4. Cost per km. of road upgradation/ repair = Rs. 50 Lakhs per km.	
M 1.2	**Enhancing Pedestrian infrastructure**	• Repair of upgradation of all (100%) existing footpaths • Construction of footpath/pathways in selected locations: a. Market centers b. Schools/Institute area c. Health Centers d. Community spaces e. Green spaces etc.					
PROMOTING E-MOBILITY (M 2)							
M 2.1	**Intermediate Public Transport (e- autorickshaws) for Last mile connectivity**	• Provision of e-autorickshaws (as per demand) to serve all areas in the GP • Establishment of a system for commercial hiring (on rental basis) of e-autorickshaws as green livelihood & entrepreneurship opportunity • Maintenance & repair work for existing e-autorickshaws (if any)				**Approximate Cost:** 1. 1 e-autorickshaw = Rs. 3 Lakhs [Subsidy*: up to Rs. 12,000 per vehicle; hence, Cost after subsidy = Rs. 2,88,000 per e-autorickshaw] 2. 1 e-tractor (35 HP) = Rs 6 Lakhs 3. 1 mini goods EV transport truck = Rs. 9 to 10 Lakhs	

* 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.

M 2.2	**E-Goods Carriers and E-tractors**	• Setting up a facility for commercial hiring (on rental basis) of e-goods carriers & e-tractors • Establishing incentive system to encourage farmers and transporters to choose e-vehicles (tractors/carriers) over conventional diesel-based vehicles					
M 2.3	**Partnership, Awareness and Capacity Building**	• Partnership between entrepreneurs/ businesses providing e-autorickshaws, e-goods carriers & e-tractors on rental basis to user groups (drivers, farmers, transporters) • Sensitizing user groups (farmers/logistic owners) towards use of e-tractors & e-goods carriers • Increasing awareness amongst local people on benefits of opting for IPTs and e-mobility					

Phase II: 2027-28 to 2029-30							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2027-28	**2028-29**	**2029-30**		
IMPROVING ROAD & PEDESTRIAN INFRASTRUCTURE (M 1)							
M 1.1	**Accessibility & Serviceability of roads**	• Repair and maintenance of all roads in GP • Construction of additional roads (if required) in selected locations				**Approximate Cost:** 1. Construction of footpaths/pathways (Kharanja & interlocking) = Rs. 1,10,000 per meter length 2. Road elevation by 2 feet = Rs. 75,00,000 per km length	

M 1.2	**Enhancing Pedestrian Infrastructure**	• Repair and maintenance of all foot-paths in GP • Construction of additional footpaths (if required) in selected locations				3. Road RCC works/interlocking = Rs. 7,000 per meter length 4. Cost per km. of road upgradation/ repair = Rs. 50 Lakhs	
PROMOTING E-MOBILITY (M 2)							
M 2.1	**Intermediate Public Transport (e-autorickshaws) for Last mile connectivity**	• Provision of additional e-autorickshaws (as per demand) • Scaling up commercial hiring (on rental basis) of e-autorickshaws • Maintenance and repair workfor existing e-autorickshaws				**Approximate Cost:** 1. 1 e-autorickshaw = Rs. 3 Lakhs [subsidy: up to Rs. 12,000 per vehicle; hence, Cost after subsidy = Rs. 2,88,000 per e-autorickshaw] 2. 1 e-tractor (35 HP) = Rs 6 Lakhs 3. 1 Mini goods EV transport truck = Rs. 9 to 10 Lakhs	
M 2.2	**E-Goods Carriers and E-tractors**	• Scaling up commercial hiring (on rental basis) of e-goods carriers & e-tractors • Maintenance and repair work for existing e-goods carriers & e-tractors					
M 2.3	**Partnership, Awareness and Capacity Building**	• Scaling up partnership • Continued capacity building of user groups and awareness generation amongst local people					

Phase III: 2030-31 to 2034-35									
Code	Proposed Intervention	Target Description	Annual Targets					Per Unit Cost	Total Cost
			2030-31	2031-32	2032-33	2033-34	2034-35		
IMPROVING ROAD & PEDESTRIAN INFRASTRUCTURE (M 1)									
M 1.1	**Accessibility & Serviceability of roads**	• Repair & maintenance of all roads in GP • Construction of additional roads (if required) in selected locations						**Approximate Cost:** 1. Construction of footpaths/pathways (Kharanja & interlocking) = Rs. 1,10,000 per meter length etc.) = Rs. 35 Lakhs 2. Road elevation by 2 feet = Rs. 75,00,000 per km length 3. Road RCC works/interlocking = Rs. 7,000 per meter length 4. Cost per km. of road upgradation/repair = Rs. 50 Lakhs	
M 1.2	**Enhancing Pedestrian infrastructure**	• Repair and Maintenance of all footpaths in GP • Construction of additional footpaths (if required) in selected locations							
PROMOTING E-MOBILITY (M 2)									
M 2.1	**Intermediate Public Transport (e-autorickshaws) for Last mile connectivity**	• Provision of additional e-autorickshaws (as per demand) • Scaling up commercial hiring (on rental basis) of e-autorickshaws • Maintenance and repair work for existing e-autorickshaws							

M 2.2	**E-Goods Carriers and E-tractors**	• Scaling up commercial hiring (on rental basis) of e-goods carriers & e-tractors • Maintenance and repair work for existing e-goods carriers & e-tractors						**Approximate Cost:** 1. 1 e-autorickshaw = Rs. 3 Lakhs [Subsidy: up to Rs. 12,000 per vehicle; hence, Cost after subsidy = Rs. 2,88,000 per e-autorickshaw] 2. 1 e-tractor (35 HP) = Rs 6 Lakhs 3. 1 mini goods EV transport truck = Rs. 9 to 10 Lakh	
M 2.3	**Partnership, Awareness and Capacity Building**	• Scaling up partnership • Continued capacity building of user groups and awareness generation amongst local people							

ENERGY INTERVENTIONS (E)

Phase I: 2024-25 to 2026-27							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2024-25	**2025-26**	**2026-27**		
SOLAR POWER INSTALLATIONS ON BUILDINGS & ROADS (E 1)							
E 1.1	**Solar Rooftop installations**	• Installation of rooftop solar panels on all (100%) government/PRI buildings (Panchayat Bhavan, Primary & Secondary schools, Inter college, PHCs, etc.)				**Approximate Cost:** 1. Solar Rooftop Installations = Rs. 50,000 per kWp [Subsidy*: ~40% (State + CFA); hence, Cost after subsidy = Rs. 30,000 per kWp] 2. Cost of 1 high mast = Rs. 50,000 3. Cost of 1 solar LED street light = Rs. 10,000	
E 1.2	**Solar Street Lights**	• Installation of high- mast and solar LED streetlights at key locations: Panchayat Bhavan, Primary & Secondary schools, Inter college, PHCs, playground, gardens, around water bodies, etc. • Installation of/Shift to solar LED street-lights covering 50% of the roads, streets and footpaths in the GP					
HARNESSING SOLAR POWER IN AGRICULTURE (E 2)							
E 2.1	**Agro- photovoltaic Installations**	Awareness generation amongst farmers, farmer groups, etc.				**Approximate Cost:** 1. Agro- photovoltaic = Rs. 1 Lakh per kWp (Subsidy: Component A of PM KUSUM)	

*Subsidies are dynamic and are subject to change as per various parameters fixed by the 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.

E 2.2	**Solar Pumps**	Replacing at least 20% existing diesel pump sets with solar pumps[33]				2. Solar Pumps = Rs. 3 to 5 Lakhs per 7.5 HP solar pump [Subsidy: 60% (State + CFA); hence, Cost after subsidy = Rs. 1.2 to 2 Lakhs per 7.5 HP solar pump]	
ENERGY EFFICIENT & ENERGY SAVING SOLUTIONS (E 3)							
E 3.1	**Energy Efficient Fixtures**	• Replacing all light fixtures and fans with energy efficient fixtures in all (100%) government/PRI buildings (Panchayat Bhavan, Primary & Secondary schools, Inter college, PHCs, etc.) • Replacing at least 1 incandescent/CFL bulb in all houses by LED bulb or 1 fluorescent tube light with LED tube light				**Approximate Cost:** 1. Cool Roof material alternatives: a. White lime = Rs 0.50 per sq. ft. b. Reflective Coating = Rs 20 to 40 per sq. ft. 2. Cost of 1 LED bulb = Rs. 70 3. Cost of 1 LED tubelight = Rs. 220 4. Cost of 1 EE fan = Rs. 1,110	
E 3.2	**Cool Roofs**	• Setting up a Cool Roof Programme in the GP • Application of any roof cooling alternative[34] on all (100%) government/PRI buildings (Panchayat Bhavan, Primary & Secondary schools, Inter college, PHCs, etc.)					
CLEAN COOKING SOLUTIONS (E 4)							
E 4.1	**Clean Cooking**	Establishing a system with alternative scenarios for households to adopt: a. Scenario I: 25% of HH having 6 to 7 cattle use Biogas plants + remaining HH use LPG b. Scenario II: 25% of HH in the top income groups use Solar powered induction cookstoves + remaining HH use LPG				**Approximate Cost:** 1.1 Biogas Plant (2 to 3 m^3) = Rs. 50,000 2. 1 Solar Cookstove (double burner without battery) = Rs. 45,000 3. 1 Improved Chulha = Rs. 3,000	

33 If solar pumps are not feasible then, energy efficient pumps (Kisan Urja Daksk Pumps by EESL) can be considered
34 White lime, white paint, reflective coatings, membranes, etc

		c. Scenario III: 25% of HH in the top income groups use Solar powered induction cookstoves + 50% of HH that currently use biomass use improved Chulhas +remaining HH use LPG					

Phase II: 2027-28 to 2029-30							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2027-28	**2028-29**	**2029-30**		
SOLAR POWER INSTALLATIONS ON BUILDINGS & ROADS (E 1)							
E 1.1	**Solar Rooftop installations**	• Installation of rooftop solar panels on at least 40% of existing pucca houses • Installation of rooftop solar panels on all new buildings (constructed during Phase II)				**Approximate Cost:** 1. Solar Rooftop Installations = Rs. 50,000 per kWp [Subsidy: ~40% (State + CFA); hence, Cost after subsidy = Rs. 30,000 per kWp] 2. Cost of 1 high mast = Rs. 50,000 3. Cost of 1 solar LED street light = Rs. 10,000	
E 1.2	**Solar Street Lights**	• Installation of additional high-mast & solar LED streetlights at key locations: Aarogya Van, Bal Van, around water bodies, etc. • Installation of/shift to solar LED streetlights covering 100% of the roads, streets and footpaths in the GP • Continued maintenance of existing streetlights installed					

HARNESSING SOLAR POWER IN AGRICULTURE (E 2)							
E 2.1	**Agro- photovoltaic Installations**	Installation of agro- photovoltaic on 25% of land under horticulture and legume crops (Potato, rajma, masoor, spinach and tomato)				**Approximate Cost:** 1. Agro- photovoltaic = Rs. 1 Lakh per kWp (Subsidy: Component A of PM KUSUM) 2. Solar Pumps = Rs. 3 to 5 Lakhs per 7.5 HP Solar pump [Subsidy: 60% (State + CFA); hence, Cost after subsidy = Rs. 1.2 to 2 Lakhs per 7.5 HP solar pump]	
E 2.2	**Solar Pumps**	Replacing additional diesel pump sets with solar pumps to achieve at least 50% solar powered pumps in GP					
ENERGY EFFICIENT & ENERGY SAVING SOLUTIONS (E 3)							
E 3.1	**Energy Efficient Fixtures**	• Replacing all (100%) incandescent/CFL bulbs in all houses by LED bulbs and all (100%) fluorescent tube lights with LED tube lights • Replacing at least 1 conventional fan in all houses with energy efficient fan				**Approximate Cost:** 1. Cool Roof material alternatives: a. White lime = Rs 0.50 per sq.ft. b. Reflective Coating = Rs 20 to 40 per sq. ft. 2. Cost of 1 LED bulb = Rs. 70 3. Cost of 1 LED tubelight = Rs. 220 4. Cost of 1 EE fan = Rs. 1,110	
E 3.2	**Cool Roofs**	• Application of any roof cooling alternative on at least 50% pucca houses • Recurrent maintenance/ reapplication of cool roof material on government/PRI buildings					

CLEAN COOKING SOLUTIONS (E 4)							
E 4.1	**Clean Cooking**	Scaling up the system: a. Scenario I: 50% of HH having 6 to 7 cattle use Biogas plants + remaining HH use LPG b. Scenario II: 50% of HH in the top income groups use Solar powered induction cookstoves + remaining HH use LPG c. Scenario III: 50% of HH in the top income groups use Solar powered induction cookstoves + 100% of HH that currently use biomass use improved Chulhas + remaining HH use LPG				**Approximate Cost:** 1. 1 Biogas Plant (2 to 3 m^3) = Rs. 50,000 2. 1 Solar Cookstove (double burner without battery) = Rs. 45,000 3. 1 Improved Chulha = Rs. 3,000	

Phase III: 2030-31 to 2034-35									
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**					**Per Unit Cost**	**Total Cost**
			2030-31	**2031-32**	**2032-33**	**2033-34**	**2034-35**		
SOLAR POWER INSTALLATIONS ON BUILDINGS & ROADS (E 1)									
E 1.1	**Solar Rooftop installations**	• Installation of rooftop solar panels on 100% of existing pucca houses • Installation of rooftop solar panels on all new buildings (constructed during Phase III)						**Approximate Cost:** 1. Solar Rooftop Installations = Rs. 50,000 per kWp [Subsidy: ~40% (State + CFA); hence, Cost after subsidy = Rs. 30,000 per kWp] 2. Cost of 1 high mast = Rs. 50,000 3. Cost of 1 solar LED street light = Rs. 10,000	
E 1.2	**Solar Street Lights**	• Continued maintenance of existing streetlights installed • All new streetlights/public space lighting to be solar- powered							

HARNESSING SOLAR POWER IN AGRICULTURE (E 2)									
E 2.1	**Agro-photovoltaic Installations**	Installation of additional agro-photovoltaic to achieve 50% of land under horticulture and legume crops (Potato, rajma, masoor, spinach and tomato)						**Approximate Cost:** 1. Agro- photovoltaic = Rs. 1 Lakh per kWp (Subsidy: Component A of PM KUSUM) 2. Solar Pumps = Rs. 3 to 5 Lakhs per 7.5 HP solar pump [Subsidy: 60% (State + CFA); hence, Cost after subsidy = Rs. 1.2 to 2 Lakhs per 7.5 HP solar pump]	
E 2.2	**Solar Pumps**	Replacing additional diesel pump sets with solar pumps to achieve 100% solar powered pumps in GP							
ENERGY EFFICIENT & ENERGY SAVING SOLUTIONS (E 3)									
E 3.1	**Energy Efficient Fixtures**	Replacing all (100%) conventional fan in all houses with energy efficient fan						**Approximate Cost:** 1. Cool Roof material alternatives: a. White lime = Rs 0.50 per sq. ft. b. Reflective Coating = Rs 20 to 40 per sq. ft. 2. Cost of 1 LED bulb = Rs. 70 3. Cost of 1 LED tubelight = Rs. 220 4. Cost of 1 EE fan = Rs. 1,110	
E 3.2	**Cool Roofs**	• Application of any roof cooling alternative on remaining pucca houses to achieve 100% coverage of residences under Cool Roof Programme • Recurrent maintenance/ reapplication of cool roof material on government/ PRI buildings and houses							

CLEAN COOKING SOLUTIONS (E 4)									
E 4.1	**Clean Cooking**	Scaling up the system: a. Scenario I: 100% of HH having 6 to 7 cattle use Biogas plants + remaining HH use LPG b. Scenario II: 100% of HH in the top income groups use Solar powered induction cookstoves + remaining HH use LPG c. Scenario III: 100% of HH in the top income groups use Solar powered induction cookstoves + 100% of HH that currently use biomass use improved Chulhas + remaining HH use LPG						**Approximate Cost:** 1. 1 BiogasPlant (2 to 3 m^3) = Rs.50,000 2. 1 Solar Cookstove (double burner without battery) = Rs. 45, 000 3. 1 Improved Chulha = Rs. 3,000	

INDUSTRY INTERVENTIONS (I)

Phase I: 2024-25 to 2026-27							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2024-25	**2025-26**	**2026-27**		
ENERGY TRANSITION (I 1)							
I 1.1	**Solar Power Installations**	• Installing solar power installations in industries in GP to meet at least 40% of electricity requirement • Setting up mechanisms like incentives, loans/financing aids, direct economic benefit mechanisms like green tariffs and tax reductions to encourage solar power installations in industries				**Approximate Cost:** Solar Rooftop Installations = Rs. 50,000 per kWp [Subsidy: ~40% (State + CFA); hence, Cost after subsidy = Rs. 30,000 per kWp]	
I 1.2	**Partnership and Business Model**	Establishment of a Solid waste management yard having: a. giving the excess renewable energy generated back to grid b. supporting the development of Decentralized Renewable Energy (DRE)					
I 1.3	**Clean Technologies**	Awareness building on clean and green technologies					
EMISSION REDUCTION & ABSORPTION (I 2)							
I 2.1	**Compliance to Standards**	Ensuring 100% compliance by all industries in GP to existing fuel emission standards				**Approximate Cost:** 1. Tree plantation (preparation, sapling, labor, etc.) = Rs. 70 per tree 2. Tree Guards (metal) = Rs. 1,200 / unit	

I 2.2	**Alternative Fuels and Materials**	Awareness building on: a. alternative and low- emitting fuels for various industrial activities b. materials which are low-emitting and green					
I 2.3	**Carbon Sequestration**	Plantation activities within and around industrial area to create green spaces and buffer zones					
ENERGY AND RESOURCE EFFICIENCY (I 3)							
I 3.1	**Energy Efficiency**	Awareness building on: a. Energy-use reduction technologies like improving the insulation of industrial plants, using heat exchangers, etc. b. Smart energy-efficient systems					
I 3.2	**Resource Efficiency**	Awareness programmes to encourage adoption of: a. practices like water reuse and recycle b. reuse and recycle of materials					

Phase II: 2027-28 to 2029-30							
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**			**Per Unit Cost**	**Total Cost**
			2027-28	**2028-29**	**2029-30**		
ENERGY TRANSITION (I 1)							
I 1.1	**Solar power Installations**	• Additional solar power installations in industries in GP to meet at least 75% of electricity requirement • Scaling up existing and innovating new mechanisms like incentives, loans/financing aids, direct economic benefit mechanisms like green tariffs and tax reductions to encourage solar power installations in industries				**Approximate Cost:** Solar Rooftop Installations = Rs. 50,000 per kWp [Subsidy: ~40% (State + CFA); hence, Cost after subsidy = Rs. 30,000 per kWp]	

I 1.2	**Partnership and Business Model**	Scaling up partnership between industries and local government to include nearby panchayats					
I 1.3	**Clean Technologies**	Promoting use of clean and green technologies through subsidies					
EMISSION REDUCTION & ABSORPTION (I 2)							
I 2.1	**Compliance to Standards**	Ensuring 100% compliance by all industries in GP to existing fuel emission standards					
I 2.2	**Alternative Fuels and Materials**	Encouraging use of following through mechanisms like subsidies: a. alternative and low- emitting fuels for various industrial activities b. materials which are low-emitting and green				**Approximate Cost:** 1. Tree plantation (preparation, sapling, labor,etc.) = Rs. 70 per tree 2. Tree Guards (metal) = Rs. 1,200 per unit	
I 2.3	**Carbon Sequestration**	Expansion of tree plantation and maintenance of existing trees within and around industrial area to create green spaces and buffer zones					

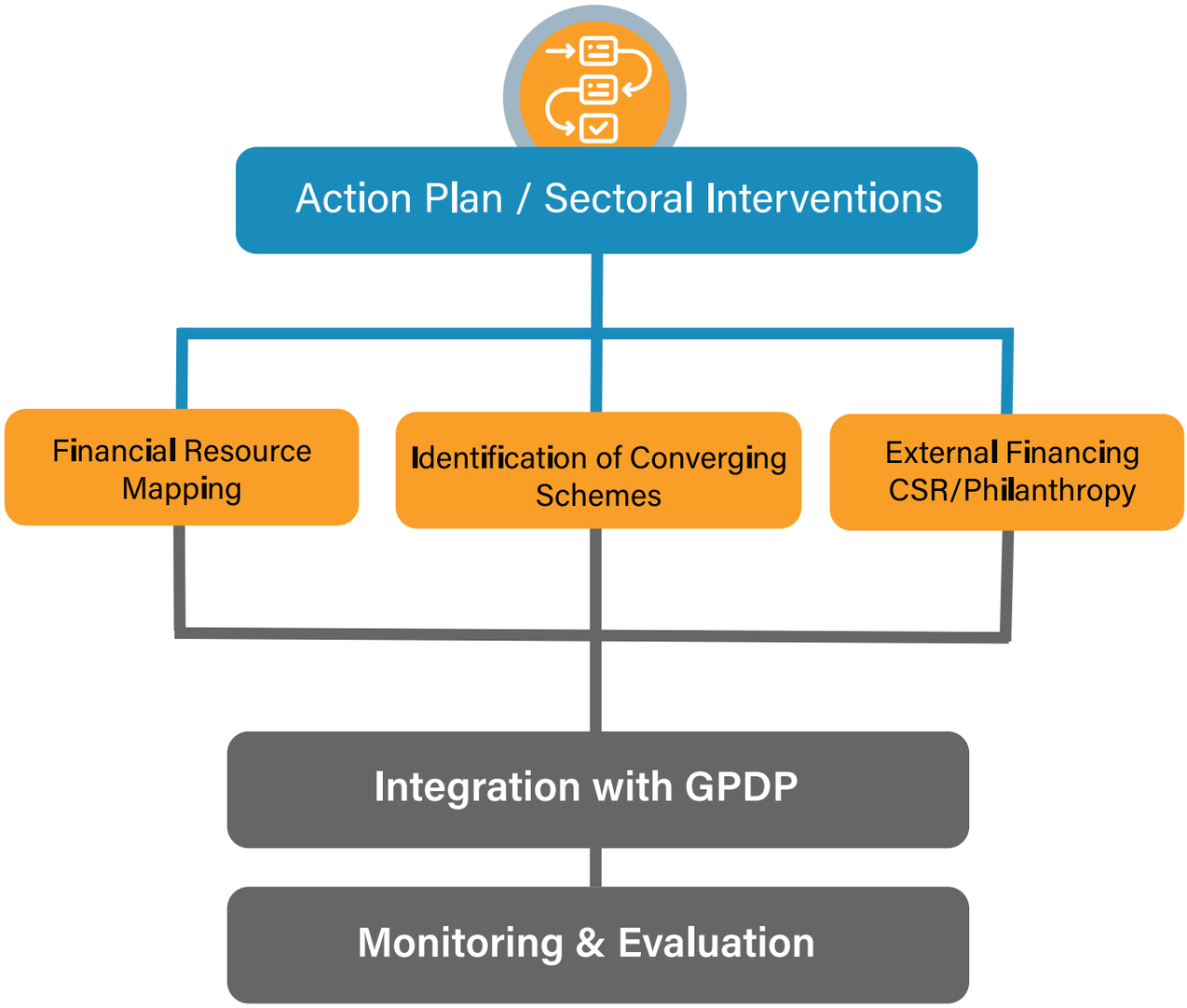
ENERGY AND RESOURCE EFFICIENCY (I 3)							
I 3.1	**Energy Efficiency**	• Encouraging use of following through mechanisms like subsidies: a. Energy-use reduction technologies like improving the insulation of industrial plants, using heat exchangers, etc. b. Smart energy- efficient systems • Encourage adoption of Perform, Achieve and Trade Scheme (PAT) to achieve energy efficiency					
I 3.2	**Resource Efficiency**	Encouraging use of following through mechanisms like subsidies: a. water reuse and recycle b. reuse and recycle of materials					

Phase III: 2030-31 to 2034-35									
Code	**Proposed Intervention**	**Target Description**	**Annual Targets**					**Per Unit Cost**	**Total Cost**
			2030-31	**2031-32**	**2032-33**	**2033-34**	**2034-35**		
ENERGY TRANSITION (I 1)									
I 1.1	**Solar power Installations**	• Additional solar power installations in industries in GP to meet 100% of electricity requirement • Scaling up existing and innovating new mechanisms like incentives, loans/financing aids, direct economic benefit mechanisms like green tariffs and tax reductions to encourage solar power installations in industries						**Approximate Cost:** Solar Rooftop Installations = Rs. 50,000 per kWp [Subsidy: ~40% (State + CFA); hence, Cost after subsidy = Rs. 30,000 per kWp]	

I 1.2	**Partnership and Business Model**	Scaling up partnership between industries and local government to include nearby panchayats and districts							
I 1.3	**Clean Technologies**	Scaling up use of clean and green technologies							
EMISSION REDUCTION & ABSORPTION (I 2)									
I 2.1	**Compliance to Standards**	Ensuring 100% compliance by all industries in GP to existing fuel emission standards						**Approximate Cost:** 1. Tree plantation (preparation, sapling, labor, etc.) = Rs. 70 per tree 2. Tree Guards (metal) = Rs. 1,200 per unit	
I 2.2	**Alternative Fuels and Materials**	Encouraging use of following through mechanisms like subsidies: a. alternative and low- emitting fuels for various industrial activities b. materials which low- emitting and green							
I 2.3	**Carbon Sequestration**	Expansion of tree plantation and maintenance of existing trees within and around industrial area to create green spaces and buffer zones							

ENERGY AND RESOURCE EFFICIENCY (I 3)									
I 3.1	**Energy Efficiency**	• Scaling up use of following through mechanisms like subsidies: a. Energy-use reduction technologies like improving the insulation of industrial plants, using heat exchangers, etc. b. Smart energy- efficient systems • Scaling up adoption of Perform, Achieve and Trade Scheme (PAT) to achieve energy efficiency							
I 3.2	**Resource Efficiency**	Scaling up use of following through mechanisms like subsidies: a. water reuse and recycle b. reuse and recycle of materials							

3.3 Implementation and Monitoring & Evaluation Framework



Annexure VII provides detail list of proposed Indicators for Monitoring & Evaluation.

4

Template for Climate Smart Gram Panchayat Action Plan (CSGPAP)

4 Template for Climate Smart Gram Panchayat Action Plan (CSGPAP)

Outline of the Action Plan

1. Executive Summary and Setting a Broad Vision

What is the transformation you would like to see in your GP and by when?

2. Gram Panchayat Profile (attached in Annexure IV)

i. Gram Panchayat at a Glance
ii. Climate Variability & Vulnerability Profile
iii. Key Economic Activities
iv. Women's Economic Engagement
v. Agriculture
vi. Natural Resources
vii. Amenities of Gram Panchayat (within the GP & nearby)

3. Carbon Footprint Profile

i. Energy
ii. Agriculture & Livestock
iii. Sequestration from Forest/Green Cover (if applicable)
iv. Waste

4. Key Issues & Resulting Impacts Identified in the GP

Detailed analysis of data collected and responses received from:
i. Focus Group Discussions (FGDs)
ii. Survey Questionnaire
iii. Hazard, Risk, Vulnerability, and Capacity Assessment (HRVCA)

5. Proposed Recommendations

Suggested thematic areas for interventions covering both adaptation & mitigation based on Gram Panchayat context and issues:
i. Enhancing Green Spaces & Biodiversity
ii. Management & Rejuvenation of Water Bodies
iii. Sustainable Agriculture
iv. Sustainable Solid Waste Management
v. Access to Clean, Sustainable, Affordable & Reliable Energy
vi. Sustainable & Enhanced Mobility
vii. Clean, Resource & Energy efficient and Innovative Industries
viii. Enhancing Livelihoods & Promoting Green Entrepreneurship

Phasing: The interventions are to be proposed across following phases:

a. (Phase I): 2024-25 to 2026-27
b. (Phase II): 2027-28 to 2029-30
c. (Phase III): 2030-31 to 2034-35

The activities undertaken in the various phases should be in line with the broad vision for the GP as well as in line with the national and state priorities, programmes and targets[35].

35. See annex V and VI for some of the national / state priorities and programmes

Cost estimation: The estimated cost should be computed for each of the proposed interventions under each thematic area. Further, the cumulative cost can be calculated.

6. Sources of Financing

i. Existing state and central schemes/programmes that can facilitate implementation/provide subsidy for the interventions.

ii. Other additional sources of financing from CSRs, private sector, etc. can be included.

Monitoring & Evaluation Framework: List of indicators to monitor and evaluate the progress and performance of interventions proposed under each thematic area.

7. Alignment with Sustainable Development Goals (SDGs) & Nationally Determined Contributions (NDCs)

i. Co-benefits: Environmental, social and economic co-benefits of the proposed interventions

ii. SDG Linkages: Alignment of interventions with the specific SDGs, their targets and indicators

Annexures

Annexures

Annexure I: Secondary Data & Potential Sources

Name of the Gram Panchayat:

Name of the Block:

Name of the District:

Themes/Domains	Indicators	Department and Sources
Landscape detail of GP (Hectare)	a) Forest Fringe village	Revenue Department
	b) Hill slope	
	c) Plain Land	
	d) On Riverbank	
	e) Dry Land	
	f) Degraded / Desertified Land	
Water Resources	a) Groundwater (Wells, Tube wells)	1. Jal Kal Vibhag 2. Irrigation Department (under Jal Kal Vibhag) 3. Rural Development Department 4. Central Ground Water Board 5. WRIS (India Water Resources Information System) Portal, Ministry of Jal Shakti Link: https://indiawris.gov.in/wris/#/GWResources
	b) Surface Water Bodies (Ponds, Lakes, Man-made Structure)	
	c) Rainwater	
	d) River/Canal	
Available Natural Resources	a) Forest (existing & previous area, change)	1. State Forest Department 2. District Forest Officers (DFOs) 3. State Biodiversity Board 4. Gram Panchayat Office
	b) Wetlands (existing & previous area, change)	
Local Weather Conditions	a) Max Temp	1. Nearest IMD (India Meteorological Department) Station Link:https://cdsp.imdpune.gov.in/vivaranika_climateinfo.php#climateinfo 2. Krishi Vigyan Kendra (KVKs) 3. Agricultural Department
	b) Min Temp	
	c) Average Rainfall	

Themes/Domains	Indicators	Department and Sources
		4. BHUVAN Portal Link: https://bhuvan-panchayat3.nrsc.gov.in/
	d) Rainy months	
	e) Winter Months	
	f) Summer Months	
Extreme Weather Events/Disasters (Occurrence, frequency, intensity)	a) Heat Waves	1. District Disaster Management Authority (DDMA) 2. Village Disaster Management Committee 3. State Disaster Management Authority (SDMA) 4. E-Gram Swaraj Portal, MoPR (GPDP) Link: https://egramswaraj.gov.in/mprDashboard.do
	b) Cold Waves	
	c) Hailstorms	
	d) Drought	
	e) Flood	
	f) Earthquake	
	g) Change in above disasters (increase/decrease/no change)	
Disaster Preparedness	a) GP Disaster Management Plan	
	b) Disaster Resilient Infrastructure	
	c) Early Warning System/ Weather Alert System/Amazon Web Services (AWS)	
	d) Community Awareness	
	f) Emergency Food Inventory	
Agriculture (All area in Hectares)	a) Total Waste Land	1. Agriculture Department 2. Irrigation Department (under Jal Kal Vibhag) 3. Revenue Department
	b) Total Agriculture Land	
	c) Net Cultivable Area	
	a) Gross Cultivable Area	

Themes/Domains	Indicators	Department and Sources
	b) Irrigated Area	
	c) Rainfed Area	
	d) Area Under Organic Farming (hectare)	
	e) Is zero budget natural farming practiced in the gram panchayat?	
	f) Area under Zero Budget Natural Farming	
	g) Any other sustainable farming practices	
Soil Health Card Scheme	a) Frequency of Assessment	Agriculture Department
	b) Effect on cropping pattern	
	c) Effect on fertilizer input	
	d) Effect on yield	
	e) Are there any storage/cold storage facilities	
	f) Capacity of available facilities	
	g) Cost of the facilities	
WASH and Health	a) Households having piped water supply	1. Rural Development Department (Jal Jeevan Mission) 2. Department of Panchayati Raj (SBM -G) (Jalapurti Section) 3. Health Department 4. Watershed Department 5. Irrigation Department (under Jal Kal Vibhag) 6. Primary Health Centres (PHCs) 7. Community Health Centres (CHCs) 8. Forest Department
	b) Regularity of water supply	
	c) List of water bodies in the GP and area covered	
	d) Water Quality	
	e) Ground Water Quality (Major water contaminants	

Themes/Domains	Indicators	Department and Sources
	like TDS, Alkalinity, Fluoride, Nitrates, Phosphates, etc.)	
	f) Watershed Development Activities (Water Recharge, Rainwater Harvesting, Integrated Water Management Programme (IWMP), Others)	
	g) Total Solid Waste generated (tonne, kg, kg/household)	
	h) Wastewater Treatment in GP (Percentage, Quantity and Capacity)	
	i) Number of hospitals/ in the gram panchayat or distance of the nearest hospital/PHC.	
	j) Number of Integrated Child Development Scheme (ICDS), Anganwadi centres and ASHA workers in the gram panchayat	
	k) Number of female doctors at these centres or otherwise in the gram panchayat.	
	l) Access to mobile health clinics/ various health melas/ camps as per govt. schemes and their frequency.	
	m) Access to digital healthcare clinics	
	n) Number of cases of various diseases (Vector-borne, water-borne, respiratory illness)	
	o) Increase in the incidence of non-communicable diseases like (Heat Stroke,	

Themes/Domains	Indicators	Department and Sources
	Cold weather) and the most affected age group	
Socio-Economic	a) Total Population	1. Socio-economic & Caste Census, 2019 (U.P. Govt.) Link: https://secc.gov.in/getAllHhdSummaryStateReport.htm/09 2. Census 2011 Link:https://censusindia.gov.in/census.website/data/census-tables 3. Rural Development (Mission Antyodaya) 4. Revenue Department (Svamitva Scheme) 5. Gram Panchayat Office 6. Micro Small and Medium Enterprises (MSME) Department 7. Kaushal Vikas Kendra (Skill Development Mission)
	b) Total Male Population	
	c) Total Female Population	
	d) Number of Pucca houses	
	e) Number of Kucha houses	
	f) Percentage of Population Employed	
	g) Average Household Income	
	h) No. of Single Income Households	
	i) No. of Agriculture (only) dependent households	
	j) No. of Households with multiple income (Number of members in) • Small Scale/ Cottage Industries • Arts/Handicrafts • Animal Husbandry • Business (Local Shops) • Others	
Self-Help Groups (SHGs) and Farmer's Producer Organizations (FPOs)	a) Number of SHGs and number of members in each SHGs	1. Agriculture Department 2. National Bank For Agriculture And Rural Development (NABARD) 3. Gram Panchayat Office 4. Rural Development Department (State Rural Livelihood Mission) 5. State Agricultural Produce Markets Board (Mandi Parishad)
	b) Annual Income generated from SHGs	

Themes/Domains	Indicators	Department and Sources
	c) Number of FPOs and number of members in each FPOs	
	d) Annual Revenue generated from FPOs	
	e) Similar details for any other registered groups/committees/organizations	
Market/Procurement Centres	List of nearby markets/procurement centres	
	Source of information on markets and rates	
Schemes	Number of beneficiaries of/ projects or works undertaken under the following schemes	1. Rural Development Department 2. Gram Panchayat Office 3. Kaushal Vikas Kendra 4. Agriculture Department 5. Panchayati Raj Department 6. Forest Department 7. UPNEDA 8. Krishi Vigyan Kendra (KVK)
	a) Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)	
	b) Prime Minister's Employment Generation Programme (PMEGP)	
	c) Pradhan Mantri Awas Yojana (PMAY-R) and Chief Minister Awas Yojana (CMAY)	
	d) Computer Training Programme	
	e) UP Skill Development Mission	
	f) Rashtriya Kaushal Vikas Yojana (RKVY)	
	g) Pradhan Mantri Ujjwala Yojana (PMUY)	
	h) Weather-based Crop Insurance Scheme	
	i) Pradhan Mantri Fasal Bima Yojana (PMFBY)	

Themes/Domains	Indicators	Department and Sources
	j) Pradhan Mantri Krishi Sinchai Yojana (PMKSY)	
	k) Soil Health Card	
	l) Kisan Credit Card	
	m) Swachh Bharat Mission	
	n) Solar Irrigation Pump Scheme	
	o) New National Biogas and Organic Manure Programme	
	p) Decentralised Procurement of Food grains Scheme	
	q) Gobar Dhan Scheme	
	r) Others	
Banking/E-banking	Population having active bank accounts, using E-Banking/ Digital Payment Apps	1. Gram Panchayat Office 2. Panchayati Raj Department
Education	a) Number of schools (Primary, Secondary and High schools)	1. Education Department 2. Samagra Shiksha Abhiyan 3. UPSDM (Uttar Pradesh Skill development Mission) 4. Uttar Pradesh Madhyamik Shiksha Parishad (UPMSP)- Department of Secondary Education
	b) Number of Colleges	
	c) Percent enrolment in each	
	d) Dropout rate and its cause	
	e) Skill development/ vocational trainings/reskilling institutes and percentage of enrolment	

Themes/Domains	Indicators	Department and Sources
Roads	a) Distance from nearest State/National Highway	1. Rural Development Department 2. Panchayati Raj Department (Zilla Panchayat, Gram Panchayat, Kshetra Panchayat) 3. Public Works Department (Roads & Building Department)
	b) Condition of roads connecting to urban centres/markets	
	c) Condition of roads in the GP	
Energy	a) Number of electrified households in the gram panchayat	1. UPPCL (Uttar Pradesh Power Corporation Limited) 2. Gram Panchayat Office
	b) Frequency of Power Cuts and voltage fluctuations	
	c) Damage to appliances or equipment due to voltage fluctuations (e.g.: Agri-pump sets)	
	d) Number of farmers who have availed the facility of Agri-feeders and its source/fuel.	
	How many solar Agri-feeders in gram panchayat	
	What is the installed capacity of solar Agri-feeders?	
Renewable Energy	Utilization status of non-fossil fuel or renewable energy technology in the village (e.g.: solar street lamps, wind, or hydro based innovations)	Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA)
Industry	a) Number of industries in the GP	1.MSME Department 2. UPPCL (Uttar Pradesh Power Corporation Limited) 3. District Industrial Centres (DICs)
	b) Source of energy	
	c) Energy consumption	

Annexure II: Primary Questionnaire for Gram Panchayat (GP) Survey

UP Climate Smart GP Survey Questionnaire[36]

Gram Panchayat: **Block:** **District:**

I. General Profile

			Number (state source of information – community members' estimates (1)
1		**Number of revenue villages**	
2		**Number of hamlets**	
3	**a**	Total Population	
	b	Total Male Population	
	c	Total Female Population	
	d	Persons With Disability Population	
	e	Children Population Total	
	f	Senior citizens (persons of age >60)	
4		Total number of households	
	a	Number of BPL Households	
5		Total Geographical Area	
6	**a**	Literacy Rate	
7	**a**	Number of pucca houses	
	b	Number of Kucha houses (specify materials used majorly)	

II. Socio-economic

8	Type of agriculture (only) dependent households in the GP	Total Number of households
	With Own Land	
	As Tenant	
	As Contract farming	
	As Wage laborer	
	In Other arrangements	
	Additional information (indicate whether households are engaged in more than one type of agricultural activity)	

36. This questionnaire is for conducting Gram Panchayat level survey

9	Sources of income in the GP	Total No. of households
	Service Sector (Example: Teaching, Bank, Govt Job, etc.)	
	Small Scale/Cottage Industries	
	Agriculture	
	Arts/Handicrafts	
	Animal Husbandry	
	Business (Local Shops)	
	Entrepreneurship	
	Wage labor (non-farm)	
	Others	

10		Migration				Yes	No
	a	Have villagers migrated from your GP in last 5 years?				☐	☐
	b	Places they have migrated to	No. of families/individual (specify) migrated in last 5 years	Average no. of SC families migrated in last 5 years	Average no. of ST families migrated in last 5 years	Average no. of OBC families migrated in last 5 years	Main Reasons for migration
		Other villages					
		Nearby Towns					
		Major Urban centers of state					
		Major metropolitans of country					
	c	Have persons/families migrated into your GP in last 5 years				Yes ☐	No ☐
		How many families have migrated into your GP in the last 5 years? What is the main reason?					
11		**Status of women**					
	a	**Number of Women headed households (i.e., women are the main/sole earners)**					
	b	**Women working in agriculture**			**Total Number**		
		Own Land					

		Tenant	
		Contract farming	
		Wage laborer	
		Other arrangements	
		Additional information (indicate women are engaged in more than one type of agricultural activity)	
	c	**Women working in other jobs/sectors**	**Total Number**
		Service Sector (Example: Teaching, Bank, Govt Job, etc.)	
		Small Scale/Cottage Industries	
		Agriculture	
		Arts/Handicrafts	
		Animal Husbandry	
		Business (Local Shops)	
		Wage labor (non-farm)	
		Others	

12	**SHGs**				
	Name of SHG	**No. of members**	**Activity undertaken**	**Annual savings**	**Linked or not linked**

13	FPOs (Farmer Producer Organizations)					
	Name of FPO	Is it headed by women	No. of members in each FPOs	Annual Revenue generated from FPOs/ Annual savings (indicate)	Farm produce	Post-harvest activities engaged in/ area of activities
		☐				
		☐				
		☐				
		☐				
		☐				

14	Other Community Based Organizations/Cooperatives					
	Name of social groups/cooperatives	Is it headed by women?	No. of members in each	Annual Revenue generated/ Annual savings	Product/ Service	Market/ target consumers
		☐				
		☐				
		☐				
		☐				
		☐				
		☐				
		☐				
		☐				
		☐				
		☐				

15		Schemes					
	a	**Name of scheme**	**No. of beneficiaries registered**	**No. of beneficiaries who received benefits**	**Total payments received in GP in previous year (Rs)**	**Arrears, if any (Rs)**	**Activities Undertaken**
		MGNREGA					
		PMGKAY (Gareeb Kalyan Ann Yojana)/ NFSA					
		Pradhan Mantri Ujjwala Yojana (PMUY)					
		Pradhan Mantri Krishi Sinchai Yojana (PMKSY)					
		PM KUSUM					
	b	**Other schemes**	**No of beneficiaries registered**	**No. of beneficiaries who received benefits**	**Total payments received in GP in previous year (Rs)**	**Arrears, if any (Rs)**	**Activities Undertaken**
		Gram Ujala Yojana					
		Energy Efficiency schemes					
		Pradhan Mantri Awas Yojana					
		Public Distribution System					
		Computer Training Programme					
		UP Skill Development Mission					
		Rashtriya Kaushal Vikas Yojana (RKVY)					
		Weather-based Crop Insurance Scheme					
		Pradhan Mantri Fasal Bima Yojana (PMFBY)					
		Crop Insurance Schemes					
		Soil Health Cards					

		Kisan Credit Card					
		Swachh Bharat Mission					
		Solar Irrigation Pump Scheme					
		New National Biogas and Organic Manure Programme					
		Decentralized Procurement of Food grains Scheme					
		Gobar Dhan Scheme					
		Rainwater Harvesting schemes					
		IWDP (Integrated watershed development Programme)					
		Other Watershed Development Schemes					
		Others (One District One Product, Make in India, other entrepreneurship support schemes etc.)					

16	**Number of people with active bank accounts**	
17	**Number of people using E-Banking/Digital Payments Apps/ UPI**	

18	**Nearby Agri-Markets/ procurement centers/govt centers**	**Is the market or center used by GP?**		**If not, why is the center/market not used?**	**Crops produced (quintal)**	**Crops sold (quintal)**	**Distance from GP (if outside GP) (km)**
		Yes	**No**				
		□	□				
		□	□				
		□	□				
		□	□				

19		Education (within GP only)								
		Type/ level	How much rooftop area is available? (m^2)	Number of students enrolled			Number of students dropped out in last year			Major Cause of dropping out: Health Issues (1) Accessibility Issues (2) Economic Problems (3) Other (4) (Please Specify)
				Total	Girls	SC/ST/ OBC	Total	Girls	SC/ST/ OBC	
	a	Primary Schools								
	b	Secondary Schools								
	c	High Schools								
	e	Other Institutes								

20	Name of skill development/vocational trainings/reskilling institutes (within GP only)	Available rooftop area (m^2)	Type of institute Government (1) Private (2)	Number of persons enrolled	Age group of persons enrolled

21	Access to State/National Highways			
	Name of the Highway	**State Highway (1) National Highway (2)**	**Distance from the GP**	**Condition of the connecting road Good (1) Bad (2) Poor (3) Very Poor (4)**

III. Information on land resources

22		Details of forest land	
	a	Area under village forest (acre)	
	b	Area notified by Forest Department (acre)	
	c	Area available for public access/utility (acre)	
	d	How much is encroached? (acre)	
	e	Any deforestation activities in the last 5 years?	
	f	Approximate area deforested? (acre)	

23		Other land classification			
	a	How much common land is available in the GP (acre)?			
	b	How much of this land is encroached (acre)?			
	c	Mining Activities within the GP	**Yes** □	**No** □	**Area covered (acre):**

		Type of Mining Sand Mining (1) Mineral Mining- specify the mineral (2) Others- specify (3)			
		Additional information			

24		Water bodies		
		Particulars	**Yes**	**No**
	a	Are there any water bodies in your GP?	□	□
	b	Total number of water bodies in the GP		
	c	Have the water bodies been encroached?	□	□
	d	Since when has the encroachment been observed?		
	e	Is the land area around water body encroached?		

25		Water Supply	
	a	**What is the main source of water in the GP for household supply**? Canal (1) Rainwater (2) Groundwater (3) Ponds/Lakes (4) Others (5)	
	b	**Is the above source seasonal or perennial?**	
	c	**How is water supplied to households? (Can choose multiple options)** Piped Water Supply (1) Common collection points within GP (2) Water tanks (3) Fetched from a distance by women/ children (4) Hand pump (5) Elevated Surface reservoir (6) Wells (7) Others (8) - specify *If 4, then average distance travelled daily?	

	d	**Number of households with piped water supply?**	
	e	**Is the flow rate low, high or satisfactory?**	
	f	**Regularity of piped water supply** 24*7 (1) Fairly Regular (2) Irregular (3)	
	g	**What is the main source of water in the GP for irrigation**? Canal (1) Rainwater (2) Groundwater: Tube well (3a); Well(3b); Ponds/Lakes (4) Water tanks (5) River (6) Others (7)	
	h	**Is the above source seasonal or perennial?**	
	i	**Is the flow rate of supply low, high or satisfactory?**	
	j	Additional information (e.g., Whether water supply is sufficient for households, agri & related activities, industries; has the availability of water from groundwater, river or canal increased, decreased or remained the same in the past few years? does the use of water tanks increase during the dry or summer season?)	

IV. Climate Perception

Major changes in temperature & rainfall					
26					
	a	Observed Summer Months			
	b	Changes observed in summer temperature (in the last 5 years)	Increase in no. of hot days	Decrease in no. of hot days	No change in no. of hot days
			□	□	□
	c	Number of days			
	d	Additional Information (Any observed shift in summer months)			
27					
	a	Observed winter months			
	b	Changes observed in winter temperature (in the last 5 years)	Increase in no. of cold days	Decrease in no. of cold days	No change in no. of cold days
			□	□	□

	c	Number of days			
	d	Additional Information (Any observed shift in winter months)			
28					
	a	Observed monsoon months			
	b	Changes observed in rainfall in monsoon season (in the last 5 years)	Increase in no. of rainy days	Decrease in no. of rainy days	No change in no. of rainy days
			☐	☐	☐
	c	Number of days			
	d	Additional Information (Any observed shift in monsoon months)			
29					
	a	Has there been a change in rainfall in non-monsoon season (in the last 5 years)	Increase in no. of rainy days	Decrease in no. of rainy days	No change in no. of rainy days
			☐	☐	☐
	b	Changes observed in summer season rainfall	Increase in no. of rainy days	Decrease in no. of rainy days	No change in no. of rainy days
			☐	☐	☐
	c	Number of days			
	d	Changes observed in winter season rainfall	Increase in no. of rainy days	Decrease in no. of rainy days	No change in no. of rainy days
			☐	☐	☐
	e	Number of days			
	f	Additional Information			

Extreme weather events							
30		**DROUGHT**					
	a	Occurrence of Drought	Year 1 (2022)	Year 2 (2021)	Year 3 (2020)	Year 4 (2019)	Year 5 (2018)
			☐	☐	☐	☐	☐
	b	Which months were drought observed?					
	c	How was the drought managed (govt support, private support, digging wells, etc.)	Management at household level:			Management at agriculture level:	
	d	Frequency of drought: Occurrence of drought episodes (in the last 5 years)	Increased	Decreased	No change		
			☐	☐	☐		
	e	Additional Information (i)Any major older events; (ii) Any health impacts					
31		**FLOODS**					

	a	Occurrence of Floods	Year 1 (2022)	Year 2 (2021)	Year 3 (2020)	Year 4 (2019)	Year 5 (2018)
			☐	☐	☐	☐	☐
	b	Which months were floods observed?					
	c	How was the flood managed (govt support, private support, etc.)	Management at household level:			Management at agriculture level:	
	d	Frequency of Floods: Occurrence of drought episodes (in the last 5 years)	Increased	Decreased	No change		
			☐	☐	☐		
	e	Additional Information (i)Any major older events; (ii) Any health impacts					
32		**LANDSLIDE/ MUDSLIDE**					
	a	Occurrence of Landslide	Year 1 (2022)	Year 2 (2021)	Year 3 (2020)	Year 4 (2019)	Year 5 (2018)
			☐	☐	☐	☐	☐
	b	Which months were landslide observed?					
	c	How was the landslide managed? (Govt support, private support, etc.)	Management at household level:			Management at agriculture level:	
	d	Frequency of landslide: Occurrence of landslide episodes (in the last 5 years)	Increased	Decreased	No change		
			☐	☐	☐		
	e	Additional Information (i)Any major older events; (ii) Any health impacts					
33		**HAILSTORMS**					
	a	Occurrence of Hailstorm	Year 1 (2022)	Year 2 (2021)	Year 3 (2020)	Year 4 (2019)	Year 5 (2018)
			☐	☐	☐	☐	☐
	b	Which months were hailstorm observed?					
	c	How was the hailstorm managed? (Govt support, private support, etc.)	Management at household level:			Management at agriculture level:	
	d	Frequency of Hailstorm: Occurrence of hailstorm episodes (in the last 5 years)	Increased	Decreased	No change		
			☐	☐	☐		
34		**PESTS/CROP DISEASES**					
	a	Occurrence of Pests/ Diseases	Year 1 (2022)	Year 2 (2021)	Year 3 (2020)	Year 4 (2019)	Year 5 (2018)
			☐	☐	☐	☐	☐
	b	Which months were Pests/ Disease observed?					
		Which pests/disease were observed?					

	c	How were the Pests/ Diseases managed? (Govt support, private support, etc.)					
	d	Frequency of Pests/diseases: Occurrence of Pest/disease episodes (in the last 5 years)	Increased	Decreased	No change		
			□	□	□		
		Additional Information					

35	**Disaster Preparedness in GP**				
		Is Disaster Management/Preparedness measure available at GP level?		**Do villagers have access to it?**	
	Disaster Preparedness Measures	Yes	No	Yes	No
	Village Disaster management plan	☐	☐	☐	☐
	Village disaster management committee	☐	☐	☐	☐
	Early Warning System/ Weather alert system/AWS	☐	☐	☐	☐
	Emergency Food bank	☐	☐	☐	☐
	Others	☐	☐	☐	☐

36		**Food storage**	
	a	**What are the types of food stored in the emergency food bank in GP?**	
		Grains (specify)	
		Oil	
		Sugar	
		Other food items (specify)	
	b	Is there a cold storage within GP: If yes, what is the capacity?	

37	**Sources of information for Weather Alerts, Early Warning Systems, Agri-based alerts available in the GP**	
	Local Agriculture Officer	
	Newspaper/News/Radio	

	Mobile Phone/Apps	
	Word of mouth	
	KVKs (Krishi Vigyan Kendra)	
	Animal Husbandry Dept	
	Horticulture Dept	
	Others	

		Impacts on Agriculture & related activities (in the last 5 years)					
38		**Crop Loss**					
	a	Year of occurrence	Season of Loss Kharif (1) Rabi (2) Zaid/ other time (3)	Name of Crop	Reason for loss (disease, extreme event – heat, cold, rain, hail, soil etc.)	Estimated quantity of loss (quintal)	Resultant loss in income (Avg in Rs)
		Year 1 (2022)					
		Year 2 (2021)					
		Year 3 (2020)					
		Year 4 (2019)					
		Year 5 (2018)					
	b	Are you aware about crop insurance?	Yes	No			
			☐	☐			
		Additional Information (who are the persons with crop insurances- big land owner, small & medium farmers, etc., What is the satisfaction level of persons availing crop insurance?)					

39		Change in cropping patterns				
	a	Common Crops (Name)	Kharif:	Rabi:	Zaid/ Other Seasons:	
	b	Name of crop	Traditional Sowing time	Observed change in sowing time over last 5 years?	New sowing time	Reason for change
	c	Additional information (Any crop which are lost)				

40		Change in irrigation pattern				
	a	Name of crop	Current method used for irrigation Sprinkler (1) Drip Irrigation (2) Canal (3) Rain-fed (4) Traditional (5) Others (6) - specify	Quantity of water used currently (Rs. Per Acre)	Previous irrigation method used (Rs. Per Acre)	Quantity of water used previously (Rs. Per Acre)

	b	Number of pumps in GP	Diesel based	Electricity based	Solar Pump	Traditional pumping methods	
	c	Additional Information, if any					
41		**Livestock/ Animal Husbandry**					
	a	Livestock & animal husbandry practices prevalent in the GP Dairy (1) Poultry (2) Fishery (3) Piggery (4) Apiculture (5) Others –specify (6)					
	b	Impact on Diary	Animal lost Cow (1) Buffalo (2) Other (3)	Number of animals lost (Specify for each animal)	Reason for loss (Temperature, Floods, diseases, age, accidents etc.)	Season of loss	Any observed change in productivity? Increased (1) Decreased (2) No change (3)
		Year 1 (2022)					
		Year 2 (2021)					
		Year 3 (2020)					
		Year 4 (2019)					
		Year 5 (2018))					
		Additional information					
	c	Impact on Poultry	Animal lost Chicken (1) Ducks (2) Others (3)	Number of animals lost (Specify for each animal)	Reason for loss	Season of loss	Any observed change in productivity? Increased (1) Decreased (2) No change (3)
		Year 1 (2022)					

		Year 2 (2021)					
		Year 3 (2020)					
		Year 4 (2019)					
		Year 5 (2018))					
		Additional information					
	d	Impact on Goats & Sheep	Animal lost Goats (1) Sheep (2)	Number of animals lost (Specify for each animal)	Reason for loss	Season of loss	Any observed change in productivity? Increased (1) Decreased (2) No change (3)
		Year 1 (2022)					
		Year 2 (2021)					
		Year 3 (2020)					
		Year 4 (2019)					
		Year 5 (2018))					
		Additional information					
	d	Impact on other animals	Animal lost (specify animal)	Number of animals lost (Specify for each animal)	Reason for loss	Season of loss	Any observed change in productivity? Increased (1) Decreased (2) No change (3)
		Year 1 (2022)					
		Year 2 (2021)					
		Year 3 (2020)					
		Year 4 (2019)					
		Year 5 (2018))					
		Additional information					

V. Agriculture & Livestock

42	a		Major crops grown and related information											
						Fertilizer use			Pesticide use			Weedicide use		
		Crop (Include crops on agriculture land, horticulture, floriculture etc.)	Season	Area (acre)	Yield (quintal)	Type of fertilizer used	Average quantity used (kg/acre)	In the last 5 years has the amount of fertilizer use Increased (1) Decreased (2) No change (3)	Type of pesticide used	Average quantity used (kg/acre)	In the last 5 years has the amount of fertilizer use Increased (1) Decreased (2) No change (3)	Type of weedicide used	Average quantity used (kg/acre)	In the last 5 years has the amount of fertilizer use Increased (1) Decreased (2) No change (3)

	b	Is crop burning practiced in the GP?	Yes ☐	No ☐	Area that is burned under various crops (acre):		Has this been a historical practice? (yes/no)	If not, when did it start?	Are you aware of schemes for management of crop residue? (yes/no)					

.

43	Organic Farming Practiced				
	Crop	Area	Income per unit crop (Rs/quintal)	Market where crop sold	Certified/verified by third party

44	Other sustainable farming practices (like Zero Budget Natural Farming)			
	Crop	Sustainable practice (zero tillage, mulching, crop rotation, inter cropping, vermicompost, compost, mixed cropping living root, natural pest management, increasing organic residues, others)	Area (acres)	Income generated per unit crop

45	Agro-forestry, social forestry, wasteland development and other tree plantation activities										
	Kind of plantation activity	Area covered	Location	Scheme utilized: National Agroforestry Mission (1) Integrated Watershed Management Programme (2) Rain-fed area Programme (3) MGNREGA (4) Vriksharopan Jan Andolan (5) Others (6) - specify	Monoculture (1) Mixed species (2)	Species planted	Date of initiation	% Success	Access to/ opportunities for people to use or benefit from agro-forestry activity	Change in access/opportunity in the last 10 years. Increased (1) Decreased (2) No change (3)	Cause of change: Increased profitability (1) Species related (2) Deforestation (3) Others (4) - specify

46	Sustainable livestock management techniques adopted			
	Livestock type	**Total Number in GP (approx.)**	**Practices adopted (feed change, nutritional supplements, open grazing etc.)**	**Average income generated per unit animal**
	Cows (indigenous)			
	Cows (hybrid)			
	Buffalo(indigenous)			
	Buffalo (hybrid)			
	Goats			
	Sheep			
	Pigs			
	Poultry			
	Fisheries			
	Others			

VI. Sanitation & Health

47		Water Quality (of drinking water or water supplied to households)						
	a	How is the quality of water supplied?	Suitable	Unsuitable				
			☐	☐				
	b	How does the water taste like?	Bitter	Salty	Normal			
			☐	☐	☐			
	c	What are the common contaminants in water supplied?	Salts	Turbidity	Discoloration	Mud/Sand	Smell	
	d	What method do you use to purify water?	Boiling	Water Purifier	Iodine (Alum) Addition	Solar Purification	Clay vessel filtration	Other (please specify)
			☐	☐	☐	☐	☐	☐

48		Solid Waste Generation/Waste Management					
	a	Daily average waste generated from your household.					

	b	How is the waste collected in your GP?						
	c	How frequent is the waste collection?	☐Daily	☐Weekly	☐Alternate Days			
			Yes	No				
	d	Is there any common place in your area where the waste can be dumped? If yes, please mention the location or distance of the place from your GP.	☐	☐	Distance from GP/Location within GP_____			
	e	Are there any common dustbins placed in your GP area?	☐	☐				
	f	Do you segregate the waste into dry and wet waste category?	☐	☐				
	h	How do you treat the waste at household level?	Recycling	Composting	Vermicomposting	Waste	Burning	Others (Specify)
			☐	☐	☐		☐	

49	**ODF Status**			
a	Is your village ODF/ODF+ declared?	☐ Yes	☐ No	
b	No. of households having their own toilet	☐	☐	
c	No. of community toilets/ izzatghars	☐	☐	key locations _____
d	Are the toilets being used? (Yes/No)			
e	If the toilets are not being used, why? (Lack of cleanliness, lack of maintenance, too far etc.)			

50	**Wastewater**	Domestic	Commercial	Industrial	Agricultural Practices	Sewage
a	What are the sources of wastewater?	☐	☐	☐	☐	☐
b	Amount of wastewater generated (estimate in liters per day)					
c	Wastewater treatment undertaken in village, if any					
d	Wastewater recycling or re-use practices, if any					

51		Healthcare facilities			
		Availability of healthcare centers	**Yes**	**No**	**Available rooftop area (m^2)**
	a	PHCs	☐	☐	
	b	Community Health Centre	☐	☐	
	c	Health Sub-Centers	☐	☐	
	d	Anganwadi	☐	☐	
	e	ASHA	☐	☐	
	f	Health Camps/Mela	☐	☐	
	g	Digital Health Care	☐	☐	

52		Diseases								
		In the past 1 year, how many people were affected by the following diseases?	Total no. of persons affected	Age group affected			Common Treatment Opted			
				Number of children affected	Number of adults affected	Number of senior citizens affected	Local Health Care facilities (specify)	Home Care	Door to door	Others (Specify)
	a	Vector-borne diseases (malaria, dengue, chikungunya etc.)						☐	☐	
	b	Water borne diseases (Cholera/Diarrhea/typhoid /hepatitis etc.)						☐	☐	
	c	Respiratory illnesses that can be attributed to air pollution (indoor and outdoor)						☐	☐	
	d	Malnutrition						☐	☐	

VII. Energy

53			
	a	**Total number of households in your gram panchayat electrified?**	
	b	**Approximate number of following appliances in the GP**	
		Air conditioners	
		Air coolers	
		Refrigerators	

54		**Frequency of Power Cuts**	
	a	Few times a day	☐
		Once a day	☐
		No power cut	☐
	b	How many hours of power outage per day?	
		If not every day, then how many hours power outrage per week?	

55	**What is the Frequency of Voltage Fluctuation?**	
	Few times a day	☐
	Once a day	☐
	No fluctuation	☐

56	**Power backup means used during power outage?**	**Numbers**
	Diesel generators	
	Solar	
	Emergency Lights	
	Inverters	
	Other means (Specify)	

57		Renewable Source of Energy		
	a	**Are there any installations of the following in the village?**	**Number of installations**	**Total Capacity installed (kW)**
		Solar rooftop installations in homes		
		Solar rooftop installations at schools		
		Solar rooftop installations at hospitals		
		Solar rooftop installations in gram panchayat buildings		
		Other solar rooftop installations		
		Solar street lights		
		Biogas		
		Decentralized renewable energy / Mini grid?		
	b	Are you aware of subsidies available for solar installations? (Prompt some schemes/ programmes)		

58	Fuel used for cooking	Number of households	Average amount used per household (kg/month)
	Traditional biomass (Cow dung/ fuelwood)		
	Biogas		
	LPG		
	Electricity		
	Solar		
	Others (coal, kerosene, charcoal etc.)		

59		Vehicle numbers			
		Type Of Vehicle	**Number of vehicles in GP (approx.)**	**Type of fuel used**	**Average distance travelled (km/day)**
	a	Jeeps			
	b	Cars			
	c	Two wheelers			

	d	EVs			
	e	Autos			
	f	e-rickshaws			
	g	Others			

60		**Farm machinery**	**Number of Machines in GP**	**Type of fuel used**	**Average distance travelled (km/day)**
	a	Tractor			
	b	Harvester			
	c	Others (please specify)			

61		**Petrol pumps located within the GP (if any)**										
		Type of Fuel	**Sales per day**	**Number of villages these pumps cater to**	**How many vehicles of various kinds take fuel from the pump in a day or month (specify time period)?**							
					Tractors	**Farm machinery**	**Jeeps**	**Cars**	**Two wheelers**	**Autos**	**e-rickshaws**	**Others**
	a	Petrol										
	b	Diesel										

62		**Industries**			
		Type of Industry	**Number**	**Source Of Energy Grid Electricity (1) Diesel Generator (2) Renewable Energy (3)**	**Energy consumption Electricity used per month (kWh) fuel used (liter/day)**

Annexure III: District Vulnerability Mapping from UP SAPCC 2.0

S. No.	Name of the District	Agriculture Vulnerability Index (AVI)	Water Vulnerability Index (WVI)	Forest Vulnerability Index (FVI)	Energy Vulnerability Index (EVI)	Rural Vulnerability Index (RDVI)	Urban Vulnerability Index (UDVI)	Health Vulnerability Index (HVI)	Disaster Management Vulnerability Index (DMVI)	Composite Vulnerability Index
1	AGRA	Low	Very High	High	Very Low	Low	Moderate	Low	Low	Very High
2	ALIGARH	Low	Very High	High	Moderate	Low	Very High	Moderate	High	High
3	AMETHI[37]	Moderate	High	Moderate	High	High		Moderate	Moderate	Moderate
4	AURAIYA	Low	Low	High	High	Moderate		Low	Moderate	Moderate
5	BADAUN	Moderate	Very High	Very High	Very High	Very High		Very High	Very High	Very High
6	BAHRAICH	High	Moderate		Very High	Very High		Very High	Very High	Low
7	BALRAMPUR	Very High	Low	Low	Very High	Very High		Very High	Very High	Moderate
8	BANDA	Very High		Very High	High	Moderate		Moderate	High	Moderate
9	CHANDAULI	Very Low	Low	Very Low	High	Moderate		Low	Moderate	Low
10	CHITRAKOOT	Very High	Moderate	Moderate	High	Moderate		Moderate	High	Moderate
11	ETAH	Very Low	High	Very High	High	Moderate		Moderate	Moderate	Very High
12	FARRUKHABAD	Low	Moderate	Moderate	High	High		High	High	High
13	GONDA	High	High	High	Very High	High		Moderate	High	Low
14	HAMIRPUR	High	Very Low	Low	High	Low		Low	Moderate	Low
15	HARDOI	High	Very High	Very High	High	Very High		High	High	High
16	JAUNPUR	Moderate	Moderate	High	High	Moderate		Moderate	Moderate	Moderate
17	JHANSI	Moderate	Low	Low	Moderate	Very Low		Very Low	Very Low	High
18	KANNAUJ	Low		Very High	High	High		Moderate	Moderate	Very High
19	KANPUR DEHAT	High	Moderate	High	Very High	Moderate		Low	Low	High
20	KANPUR NAGAR	Moderate	Moderate	Moderate	Low	Low	Very Low	Very Low	Very Low	Very High

37. Based on assumptions as U.P. SAPCC 2.0 does not provide sectoral vulnerability class for Amethi

S. No.	Name of the District	Agriculture Vulnerability Index (AVI)	Water Vulnerability Index (WVI)	Forest Vulnerability Index (FVI)	Energy Vulnerability Index (EVI)	Rural Vulnerability Index (RDVI)	Urban Vulnerability Index (UDVI)	Health Vulnerability Index (HVI)	Disaster Management Vulnerability Index (DMVI)	Composite Vulnerability Index
21	KASGANJ	Low	Very High	Very High	High	High		High	Very High	High
22	KAUSHAMBI	Moderate	High		High	High		Moderate	High	Low
23	LALITPUR	Moderate	Very Low	High	High	Moderate		Moderate	Moderate	Very High
24	MAHOBA	High	Low	Moderate	High	Moderate		Low	Moderate	High
25	MAINPURI	Low	Moderate	Very High	High	Moderate		Low	Moderate	Very High
26	MATHURA	Low	High	Very High	Moderate	Low		Low	Low	Very High
27	MIRZAPUR	Moderate	Moderate	Low	High	Moderate		Moderate	Moderate	High
28	MORADABAD	Low	Very High	High	Moderate	High	Moderate	High	High	High
29	PRATAPGARH	Moderate	High	Moderate	High	Moderate		Moderate	Low	Low
30	RAE BARELI	Low	High		High	High		Low	Moderate	Moderate
31	RAMPUR	Very Low	Low	High	High	High		Moderate	High	High
32	SANT KABEER NAGAR		Moderate		Very High	High		Low	Moderate	Moderate
33	SANT RAVIDAS NAGAR	Moderate	Very High	Low	High	High		Moderate	High	Moderate
34	SHAHJAHANPUR	Low	High		High	Very High		Very High	Very High	High
35	SHRAVASTI		High	Moderate	Very High	Very High		Very High	Very High	Moderate
36	SIDDHARTH NAGAR	Moderate	Very Low	High	Very High	Very High		Very High	Very High	Moderate
37	SONBHADRA	Moderate	Low	Low	High	Moderate		Moderate	Moderate	Very High
38	SULTANPUR	Moderate		Moderate	High	High		Moderate	Low	High
39	UNNAO	Moderate	Moderate	Moderate	Very High	High		Low	Moderate	Moderate

Annexure IV: GP Profile Template

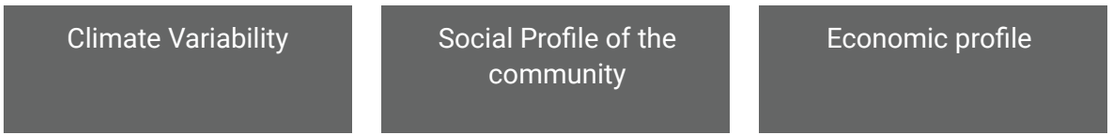
Gram Panchayat (GP) Profile incorporates the following important heads:

i. **Gram Panchayat at a glance**
   Location, Area, Administrative composition, Demographic profile, Land use distribution, Agro-climatic zone (climate, max. and min. temperature, annual rainfall, soil type and crops)

ii. **Climate Variability & Vulnerability Profile**

   a. **Climate Variability:** Trend in temperature & rainfall preferably over last 3 decades and community climate perception/experience
   (For climate variability analysis for the GP, data points from the nearest IMD station are to be used as no GP specific data is available. Also, the gridded weather data available through satellites is of much larger spatial scale (e.g., 25km*25km grid), thus nearest IMD station data will be more reliable and accurate)

   b. **Climate Vulnerability:** Vulnerability of the GP is determined using vulnerability assessment of the respective district[38]. Vulnerability of a region broadly depends on the following:



iii. **Key Economic Activities**
Sources of income for households in GP, Primary income source, Income-wise categorization of households and ration card beneficiaries

iv. **Women's Economic Engagement**
Women-headed households, Involvement of women in economic activities and SHGs in GP and type of their work

v. **Agriculture**

vi. **Natural resources**

   a. **Agriculture:** Net sown area, Gross cropped area, Crop wise yield and Land area profile and Irrigation type

   b. **Livestock:** Households engaged in animal husbandry and Livestock type-wise population profile

   Type and details of natural resources like forest land, water bodies, forestry activities and any other

vii. **Amenities of Gram Panchayat**

   a. Electricity & LPG: Accessibility and coverage in households

   b. Water supply: Primary source and coverage of households with piped water supply

   c. Waste: Open Defecation Free (ODF) status and household toilet coverage

   d. Mobility and market access: Connectivity to nearest Highway, distance from nearest Railway station, Bus station, Agriculture market, Ration shop, Post office, Bank, etc.

   e. Education: Details of primary, secondary, high schools, colleges/institutes and anganwadis

   f. Health: Details of primary health facilities, ASHA center, etc.

38. For climate vulnerability of the GP, district vulnerability from U.P. SAPCC 2.0 is used for basic reference and understanding

Annexure V: National Vision and Climate Goals

a) National Solar Mission to be read with UP State Solar Policy 2023
b) E-mobility target -30% by 2030
c) India's Nationally Determined Contributions (NDCs) targets:
    - Reduce Emissions Intensity of its GDP by 45 percent by 2030, from 2005 level
    - Creation of additional carbon sink of 2.5 to 3 billion tonnes of CO2 equivalent through additional forest and tree cover.
    - 50 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.
d) Atma Nirbhar Bharat
e) Mission Lifestyle for Environment (LiFE)

Annexure VI: Schemes and Departments that can help to implement the CSGPAP

S. No.	LSDG Theme	Name of the Scheme	Implementing Department	Human Resources who can support at GP level
1-	**Poverty Free and Enhanced Livelihoods village**	Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)	Rural Development	• ASHAs • Health workers • Doctors • Anganwadi workers • Agriculture-related functionaries • Literacy workers and Teachers • National Rural Livelihood Mission (NRLM) CRP • Bankers • Departments and agencies • Rozgar sevaks • Social activists • PTA/ school management committee (SMC) • Self-Help Groups (SHGs) • Private sector • Non-governmental organizations and CBOs • Local experts
		Deen Dayal Antyodaya Yojana (DAY) -National Rural Livelihood Mission (NRLM)	Rural Development	
		Pradhan Mantri Awaas Yojana–Gramin	Rural Development	
		National Social Assistance Programme (NSAP)	Rural Development	
		Market Intervention Scheme and Price Support Scheme (MIS-PSS)	Agriculture	
		Development of Skills (Umbrella Scheme)	Skill Development	
		Prime Minister Employment Generation Programme (PMEGP)	MSME	
		Pradhan Mantri Rojgar Protsahan Yojana	Labour Department	
		Employment Promotion Scheme	Labour Department	
		Pradhan Mantri Mudra Yojana	Labour Department	
		Pradhan Mantri Jan Dhan Yojana	Department of Financial Services	
		Umbrella Programme for Development of Scheduled Castes and Other Vulnerable Groups	Social Welfare	
		Special Central Assistance to Tribal Sub-Scheme (SCA to TSS)	Tribal Affairs (TRIFED)	

		Assistance to Disabled Persons for purchase of Fitting Devices (ADIP)	Empowerment of Persons with Disabilities (Divyangjan)	
		Umbrella Programme for Development of Minorities	Minority welfare and Waqf Dept.	
		Umbrella Programme for Development of Scheduled Tribes	Tribal Affairs (TRIFED)	
		Formation and Promotion of 10,000 new Farmer Producer Organizations (FPOs)	Agriculture	
		Income Generating schemes under Dept. of Agriculture, Horticulture, Fisheries, Animal Husbandry and Food Processing		
		E-Shram	Labour	
		Pradhan Mantri Krishi Sampada Yojana	Agriculture	
2-	**Healthy Village**	National Health Mission	Health Department	• Auxiliary Nurse Midwives (ANMs) • Doctors • ASHAs • Anganwadi workers • Teachers, government officials of various connected Departments • SHGs • VHSNC • Anganwadi Monitoring Committee • NRLM Community Resource Persons (CRPs)
		Intensified Mission Indradhanush	Health department	
		National AYUSH Mission	AYUSH	
		Umbrella ICDS	Women and Child Development	
		Pradhan Mantri Matru Vandana Yojana (PMMVY)	Health	
		Poshan Abhiyan	Health	
		National AIDS Control Programme	Health	
		Swachh Bharat Mission (SBM) – Rural	Panchayati Raj	
		National Health Protection Scheme (Ayushman Bharat)	Health	
		National Tuberculosis Elimination Program	Health	

		National Vector Borne Disease Control Program	Health	• Rogi Kalyan Samiti • Youth • NGOs/CBOs
		National Mental Health Program	Health	
		National Programme for prevention of Non-Communicable Diseases	Health	
		National Tobacco Control Program	Health	
		National Nutritional Anaemia Control Program	Health	
		Rashtriya Bal Swasthya Karyakram	Health	
		Janani Shishu Suraksha Karyakram	Health	
3-	**Child Friendly Village**	National Health Mission	Health	• ICDS supervisors • ASHAs, doctors • Anganwadi workers • literacy workers, teachers • health workers • Police • Child Protection officials • and other agencies, other department officials, Sports officials and Associations • Self-Help Groups (SHGs) and their federations • NRLM CRPs • Rozgarsevaks • PTA/ school management committee (SMC) • VLCPC • VHSNC
		Poshan Abhiyan	Women and Child Development	
		Beti Bachao Beti Padhao	Women and Child Development	
		Samagra Shiksha	Education	
		1098 Child Helpline	Women and Child Development	
		Mid-day-Meal Scheme	Education	
		Ayushman Bharat (National Health Protection Mission)	Health	
		Umbrella Integrated Child Development Services (ICDS) Scheme	Women and Child Development	
		Integrated Child Protection Scheme	Women and Child Development	
		Khelo India	Sports	
		Fit India Movement	Sports	
		15th Finance Commission Grants	Panchayati Raj	
		State Finance Commission Grants	Panchayati Raj	
		MGNREGS	Rural Development	

		School Health Program	Health	• local experts • social activists • NGOs/CBOs
		Scheme for Adolescent Girls (SAG)	Women and Child Development	
		Mission Vatsalaya	Women and Child Development	
		Sukanya Samriddhi Scheme (Mukhyamantri Kanya Sumangala Yojana)	Women and Child Development	
4-	**Water Sufficient Village**	Jal Jeevan Mission	Rural Development	• Water supply scheme operators • Masons • Registrants of MGNREGS • Health workers • Teachers • Officials and Functionaries from Drinking Water & Sanitation and other line departments • SHGs • Swachhta doots • VWSC or Paani Samitis • VHSNC • Health workers • Youth • NGOs/CBOs
		National Rural Drinking Water Programme (NRDWP)	Rural Development	
		Swachh Bharat Mission (Rural)	Panchayati Raj	
		Mission for Protection and Empowerment of Women	Women and Child Development	
		National River Conservation Programme (NRCP)	Environment, Forest and Climate Change	
		River Basin Management	Irrigation and Water Resources	
		National Ganga Plan and Ghat Works	Irrigation and Water Resources	
		National Water Mission	Irrigation and Water Resources	
		Interlinking of Rivers	Irrigation and Water Resources	
		Flood Management & Border Areas Programme	Irrigation and Water Resources	
		MGNREGA	Rural Development	
		Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)	Agriculture and Farmers Welfare	
		Development of Water Resources Information System	Irrigation (Jal Kal) and Remote Sensing	
		Ground Water Management and Regulation	Irrigation (Jal Kal) and Remote Sensing	

		Conservation of Natural Resources and Ecosystems	DoEFCC	
		Rurban	Rural Development	
5-	**Clean and Green Village**	National River Conservation Programme (NRCP)	Environment, Forest and Climate Change	• Department of Agriculture • Krishi Vigyan Kendra • Department of Revenue • Government department officials (departments like electricity, renewable energy, rural development, Civil supplies) • Tourism department • Educational institutions • technical and academic institutions like ITI, polytechnics and research institutions • Pollution Control Board • SHGs • Health and sanitation workers • Water supply scheme operators • Swachhta dhoots, Environmentalists • Registrants of MGNREGS • Masons, Traditional farmers and labourers • NGOs
		Pradhan Mantri Krishi Sinchayee Yojana(PMKSY)	Irrigation (Jal Kal)	
		National Water Mission	Irrigation	
		Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	Rural Development	
		Deen Dayal Upadhayaya Gram Jyoti Yojana (DDUGJY)	Power	
		Swachch Bharat Mission	Panchayati Raj	
		GOBARdhan scheme	Environment, Forest and Climate Change	
		National Afforestation Programme	Rural Development	
		Integrated Watershed Management Programme (IWMP)	Rural Development	
		National Rural Drinking Water Program	UPNEDA	
		Grid Connected Solar Rooftop Program	UPNEDA	
		Development of Solar Parks	UPNEDA	
		PM-KUSUM	UPNEDA	
		National Biogas and Manure Management Programme (NBMMP)	Environment, Forest and Climate Change	
		Green India Mission	Environment, Forest and Climate Change	
		15th Finance Commission Grants	Panchayati Raj	
		State Finance Commission Grants	Panchayati Raj	

6-	**Self-Sufficient infrastructure in Village**	MGNREGS	Rural Development	• ASHAs • health workers • Anganwadi workers • Agriculture-related village-level functionaries • OHT Operator • literacy workers and Teachers • National Rural Livelihood Mission (NRLM) CRP • Bankers • departments and agencies • Rozgar sevaks • social activists • PTA/ school management committee (SMC) • Self-Help Groups (SHGs) • Private sector • non-governmental organizations and CBOs • Local experts
		Pradhan Mantri Gram Sadak Yojana (PMGSY)	Rural Development	
		PMAY (Gramin)	Rural Development	
		Jal-Jeevan Mission	Rural Development	
		Swachh Bharat Mission (Gramin)	Panchayati Raj	
		Shyama Prasad Mukherjee Rurban Mission	Rural Development	
		National Handloom Development Programme	Handloom and Textile	
		Sansad Adarsh Gram Yojana	Rural Development	
		National Rural Livelihood Mission	UPNEDA	
		Grid Connected Solar Rooftop Program	UPNEDA	
		Development of Solar Parks	UPNEDA	
		Samagra Shiksha	Education	
		15th Finance Commission Grants	Panchayati Raj	
		State Finance Commission Grants	Panchayati Raj	
		PM-KUSUM	UPNEDA	
		Dairy Entrepreneurship Development Scheme (DEDS)	NABARD	
7-	**Socially Secured Village**	Pradhan Mantri Shram Yogi Maan-Dhan (PM-SYM)	Labour	• Literacy workers • ASHAs • health workers • Doctors • Teachers • Anganwadi workers • National Rural Livelihood Mission (NRLM) Community
		National Social Assistance Program (NSAP)	Rural Development	
		Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)	Rural Development	
		Deendayal Antyodaya Yojana National Rural Livelihood Mission (DAY-NRLM)	Rural Development	

		Pradhan Mantri Rojgar Protsahan Yojana	Labour	Resource Persons (CRPs) • Social Justice Dept • Police/ Home dept • VHSNC • SHG • Rozgar sevaks • Social activists, • PTA/ school management committee (SMC) • local experts & youth
		Prime Minister's Employment Generation Programme (PMEGP) and other Credit Support Schemes	MSME	
		Pradhan Mantri Mudra Yojana (PMMY)	Labour	
		Women's Helpline	Women and Child Development	
		Childline 1098	Women and Child Development	
		Integrated Child Development Scheme	Women and Child Development	
		Samagra Shiksha Abhiyan	Education	
		One-Stop Center	Women and Child Development	
		Integrated Child Protection Scheme	Women and Child Development	
		Poshan Abhiyan	Women and Child Development	
		Beti Bachao – Beti Padhao	Women and Child Development	
		Coaching, Guidance and Scholarships for SC and Other Backward Classes	Social Welfare	
8-	**Village with Good Governance**	Rashtriya Gram Swaraj Abhiyan	Panchayati Raj	• Anganwadi workers • Gram Rozgar Sevaks • literacy workers and teachers • ASHAs • village level Social Auditor • National Rural Livelihood Mission (NRLM) Community
		15th Finance Commission Grants	Panchayati Raj	
		State Finance Commission Grants	Panchayati Raj	
		Deen Dayal Antyodaya Yojana (DAY-NRLM)	Rural Development	
		Mahatma Gandhi National Rural Employment Guarantee Scheme(MGNREGS)	Rural Development	

		Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)	Rural Development	Resource Persons (CRPs) • Panchayat Executive Officer • Livestock workers etc • Officials of different departments • Self-Help Groups (SHGs) • Gram Panchayat Level Federations • Village Water, Sanitation & Nutrition Committee • Panchayat Standing Committee
		National Social Assistance Programme (NSAP)	Rural Development	
		Pradhan Mantri Awas Yojana (PMAY)	Rural Development	
		Public Distribution System (PDS)	Health	
		Rashtriya Swasthya Bima Yojana (RSBY)	Panchayati Raj	
		Swachh Bharat Mission (SBM)	Rural Development	
		Jal Jeevan Mission	Rural Development	
		Deen Dayal Upadhyaya Gram Jyoti Yojana		
		State sponsored schemes and programmes on Health, Nutrition, Agriculture, Animal husbandry, Horticulture and Livelihoods		
9-	**Women Friendly Village**	MGNREGS	Rural Development	• Anganwadi workers • ANMs • ASHAs • NRLM-CRPs • literacy workers • Other department officials- agriculture, MSME, ICDS supervisors, WCD department officials • Police and Legal Aid • NGOs and other Institutions • Self Help Groups • Village level Organisations like Panchayat level
		Mission Vatsalya	Women and Child Development	
		Mission Shakti	Women and Child Development	
		Kishori Shakti Yojana	Women and Child Development	
		Mission Poshan 2.0	Women and Child Development	
		National Rural Livelihood Mission	Rural Development	
		National Health Mission	Health	
		Beti Bachao Beti Padhao	Women and Child Development	
		Samagra Shiksha	Education	
		Pradhan Mantri Mahila Shakti Kendra (PMMSK)	Women and Child Development	

		Ujjawala, One Stop Centre	Women and Child Development	and cluster federations • Village Education committee • Teachers • School Management Committees • VHSNC
		Nirbhaya	Women and Child Development	
		1098, Women Helpline, SWADHAR Greh	Women and Child Development	
		Pradhan Mantri Matru Vandana Yojana (PMMVY)	Health	
		Umbrella ICDS	Women and Child Development	
		Support to Training and Employment Programme (STEP)	Women and Child Development & Social Welfare	
		National Scheme for Incentive to Girl Child for Secondary Education (NSIGSE)	Education	
		PRAGATI (Providing Assistance for Girls' Advancement in Technical Education Initiative)	Education	
		Integrated Child Protection Scheme	Women and Child Development	

Annexure VII: Proposed Indicators for Monitoring & Evaluation

S.No.	Relevant Sectors	Proposed Interventions	Proposed monitoring Indicator
1.	**Forest, Green Cover & Biodiversity Interventions (FGB)**	**Improving green cover across GP:** 1. Community-based plantation activities through: Green Stewardship Programme for students Creation of Food ForestCreation of Bal Van 2. Development of Arogya Van	Proportion of tree cover to total geographical area
			Area under Food Forest
			Area under Bal Van
			Area under Arogya Van
			Number of trees planted under social forestry program in the village
			Proportion of area of barren lands and other common lens covered by trees
			Percentage survival of trees planted under social forestry program in the village
		People's Biodiversity Register: 1. Updating People's Biodiversity Register 2. Build awareness	Is the people biodiversity register is updated
			No. of Awareness campaigns organized in GP
2.	**Water Interventions (W)**	**Rainwater Harvesting (RwH) Practices:** 1. RwH structures installation in government/PRI building, Schools and institutes, Community Halls, etc. 2. Recharge pits for recharging ground water 3. Incorporating RwH system in all new buildings	Percentage of public building having functional rainwater harvest mechanism which are maintained well
			Percentage of houses are having functional rainwater harvesting mechanism which are maintained well
			No. of Recharge pits for recharging ground water is created
			No. of new building with RwH structure
		Maintenance of water bodies: 1. Cleaning, desilting & fencing of water bodies 2. Tree plantation with tree guards 3. Cleaning and restoration of wells/tube wells 4. Capacity building of the Village Water and Sanitation Committee (VWSC), community & other stakeholders	No. of water bodies where cleaning, desilting & fencing is done.
			Percentage of village water bodies tanks de-slagged/ depend or special repair carried out
			Weather the VWSC is functional in the GP
			Agriculture holdings covered in WUA to the total agriculture holdings

S.No.	Relevant Sectors	Proposed Interventions	Proposed monitoring Indicator
		Enhancing drainage & sewerage infrastructure: 1. Cleaning and desilting of existing drains 2. Installing siphons for out flow of water 3. Expanding coverage of stormwater and wastewater infrastructure	Frequency of cleaning of existing drains
			No. of Siphons for out flow of water
			Expanding coverage of stormwater and wastewater infrastructure
3.	**Agriculture Interventions (A)**	**Drought Management for Agriculture:** 1. Promotion and adoption of micro irrigation practices 2. Bunds with trees around agricultural fields 3. Construction of farm ponds 4. Adoption of drought tolerant variety of crops	Proportion of farmers practicing integrated farm management practices
			No. of Bunds with trees around agricultural fields
			No. of farm ponds constructed
			Area under drought tolerant variety of crops
		Natural farming: 1. Natural farming through use of organic fertilizers, bio-pesticides and bio-weedicides a. Training & demonstrations b. Natural farming certification process c. Market linkages 2. Promotion and adoption of practices such as mixed cropping, crop rotation, mulching, zero tillage	Percentage of net area under organic farming
			Percentage use of nitrogen fertilizer to total fertilizers (N.P.K.)
			No. of farmers/FPOs obtained natural farming certification
			No. of farmers/FPOs linked with brands
			No. of Meeting/capacity building Programme for promoting appropriate practices
			No. of farmers, who adopted mixed cropping, crop rotation, mulching, zero tillage
		Sustainable livestock management: 1. Awareness on sustainable animal husbandry and training for community as animal health workers 2. Feed supplements to reduce methane emissions in cattle	No. of household outreach as part of awareness sessions
			No. of para-vets trained
			No. of cattle farmers using Feed supplements to reduce methane emissions in cattle

S.No.	Relevant Sectors	Proposed Interventions	Proposed monitoring Indicator
4.	**Solid Waste Management Interventions (SWM)**	**Establishing a waste management system:** 1. Setting up GP-level collection & segregation system 2. Electric vehicle for transportation of waste 3. Installation of waste collection bins at strategic locations 4. Setting up partnerships between Panchayat, SHGs, informal rag-pickers, local scrap dealers, local businesses, and MSMEs	No. of waste collection bins installed at strategic locations in GP
			Percentage of households segregating the dry and wet waste
			Percentage of institutions and businesses segregating the dry and wet garbage
			Whether the scientific disposal recovery of non-biodegradable waste
			Whether the scientific treatment of biodegradable waste
			No. of Electric vehicle for transportation of waste
		Management of organic waste: 1. Setting up vermicomposting and compost pits through community involvement 2. Promoting community initiative by providing incentives	No. of cattle farmers using Feed supplements to reduce methane emissions in cattle
		Ban on single-use-plastics: 1. Enforcement of the existing ban on the use of Single Use Plastics (SUPs) 2. Awareness, training, and capacity-building programs for: a. Village Water and Sanitation Committee (VWSC) b. Students & youth groups c. Community members 3. Orientation sessions for commercial establishments on plastic waste management and promote the use of alternatives 4. Leveraging RACE Campaign and LiFE Mission	No. of Training/Capacity building/ Orientation Programme organized in GP
			No. of Committee meetings organized

S.No.	Relevant Sectors	Proposed Interventions	Proposed monitoring Indicator
5.	**Energy Interventions (E)**	**Solar Rooftop installations:** Solar rooftop on all government buildings and pucca houses in the GP	No. of Solar rooftop power plants installed on government buildings and pucca houses in the GP
		Agro-photovoltaic: Agro-photovoltaic installations on area under horticulture and legume crops	Percentage of area under Agro-photovoltaic installations out of area under horticulture and legume crops
		Solar Pumps: Replacing existing diesel pump sets with solar pumps or energy efficient pumps	Percentage of renewable energy used for pump sets
		Clean Cooking: Promoting and achieving clean cooking methods through combinations of options like: a. Biogas b. Solar powered induction cook-stoves c. Improved Chulhas d. LPG	No. of Biogas plants installed in the village
			No. of Solar powered induction cookstoves installed in the village
			No. of Improved Chulhas distributed in the village
			No. of LPG Connections in the village
		Energy Efficiency: All light fixtures and fans to be replaced with energy efficient fixtures in all government buildings and residential buildings	No. of Govt. building, where is all light fixtures and fans to be replaced with energy efficient fixtures. No. of Residential building, where is all light fixtures and fans to be replaced with energy efficient fixtures.
		Solar street lights: Installation of LED streetlights along roads, public spaces and other key locations	No. of LED streetlights installed along roads, public spaces and other key locations.
		Cool roofs: Implementing a Cool Roof Programme for government, community and residential buildings	No. of government, community and residential buildings where Cool Roof Programme id implemented.

S.No.	Relevant Sectors	Proposed Interventions	Proposed monitoring Indicator
6.	**Mobility Interventions (M)**	**Enhancing last-mile connectivity through electric mobility:** 1. Expanding coverage of Intermediate Public Transport (IPT) like autorickshaws 2. Commercial hiring (rental basis) of autorickshaws	No. of e-autorickshaws in the village
		Electric goods transport vehicle and e-tractors: 1. Promoting electric alternatives for tractors and goods transport vehicles through incentives 2. Sensitizing user groups (farmers/logistic owners) towards use of e-tractors	No. of e-tractors and e-goods carriers in the village
		Enhancing existing road infrastructure to reduce waterlogging: 1. Road elevation works 2. Road RCC/ Interlocking works	Percentage (length) of roads with proper drain coverage
			Percentage (length) of good quality roads without potholes/ damages

Annexure VIII: Agro Climatic Zones, Uttar Pradesh*

S.No.	Agro Climatic Zone	Temperature (degree Celsius) Min & Max		Average Annual Rain Fall (mm)	Irrigated Area (%)	Soil Type	Total Cultivated area (Lac hectare)	Districts
1	Bhawar and plain, tarai plain	5.5	38.4	1400	73.29	Minimum to medium in Alluvial phosphorous Medium to high in potassium and organic matter in high quantity.		Farrukhabad, Kannauj, Etawah, KanpurNagar, KanpurDehat, Unnao, Hardoi, Khiri, Sitapur, Lucknow, Raebareilly, Fatehpur, Pratapgarh and Allahabad (14 districts)
2	Western Plain Zone	1.5	43.3	795	89.23	Alluvial, pH- normal to alkaline and organic matter minimum to medium quantity	19.36	Shaharanpur Muzzaffar nagar, Baghpat,
3	Mid western plain zone	4.5	45.4	1032	83.21	Mostly alluvial, PH Normal to slightly alkaline and organic matter in medium quantity.	30.36	Bijnore, Moradabad, Rampur, Bareilly, Badaun, Pilibhit and Shahjahanpur (7 district)
4	Western sub tropical zone	4	47	662	75.52	Alluvial	22.3	Aligarh, Mathura, Agra, Firozabad, Etah, Mainpuri (6 districts)
5	Central Plains/ Mid plain zone	5.5	45	863	66.41	Alluvial, PH Normal to slightly alkaline and organic matter in medium quantity.	61.22	Farrukhabad, Kannauj, Etawah, KanpurNagar, KanpurDehat, Unnao, Hardoi, Khiri, Sitapur, Lucknow, Raebareilly, Fatehpur, Pratapgarh and Allahabad (14 districts)
6	Bundelkhand Zone	3	47.8	867	38.65	Rakar, Parwa, Kabar and Mar	29.61	Lalitpur, Jhansi, Jalaun, Hamirpur, Banda and Chitrakott (7 districts)
7	North Eastern Plain Zone	4.9	44.2	1240	48.24	Alluvial and calcarious soil	33.8	Behraich, Balrampur, Gonda, Siddharthnagar, Basti, Maharajganj, Kushinagar and Deoria (9 districts)
8	Eastern Plain Zone	5.7	41.4	803	69.43	Alluvial , sodic and diara soil	32.05	Barabanki, Faziabad, Sultanpur, Jaunpur, Azamgarh, Mau, Ballia, Ghazipur, Varanasi and Sant Ravidasnagar (10 districts)
9	Bindhya Zone	5	45.2	1134	52.85	Black heavy, Red granular and Alluvial soil in plains	11.34	Mirzapur and Sonbhadra (2 Districts)

*Agriculture Department, UP (https://upagripardarshi.gov.in/StaticPages/jayadagroclaimetikzone.aspx)

Notes

VASUDHA FOUNDATION
Green ways for a good earth!

upenv.upsdc.gov.in
vasudha-foundation.org