iCARE Innovation Fund

Hyper-local medium-range weather forecasts to improve the climate resilience of smallholder coffee farmers in India

Monthly Progress Report

Reporting period: April 01, 2024, to April 30, 2024

Prepared by Precision Development (PxD)

1. Project Information

Project Title:	Hyper-local medium-range weather forecasts to improve the climate resilience of smallholder coffee farmers in India
Project Code:	WBCAR
Partner Organisation:	Precision Development (PxD), Coffee Board of India, and Climate Forecast Applications Network (CFAN)
Reporting Period:	April 01, 2024 to April 30, 2024
Date of Submission:	May 05, 2024
Contact Name:	Sannihit
Contact Position:	Program Associate
Contact Email Address:	sannihit@precisiondev.org
Contact Telephone Number:	+91 8190875722
Status of project progress in this reporting period	☐ Significant delay ☒ **Delay** ☐ On Track
Report sign Off	I have reviewed all the information provided for each section including the number of beneficiaries. The information provided for each section of the report is complete. Name: Sannihit Designation: Program Associate

2. Key Achievements

1. PxD has launched the weather forecast service with a sample of **1212** farmers. While the pickup rate has been 61.43%, among those farmers who answered the calls the listening rate has been impressive at 78.20%.

2. PxD has also initiated efforts to enhance the audio-stitching service, including automation of the entire process of sourcing the forecasts, converting them to audio files and broadcasting them to achieve

3. Implementation Progress (Revised Work Plan)

	Activity Title	Last month progress (March, 2024)	Current month progress (April, 2024)	Activities planned for subsequent months
1.1.1,	Analysis of current seasonal cycle **(Dec,2023)**	**Completed**	**Completed**	**NA**
1.1.2	Incorporating findings from the lab-in-the-field (conducted prior to and outside of the scope of this project) to generate advisory calendar **Deliverable: Finalized Coffee Crop Calendar** (Dec,2023)	**Completed**	**Completed**	**NA**
2.1.1	Commencing receipt of forecasts from CFAN. **Sample of the CFAN data** (Dec,2023)	**Completed**	**Completed**	**NA**
2.1.2	Finalize set of probability triggers and alert frequencies for non-monsoon and monsoon periods (Dec,2023)	**Completed**	**Completed**	**NA**
2.1.3	In-depth analysis of skill for each alert template to arrive at accuracy scores (Dec,2023)	**Completed**	**Completed**	**NA**
3.1.1	Translation of forecast templates to Kannada (Jan,2024)	**Completed**	**Completed**	**NA**
3.1.2,	Recording of audio snippets for testing (Jan,2024)	**Completed**	**Completed**	**NA**
3.1.3	Final recording of voice snippets & quality checks **Deliverable: Link to the library of audio files** (Jan-Feb,2024)	**Completed**	**Completed**	**NA**
3.2.1	Audio stitching technology is developed, configured, and integrated with PxD's in-house IVR system (Jan,2024)	**Completed**	**Completed**	**NA**

3.2.2	Audio stitching of recorded voice snippets is conducted for sample participants for a 5-day forecast period (Feb,2024)	**Completed**	**Completed**	**NA**
3.3.3	Audio-stitched recordings are tested in-house, refined, and adapted (March,2024)	**Completed**	**Completed**	**NA**
4.1.1	Finalize a set of KPIs and metrics critical for monitoring needs. (Dec,2023)	**Completed**	**Completed**	**NA**
4.1.2	Raw forecast data integrated into a data warehouse that the dashboard can access. (Dec,2023)	**Completed**	**Completed**	**NA**
4.1.3	Collected data cleaned, transformed, and processed into a format suitable for visualization. (Jan,2024)	**Completed**	**Completed**	**NA**
4.2.1	Finalise UI and UX that is user-friendly, efficient and intuitive (Jan,2024)	**In progress** Initial version of the dashboard with provisions to track forecast data and rainfall realization data launched in March, 2024	**In progress** Research team has finalized inclusion of metrics related to forecast skill, such as Hit, Miss, Correct Negative, and False alarms	PxD will include skill related metrics and continue to add newer components such as IMD ground station and realization data.
4.2.2	Finalise front-end and back-end components that include creating interactive elements, integrating data sources, and implementing user authentication and authorization (Jan,2024)	**In progress**	**In progress**	
4.2.3	Implement mechanisms for forecast real-time updates (Jan,2024)	**Completed**	**Completed**	

4.2.4	Thorough testing of the dashboard to ensure accurate data representation, responsive design, and functionality. Address any bugs, inconsistencies, or performance issues. (Feb,2024)	**In progress** Testing of the initial version has been completed and successfully deployed in March, 2024	**In progress**	In the coming months, PxD will expand the dashboard's functionality to include features that will provide even deeper insights for users
4.2.5,	Conduct user testing to gather feedback on the dashboard's usability and functionality and make necessary adjustments (Mar-April,2024)	**In progress** We've implemented feedback on how to organize forecast data, realization data, and create graphs to monitor data trends. This feedback has been provided by our internal research, program and technology team.	**In progress**	Second round of feedback collection with the aim to further enhance the user experience to be conducted in May, 2024
4.2.6	Deploy the dashboard on a suitable hosting environment ensuring it is accessible and secure (April,2024)	**Completed**	**Completed**	
5.1.1,	Prepare sample for pilot based on stratification parameters (Feb,2024)	**Completed**	**Completed**	
5.1.2	Agronomists and agro-met design advisory based on upcoming forecasts (Feb,2024)	**Completed**	**Completed**	

5.2.1	Relevant advisories are audio recorded (Feb,2024)	**Completed**	**Completed**	
5.2.2	Tech team audio stitches advisory snippets (March,2024)	**Completed**	**Completed**	
5.3.1	Disseminate forecast + advisory with 1000 sample farmers (March,2024)	**In progress** Delays experienced due to unforeseen technical errors when developing the audio-stitching functionality.	**Completed.** Forecast service launched in April, 2024. Errors in the system fixed.	Engineering team to start working on broadcasting Forecast and advisory in the same call
6.1.1	Identify parameters for data collection (March,2024)	**Completed**	**Completed**	
6.1.2	Prepare questionnaire (March,2024)	**In progress** Delayed by a month	**In progress**. Delays experienced due to additional time taken for finalising the template selection logic and also testing and investigation of errors in audio-stitching system. However, a draft version of the questionnaire has been prepared. Activity will be completed by Mid May	Finalization of the questionnaire, translations, coding, surveyor training in May, 2024

6.1.3	Survey translation to local language, coding on SurveyJS and surveyor training (March,2024)	In progress Delayed as questionnaire yet to be finalized	**In progress** Delayed as questionnaire is yet to be finalised	To be completed by end of May
6.2.1	Phone based survey data collection (April,2024)	NA	**In progress** Delayed by a month and half as questionnaire is yet to be finalised	Phone based data collection to being in May, and Testimonial collection in June
6.2.2	Testimonial collection on the field (April,2024)	NA	**In progress** Delayed by a month and half	
6.3.1	Clean and analyze collected data (April,2024)	NA	**In progress** Delayed by a month and half	Data cleaning and analysis to begin in June
6.3.2	Summarize findings in a report (May,2024)		**In progress** Delayed by a month and falf	Report to be ready by mid June

4. Results Framework Indicators Progress

PDO Indicator Description: Government agencies and Citizens who have access to climate-resilient solutions tested under the project (Number)				
	Baseline	**Actual (Previous)**	**Actual (Current)**	**End Target**
Value	NA	0	1212	50,000
Date	NA	March 31, 2024	April 30, 2024	January, 2025
Comments	The service was launched on April 21, 2024			
Output Indicator Description: Number of people trained (in person) (by sex, country, topic, year, participant category)				
Value	NA	NA	NA	NA
Date	NA	NA	NA	NA
Comments	PxD is arranging only online training			
Output Indicator Description: Number of people trained (online) (by sex, country, topic, year, participant category)				
Value	NA	0	1212	1500
Date	NA	March 31, 2024	April 30, 2024	January, 2025
Comments	A total of 1,212 **farmers** underwent online **training to interpret probabilistic forecasts**. Among them, **309 were women**, and **903 were men**. The training was conducted in **August 2023, in Karnataka, India**.			
Output Indicator Description: Number of knowledge products provided (by type of product, theme, country)				
Value	NA	1	1	3
Date	NA	March 31, 2024	April 30, 2024	January, 2025
Comments	Audio-visual material developed to train farmers on interpreting probabilistic forecasts			

Output Indicator Description: Number of people / organizations provided with knowledge products (by recipient category, type of knowledge product, country, theme)				
Value	NA	1212	1212	1500
Date	December, 2023	March 31, 2024	April 30, 2024	January, 2025
Comments	The audio-visual material was used for training the farmers.			
Output Indicator Description: Number of events supported (by type, year, theme, country)				
Value	NA	0	0	3
Date	NA	March 31, 2024	April 30, 2024	January, 2025
Comments				
Output Indicator Description: Number of people participating in supported events (by participant category, sex, year, theme, country)				
Value	NA	0	0	150
Date	NA	March 31, 2024	April 30, 2024	January, 2025
Comments				
Output indicator: Pickup rate (percentage of the scheduled calls answered by farmers)				
Value	NA	NA	61.43%	55%
Date	NA	March 31, 2024	April 30, 2024	January, 2025
Comments	Calls were scheduled on April 21, 22, 29, and May 03. Going forward, calls will be scheduled once in every 5 days			
Output indicator: Listening rate (percentage of the average length of the forecast listened to)				
Value	NA	NA	78.20%	60%
Date	NA	March 31, 2024	April 30, 2024	January, 2025
Comments	The impressive listening rate suggests that most farmers find the information valuable. The high listening rate may also be due to the short message length, typically 27-28 seconds.			

5. Challenges, Lessons Learned and Way Forward

Challenge	Lessons Learned	Way Forward
Finalising the dashboard for tracking weather-related metrics within 2-3 months is challenging because PxD sees the need to include more parameters as the project progresses.	Products such as the dashboard are best developed iteratively throughout the project. Therefore, it's beneficial to allow longer timelines for creating several versions with incremental improvements.	Adjust the timelines so that each version of the dashboard is deployed in shorter intervals, while still aiming for the final product to be ready by the end of the year..

Glossary

Project Title	Exact and full name of the project as defined in the Sub Grant Agreement
Project Code	A five-digit code assigned by ADPC
Partner Organization	The lead agency(ies) responsible for the implementation of the project
Key Achievements	The actual outcome or impact of your work, such as reaching a PDO, or outcome or output defined in the final and agreed Results Framework.
Implementation Progress	Implementation progress means the steps or actions taken to achieve the PDO or outcomes or outputs. In this case it would be the list of activities defined in the final and approved work plan
Challenges	The most significant and persistent areas of risk that affect the project's ability to achieve its objectives. Challenges could be related to managing the Sub Grant, sustaining development gains, coordinating with stakeholders, and implementing core management functions. Please also discuss the solutions to mitigate these risks.
Lessons Learned	Lessons learned are contextual or operational information that may affect planning and future performance. They highlight the insights gained from the activity's implementation practices and progress, such as staff feedback, stakeholder interviews, data analysis, and success stories. They also include any changes required by or support requested from ADPC or partners.

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