

## 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: March 01, 2024, to March 31, 2024

Prepared by Precision Development (PxD)

# 1. Project Information

<b>Project Title:</b>	Hyper-local medium-range weather forecasts to improve the climate resilience of smallholder coffee farmers in India
<b>Project Code:</b>	WBCAR
<b>Partner Organisation:</b>	Precision Development (PxD), Coffee Board of India, and Climate Forecast Applications Network (CFAN)
<b>Reporting Period:</b>	March 01, 2024 to March 31, 2024
<b>Date of Submission:</b>	April 05, 2024
<b>Contact Name:</b>	Sannihit
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<b>Contact Email Address:</b>	sannihit@precisiondev.org
<b>Contact Telephone Number:</b>	+91 8190875722
<b>Status of project progress in this reporting period</b>	<input type="checkbox"/> Significant delay <input checked="" type="checkbox"/> <b>Delay</b> <input type="checkbox"/> On Track
<b>Report sign Off</b>	<p>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.</p> <p>Name: Sannihit                      Designation: Program Associate</p>

## 2. Key Achievements

1. Following user testing feedback, PxD has made significant progress in refining the forecast templates to improve comprehension. Furthermore, adjustments have been made to the template selection logic while prioritizing forecast relevance based on current agricultural practices. This involved analyzing historical rainfall data. As a result of these enhancements, more comprehensible forecast templates and a robust template selection process has been developed. Although these revisions have led to minor delays, PxD remains optimistic about piloting the weather service with a sample of 1000 farmers within the next two weeks
2. PxD has launched an initial version of the dashboard to track forecast data. This dashboard enables users to monitor both forecasted and actual data

### 3. Implementation Progress (Revised Work Plan)

	Activity Title	Last month progress (February, 2024)	Current month progress (March, 2024)	Activities planned for subsequent months
1.1.1, 1.1.2, 2.1.1	<p>Analysis of current seasonal cycle</p> <p>Incorporating findings from the lab-in-the-field (conducted prior to and outside of the scope of this project) to generate advisory calendar</p> <p><b><u><a href="#">Deliverable: Finalized Coffee Crop Calendar</a></u></b></p> <p>Commencing receipt of forecasts from CFAN. <b><u><a href="#">Sample of the CFAN data</a></u></b></p>	Completed in January, 2024	NA	
2.1.2, 2.1.3	<p>Finalize set of probability triggers and alert frequencies for non-monsoon and monsoon periods</p> <p>In-depth analysis of skill for each alert template to arrive at accuracy scores</p>	Completed in February, 2024	NA	
3.1.1, 3.1.2, 3.1.3	<p>Translation of forecast templates to Kannada</p> <p>Recording of audio snippets for testing</p> <p>Final recording of voice snippets &amp; quality checks</p> <p><b><u><a href="#">Deliverable: Link to the library of audio files</a></u></b></p>	Completed in January, 2024	NA	
3.2.1, 3.2.2	<p>Audio stitching technology is developed, configured, and integrated with PxD's in-house IVR system</p>	Completed in February, 2024	NA.	

	<b>Activity Title</b>	<b>Last month progress (February, 2024)</b>	<b>Current month progress (March, 2024)</b>	<b>Activities planned for subsequent months</b>
	Audio stitching of recorded voice snippets is conducted for sample participants for a 5-day forecast period			
3.3.3	Audio-stitched recordings are tested in-house, refined, and adapted	NA	Completed  PxD has further revised the probability triggers and automated the forecast template selection logic. Following this exercise, PxD also revised the templates and recorded new audio where necessary.	
4.1.1, 4.1.2	Finalize a set of KPIs and metrics critical for monitoring needs.  Raw forecast data integrated into a data warehouse that the dashboard can access.	Completed in January, 2024	NA	
4.1.3	Collected data cleaned, transformed, and processed into a format suitable for visualization.	Completed in February, 2024	NA	
4.2.1, 4.2.2	Finalise UI and UX that is user-friendly, efficient and intuitive  Finalise front-end and back-end components that include creating interactive elements, integrating data sources, and implementing user authentication and authorization	Delayed by a month	In progress  Initial version of the dashboard with provisions to track forecast data and rainfall realization data	PxD will continue to add newer components to the dashboard, such as IMD ground station realization data, and forecast skill.

	<b>Activity Title</b>	<b>Last month progress (February, 2024)</b>	<b>Current month progress (March, 2024)</b>	<b>Activities planned for subsequent months</b>
4.2.3	Implement mechanisms for forecast real-time updates	Delayed by a month	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.	Delayed by a month	In progress  Testing of the initial version has been completed and successfully deployed	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, 4.2.6	Conduct user testing to gather feedback on the dashboard's usability and functionality and make necessary adjustments  Deploy the dashboard on a suitable hosting environment ensuring it is accessible and secure	In progress	In progress  We've implemented feedback on how to organize forecast data, realization data, and create graphs to monitor data trends. This feedback, provided by our internal research team, program team and tech team has significantly enhanced the user experience.	Moving forward, we're committed to ongoing input and iteration for creating effective data visualization tools
5.1.1, 5.1.2, 5.2.1, 5.2.2	Prepare sample for pilot based on stratification parameters  Agronomists and agro-met designs advisory based on upcoming forecasts  Relevant advisories are audio recorded  Tech team audio stitches advisory snippets	Completed in February, 2024  Pilot sample created.  Advisory content has been finalized.	Completed.	

	Activity Title	Last month progress (February, 2024)	Current month progress (March, 2024)	Activities planned for subsequent months
		The capacity for recording and stitching of advisory snippets is ready. The stitched files will be generated as per forecasts		
5.3.1	Disseminate forecast + advisory with 1000 sample farmers	NA	To be launched by mid-April  To ensure the most relevant information reaches users, we've made refinements to the template selection logic. While there has been a slight delay, this will enhance the overall user experience.	
6.1.1	Identify parameters for data collection	NA	Completed.	
6.1.2, 6.1.3	Prepare questionnaire  Survey translation to local language, coding on SurveyJS and surveyor training	NA	To be deployed by mid-April	

## 4. Results Framework Indicators Progress

As PxD is scheduled to launch the service by mid-April, data on other indicators such as farmer engagement rates is not currently available. However, PxD will be able to provide progress updates on these indicators in the next monthly report.

Output indicator: Number of users trained on interpreting probabilistic forecasts				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	NA	1212	1212	2060
Date	NA	February 29, 2024	March 31, 2024	
Comments	A total of 1,212 <b>farmers</b> underwent online <b>training to interpret probabilistic forecasts</b> . Among them, <b>309 were women</b> , and <b>903 were men</b> . The training was conducted in <b>August 2023, in Karnataka, India</b> .			The end target will cover 2000 farmers and 60 extension workers from Coffee Board



## 5. Challenges, Lessons Learned and Way Forward

Challenge	Lessons Learned	Way Forward
<p>Further delays in technology development: PxD continues to experience delays due to unforeseen technical complexities highlighting the need to account for buffer time in future project timelines</p>	<p>Building buffer time into technical task timelines can accommodate unforeseen complexities and ensure timely project delivery. Further it will also help in building robust testing to identify potential bugs before deployment.</p>	<p>PxD has already reallocated resources internally to prioritise project launch. Additionally PxD is proceeding with implementation of other future tasks such as automating generation of engagement statistics, so as to make up for the ongoing delays.</p>

## 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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