

iCARE Innovation Fund

Upscaling customized irrigation and climate advisory services through citizen science Monthly Progress Report

Reporting Period 1-30th June, 2024)

Prepared by: Bareerah Fatima, Director,
PCRWR

1. Project Information

Project Title:	Upscaling irrigation and climate advisory services through citizen science
Project Code:	WBCAR
Partner Organisation:	Inara Technologies (Pvt) Ltd and Pakistan Council of Research in Water Resources (PCRWR)
Reporting Period:	1 st June to 30 th June, 2024
Date of Submission:	9 th July 2024
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Status of project progress in this reporting period	<input type="checkbox"/> Significant delay <input type="checkbox"/> Delay <input checked="" type="checkbox"/> On Track
Report sign Off	<input checked="" type="checkbox"/> I have reviewed all the information provided for each section including number of beneficiaries. The information provided for each section of the report is complete. Name: Faisal Waheed Designation: Director, Inara Technologies (Pvt) Ltd

2. Key Achievements

- Completed post-training feedback survey with 32 farmers (16 male, 16 female) in Bahawalpur.
- Conducted second stakeholder consultation workshop on June 12, 2024, in Islamabad (in-person) with the following key suggestions;
 - Improvement in the crop calendar of the various crops in the project areas
 - Providing an interacting platform for farmers/users so that they can see each other's data.
- The crop calendar of crops in Punjab is being improved.
- Developed and finalized a prototype for web platform.

3. Implementation Progress

Activity Title	Last Month Progress	Current Month Progress	Activities, and Events, planned for the subsequent month
<p>Activity 1.1.1: On the basis of citizen science data, refining the advisory services on the basis of target users (through advertisement, in field sessions and farmer days)</p> <p>(Dec 2023 – Jun 2024)</p>	<p>Completed</p> <ul style="list-style-type: none"> Post training feedback survey is conducted for 6 sites, i.e., Peshawar, Tandojam, Mirpurkhas, Sanghar, Sargodha and Sheikhpura districts. In-App advisory service is provided and daily feedback from the farmers is being received and reviewed. <p>In-progress</p> <ul style="list-style-type: none"> Post training and intervention feedback survey in remaining 3 sites i.e. Bahawalpur, Sahiwal and Toba Tek Singh will be conducted during June 2024. <p>Delay</p> <p>The popularization of advisory service through field days is being kept pending and planned during Augus-September.</p>	<p>Completed</p> <ul style="list-style-type: none"> Post training feedback survey in Bahawalpur was conducted on 8th June 2024. <p>In-Progress</p> <ul style="list-style-type: none"> Post training feedback survey for the Sahiwal and Toba Tek Singh districts are being planned. <p>Delay</p> <p>Delay in the completion of post-training feedback survey has occurred due to Eid festival holidays and heat waves.</p>	<ul style="list-style-type: none"> Post training and intervention feedback survey in remaining 2 sites i.e. Sahiwal and Toba Tek Singh will be conducted during July 2024.

<p>Activity 1.1.2: Enlisting all the interested users included the citizen scientist in the advisory services</p> <p>(Dec 2023 – Jun 2024)</p>	<p>Completed</p> <ul style="list-style-type: none"> First stakeholder consultation is undertaken on May 17, 2024. Details are added at Annexure – A. <p>In-progress</p> <p>Second in person stakeholder consultation meeting is planned on 12th June 2024.</p>	<p>Completed</p> <p>Second in person stakeholder consultation meeting was conducted on 12th June 2024.</p>	<p>Activity completed.</p>
<p>Activity 1.1.3: Identifying cost effective mean for disseminating the messages</p> <p>(Dec 2023 – Jul 2024)</p>	<p>Completed</p> <ul style="list-style-type: none"> In-app interactive climate and irrigation advisory service is provided in ICAS Data App. The feature is checked and verified by the participating citizen scientists. The ICAS Data App has provided two interfaces. One is for citizen scientists and other is for non-citizen scientists who plan to avail the advisory services. <p>In-progress</p> <p>Participating citizen scientists and the stakeholders are now using this app. The citizen scientists are now promoting this App into their ecosystems to other farmers.</p>	<p>Completed</p> <p>The activity is completed. However, regular follow up is being taken from participating farmers/citizen scientists regarding the use of IAS.</p> <p>In Progress</p> <p>In post consultative meetings scenario, the crop calendar is being updated as per suggestions from the stakeholders, for making Irrigation Advisory more effective.</p>	<p>Follow up with provincial extension department regarding the upgradation of crop advisory.</p>
<p>Activity 1.2.1: Through feedback, determining how effectively farmers are using ICAS (through regular visits and communication with farmers)</p>	<p>Completed</p> <ul style="list-style-type: none"> Post training and preliminary governance surveys are concluded in 6 out of 9 districts. <p>In-progress</p>	<p>In progress</p> <p>Post training feedback from the farmers in Bahawalpur has been completed.</p>	<p>Post training feedback from the farmers in Toba Tek Singh and Sahiwal districts will be conducted.</p>

(Dec 2023 – Oct 2024)	Initial report on post training feedback is being compiled.		
Activity 1.2.2: Determining the level of monetization to sustain the advisory services (Dec 2023 – Nov 2024)	Completed <ul style="list-style-type: none"> Performed discussions with farmers in six project districts and with stakeholders on 17th May 2024 Progress Planned the consultations in remaining three districts and with stakeholders	Completed Collected feedback on governance plan questionnaire from the farmers in Bahawalpur and stakeholders of Second stakeholder consultation workshop. Data analysis is under progress.	Data analysis will be completed and an initial draft of the governance plan will be drafted on the basis of feedback collected from citizen scientists and stakeholders.
Activity 1.2.3: Collecting “pitching impacts” from the users to scale out the advisory services (Dec 2023 – Dec 2024)	Completed <ul style="list-style-type: none"> Held meetings with farmers in six districts and identified proactive farmers to contribute into “pitching impacts”. Progress Compiling and analysing the feedback to highlight the “pitching impact” stories to develop further.	Invited three pro-active farmers from “Peshawar District” to reflect on their experience of working as citizen scientists at the stakeholder engagement forum on 12 th June 2024. Report of the stakeholder consultation is finalized.	Field visit to collect “pitching stories” from the participating citizen scientists are planned to be collected during August 2024.
Activity 1.3.1: Draft a governance plan for scaling up the citizen science concept and share its key elements with beneficiary farmers. After their feedback finalize the plan. (Dec 2023 – Feb 2024)	Completed <ul style="list-style-type: none"> Discussed governance plan questionnaire during first stakeholder meeting on May 17th, 2024. Completed governance plan survey in 6 districts. Progress Compiling the data on initial governance plan survey.	Collected feedback on governance plan questionnaire from the farmers in Bahawalpur and stakeholders of Second stakeholder consultation workshop . Data analysis is under progress.	Data analysis will be completed and an initial draft of the governance plan will be drafted on the basis of feedback collected from citizen scientists and stakeholders.

Activity 2.1.1: Upgradation of citizen science App and its availability for general public (Dec 2023 – Apr 2024)	Reports on data submission by the farmers is being shared with them on regular basis. The activity is completed in all aspects. The future activities under this activity are those which are actually part of other deliverables but also relates to this deliverable	. Activity is completed.	
Activity 2.1.2: Upgradation of citizen science database and development of a web dashboard allowing the interaction of citizens with data. (Dec 2023 – Mar 2024)	Completed Activity is completed	Completed	
Activity 2.2.1: Development of training models for the citizen scientist (Dec 2024)	Completed Activity is completed	Completed Activity is completed	
Activity 2.2.2: Shortlisting the districts facilitators for guiding the citizens (Dec 2023 – Feb 2024)	Completed	Completed	
Activity 2.2.3: Training and gadget distribution to the citizens (Dec 2023 – Mar 2024)	Completed	Completed	

<p>Activity 2.3.1: Consultative workshops involving provincial government organizations and explaining them the project concept (Apr – Jun 2024)</p>	<p>Completed First stakeholder engagement consultation was undertaken virtually on May 17th, 2024.</p> <p>In Progress Second stakeholder consultation (in person) is planned to be organized on 12th June 2024.</p>	<p>Completed Consultative meetings completed; stakeholder consultation report finalized.</p>	
<p>Activity 2.3.2: Developing collaborations with provincial government organizations as one of the beneficiaries (Dec 2023 – Dec 2024)</p>	<p>Completed</p> <ul style="list-style-type: none"> Initial feedback on the governance plan completed 	<p>Activity completed Second feedback collected on 12th June 2024 and a report was compiled.</p>	

4. Results Framework Indicators Progress

PDO Indicator Description: Government agencies and Citizens who have access to climate-resilient solutions tested under the project.				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Govt agencies (02) : 2 Citizen Scientists (45) : 45	Government Agency (01) : 2 Private entity: 1	Govt. Agency: 5 Universities (02)-: 1 Private Entity (01)-:1	Govt. Agencies (05): 5 Citizen scientists 150 and private entities (02) : 2
Date	August 2022	May 30 2024	June 30 2024	October 2024
Comments	<p>Currently, 45 farmers in the pilot districts are benefiting from the impact of ICAS since the pilot phase. Work is going on to bring all the 150 participating citizens in the data assess umbrella.</p> <p>Methodology for PDO The solution will be tested using the following stepwise-approach</p> <ol style="list-style-type: none"> 1. Development of Citizen Science data app supported by the backend to visualise and analyse the citizen's data. 2. Train and evaluate the citizen's data according to the districts. 			

	<ol style="list-style-type: none"> 3. Run computations on the data submitted by citizens to calculate reference evapotranspiration values. 4. Once these values are generated, it will help in eliminate satellite data error to disseminate better Irrigation and Climate Advisory Services to Farmers. 5. This is how the data will be disseminated to the farmers and other stakeholders. 6. Until May 31, 2024; representatives from 5 government agencies, two academic institutions and 1 private sector organizations are provided access to the solution to the point of going through the Application. An overview of the data generated through this system is also provided. 			
Outcome 1 Indicator Description: Dissemination of Irrigation and climate advisory service to more crop zones (districts)				
Value	3	3	11	11
Date	August 2022	April 2024	31 st May 2024	October 2024
Comments	Farmers from the pilot phase are the existing beneficiaries of the ICAS. In the upscaling phase, initial climate advisory is embedded in the ICAS Data App. Therefore, farmers who joined as citizen scientists in 11 districts are likely to receive the improved irrigation and climate advisory services soon.			
Output 1.1 Indicator Description: Number of platforms where promotion material is developed and disseminated.				
Value	2	2	2	5
Date	August 2022	31 st May 2024	30 th June 2024	December 2024
Comments	At the pilot phase, the project concept was promoted only two major forums, i.e. Agricultural Departments of Khyber Pakhtunkhwa and Punjab. This number is like to rise to 5 by December 2024 once the concept is finalized on ground.			
OUTPUT 1.2 Impact assessment of upgraded ICAS use by the farmers in the target districts.				
Value	45	90	122	150
Date	August 2022	31 st May 2024	30 th June, 2024	October 2024
Comments	In the pilot phase, the ICAS was improved on the basis of feedback from the 45 farmers in the pilot phase. So far only half of the ICAS service has been launched, i.e. data submission through ICAS data app and weather data information on the same app. For this half, about 131 more farmers are added into ICAS service.			
Output 1.3 Number of people participating in supported events (by participant category, sex, year, theme, country)				
Value	50	90	140	200

Date	August 2022	31 st May 2024	30 th June, 2024	December 2024
Comments	Development of upscaling governance plan is a new activity added in this phase of the project, however, efforts were started just at the conclusion of pilot phase in August 2022. The first consultative workshop was held inviting 50 participants from public and private sector organizations to plan upscaling on the concept. The second effort was made in May 2023 by inviting 18 different participants for a consultative meeting to discuss on the upscaling of ICAS as a concept. In this context, first virtual meeting of the stakeholder organizations was organized on May 17 which was participated by participants from Provincial government organizations, ie., KP Agriculture Extension, On Farm Water Management Punjab, Agriculture Extension department Punjab and Agricultural Research, Tandojam Sindh and one representative from academia. In total this meeting was attended by 9 professionals (7 males and 2 females). Additionally, the initial governance survey and post training feedback survey was undertaken with farmers in Peshawar, Sargodha, Sheikhpura, Tandojam, Mirpur Khas, and Sanghar Districts. In these consultations and meetings all the participating citizen scientists joined (approx. 80).			
OUTCOME 2 Popularizing the concept of “citizen science” for climate change adaptation				
Indicator description: Number of events supported by type, year, theme and country.				
Value	4	12	13	18
Date	August 2022	31 st May 2024	30 th June, 2024	December 2024
Comments	In the pilot phase of the project, 3 training workshops for citizen scientists and 1 national workshop was conducted. In this phase, 11 training sessions have been conducted and remaining will be completed by the close of year 2024. So far all of these events are planned for Pakistan only. The types of these events include, citizens training and consultative meetings with the stakeholder organizations.			
Output 2.1: Number of citizens using citizen science data collection app				
Value	45	218	200 (+)	200
Date	August 2022	31 st May 2024	30 th June, 2024	December 2024
Comments	In the pilot phase ICAS data app was initiated with 45 citizen scientists. After the improvement in the App and its availability at App store the number is like to rise by in post popularization scenario. So far 144 new app users are added into the list of frequent users of ICAS data app. So far, there are 218 downloads of the ICAS Data app from both iOS and OS app stores.			
Output 2.2: Number of people trained (in person) (by sex, country, topic, year, participant category)				

Value	45 (01 female, 44 males)	144 (34 females, 110 males)	144 (34 females, 110 males)	150 (130 male and 20 females)
Date	August 2022	31st May 2024	30th June 2024	July 2024
Comment	In the pilot phase of this project 45 citizen scientists were trained (01 female and 44 males). In this phase so far 145 citizen scientists have been trained including 110 male member and 34 females.			
Output 2.3: Number of (in-person) and virtual meetings held with the representatives of government agencies.				
Value	2	1	2	6
Date	August 2022	31st May 2024	30th June 2024	December 2024
Comment	In the pilot phase two consultative meetings were held, one among the participating farmers/citizens from all sites and second one was organized among the key stakeholders. In this connection, 1st meeting (virtual) meeting was organized in May 2023 to discuss opportunities to upscale this innovation further.			
Output 2.4a: Number of knowledge products developed				
Value	2	1	2	5
Date	August 2022	31st May 2024	30th June 2024	December 2024
Comments	In the pilot phase two types of knowledge products were developed; a short documentary on the findings of project and training materials for the citizen scientists. So far training material for the citizen scientists is completed whereas 4 additional knowledge products will be developed. one report on the compilation of farmer's feedback, one report on the governance plan to be developed after a thorough consultation process, one shot documentary and 1 document containing the compilation of case studies.			
Output 2.4b: Number of people/organizations provided with knowledge products (by recipient category, type of knowledge product, country, theme)				
Value	60	144	144	200
Date	August 2022	31st May 2024	30th June 2024	December 2024
Comments	So far only training material is distributed to 144 farmers who are trained for becoming the citizen scientists. Citizen will also become the users of short documentary developed on the project. Whereas the technical reports and case studies will be more useful for stakeholder organizations and academia.			

5. Challenges, Lessons Learned and Way Forward

Challenges	Lessons learned	Way forward
<p>Number of citizen scientists are 144, half of the project duration has passed. It will be less optimal to add new farmers in the project at this stage.</p>	<p>The project sites are thoroughly explored for the possibility of including new citizen scientists. So far, the participating citizen scientists and their commitment to project ensure the soundness of selection criteria.</p>	<p>Continuous efforts will be made to include volunteers who show interest in becoming citizen scientist.</p>
<p>One day consultative meeting is not sufficient to capture the feedback of all the stakeholders.</p>	<p>Some of the stakeholders have invited the project team for individual meeting for synergizing their activities with project activities.</p>	<p>Individual meetings with relevant stakeholders will be conducted.</p>

Annexures:

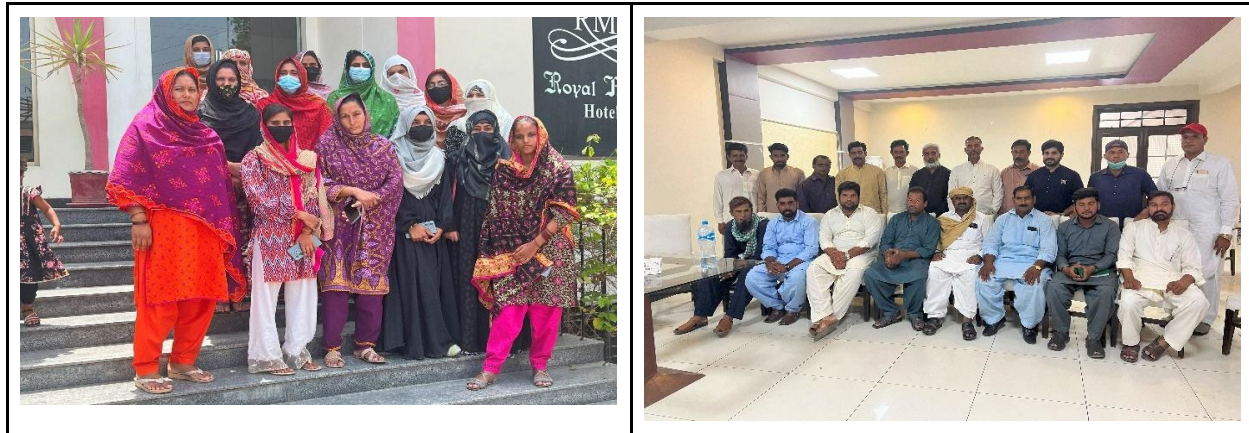


Figure 1. Post training survey meetings with citizen scientists in Bahawalpur, 8th June, 2024



Figure 2. Group photo of the participants of 2nd consultative meeting held on 12th June 2024 (Participants include; project team, On Farm Water Management Department, Government of Punjab, Bureau of Extension Khyber Pakhtunkhwa, Agricultural Extension Department, Government of Punjab, Pakistan Meteorological Department, Agricultural Research, Government of Sindh, Fauji Fertilizers Company Limited and farmer representatives from Peshawar)

Glossary

Monthly Progress Report June 2024

Project Title	means	Exact and full name of the project as defined in the Sub Grant Agreement
Project Code	means	A five-digit code assigned by ADPC
Partner Organization	means	The lead agency(ies) responsible for the implementation of the project
Key Achievements	means	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	means	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	means	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	means	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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