

iCARE Innovation Fund

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

Reporting Period 1-31st July, 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 31 st July, 2024
Date of Submission:	6 th August 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

- Facilitated field mission visit on 18th July 2024 and as per guidance of the ADPC team following activities are performed;
 - Improvement/suggestions for national workshop agenda
 - Interaction meeting with other innovators located in Pakistan
 - Made field plan for “collecting impact stories”
- Made ICAS webpage live for the users

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 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>Completed</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>Delay</p> <p>Delay in the completion of post-training feedback survey has occurred due to Eid festival holidays and heat waves.</p>	<p>As per suggestion by the field mission team of ADPC, “impact stories” will be collected during August-September.</p>
<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> <p>The activity is completed. However, regular follow up is being taken from participating farmers/citizen scientists regarding the use of IAS.</p>	<p>Completed</p> <p>As per suggestions and feedback from the farmers crop calendar is updated for those</p>	<p>Activity is completed</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>crops for whom the “crop coefficient” values are determined by PCRWR.</p>	
<p>Activity 1.2.1: Through feedback, determining how effectively farmers are using ICAS (through regular visits and communication with farmers)</p> <p>(Dec 2023 – Oct 2024)</p>	<p>In progress</p> <p>Post training feedback from the farmers in Bahawalpur has been completed.</p>	<p>Completed</p> <p>Post training feedback from the farmers in Toba Tek Singh and Sahiwal districts will be conducted. This feedback is made part of the 3rd deliverable report submitted to ADPC.</p>	<p>Activity is completed</p>
<p>Activity 1.2.2: Determining the level of monetization to sustain the advisory services</p> <p>(Dec 2023 – Nov 2024)</p>	<p>Completed</p> <p>Collected feedback on governance plan questionnaire from the farmers in Bahawalpur and stakeholders of Second stakeholder consultation workshop. Data analysis is under progress.</p>	<p>Data analysis was completed and an initial draft of the governance plan will be drafted on the basis of feedback collected from citizen scientists. Key features of this governance plan is included in the 3rd deliverable report submitted to ADCP.</p>	<p>Activity is completed</p> <p>Future plan</p> <p>However, as per the recommendations of field mission some additional working will be conducted to determine the value of irrigation advisory services in comparison to other on-going services. This will form one of the chapters of governance and upscaling plan.</p>

<p>Activity 1.2.3: Collecting “pitching impacts” from the users to scale out the advisory services</p> <p>(Dec 2023 – Dec 2024)</p>	<p>Invited three pro-active farmers from “Peshawar District” to reflect on their experience of working as citizen scientists at the stakeholder engagement forum on 12th June 2024.</p> <p>Report of the stakeholder consultation is finalized.</p>	<p>Report of the consultations as a part of collaborations output is submitted as 3rd deliverable report.</p>	<p>Field visit to collect “pitching stories” from the participating citizen scientists are planned to be collected during August 2024.</p>
<p>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.</p> <p>(Dec 2023 – Feb 2024)</p>	<p>Collected feedback on governance plan questionnaire from the farmers in Bahawalpur and stakeholders of Second stakeholder consultation workshop. Data analysis is under progress.</p>	<p>Data analysis is completed some key elements of the governance plan are shared.</p> <p>Further work is being done.</p>	<p>Consultation on some elements of innovation upscaling plan will be undertaken during the planned national workshop event.</p>
<p>Activity 2.1.1: Upgradation of citizen science App and its availability for general public</p> <p>(Dec 2023 – Apr 2024)</p>	<p>Activity is completed</p>	<p>Completed</p> <p>Previously, the App was enabled only to Pakistan whereas now it is enabled in 177 countries of the world both through Apple and Play store.</p>	
<p>Activity 2.1.2: Upgradation of citizen science database and development of a web dashboard allowing the interaction of citizens with data.</p>	<p>Completed</p> <p>Activity is completed</p>	<p>Completed</p>	

(Dec 2023 – Mar 2024)			
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	
Activity 2.3.1: Consultative workshops involving provincial government organizations and explaining them the project concept (Apr – Jun 2024)	Completed Consultative meetings completed; stakeholder consultation report finalized.		

<p>Activity 2.3.2: Developing collaborations with provincial government organizations as one of the beneficiaries</p> <p>(Dec 2023 – Dec 2024)</p>	<p>Activity completed</p> <p>Second feedback collected on 12th June 2024 and a report was compiled.</p>	<p>Activity is completed</p>	
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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 : 2 Citizen Scientists : 45	Govt. Agency: 5 Universities -: 1 Private Entity -:1 Citizen scientists: 144	Govt. Agency: 5 Universities -: 1 Private Entity -:1 Citizen scientist: 144	Govt. Agencies -: 5 Citizen scientists 150 and private entities : 2
Date	August 2022	June 30 2024	31 st July 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</p> <p>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. 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. 7. As per suggestions by the field mission, there is plan to request provincial agriculture department to recommend some citizen scientists to estimate the upscaling and sustainability potential of the solution. 			

Outcome 1 Indicator Description: Dissemination of Irrigation and climate advisory service to more crop zones (districts)				
Value	3	11	11	11
Date	August 2022	30 th June 2024	31 st July 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	30 th June 2024	31 st July 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. Promotional material will also be disseminated to the potential partners and wider audience during the National Workshop event.			
OUTPUT 1.2 Impact assessment of upgraded ICAS use by the farmers in the target districts.				
Value	45	122	144	150
Date	August 2022	30 th June, 2024	31 st July, 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. So far 144 farmers have been engaged as citizen scientists in the target districts.			
Output 1.3 Number of people participating in supported events (by participant category, sex, year, theme, country)				
Value	50	140	140	200
Date	August 2022	30 th June, 2024	31 st July 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			

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	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	13	13	18
Date	August 2022	30 th June, 2024	31 st July 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	200 (+)	200 (+)	200
Date	August 2022	30 th June, 2024	31 st July, 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 248 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 (33 females, 111 males)	144 (33 females, 111 males)	150 (130 male and 20 females)
Date	August 2022	31st May 2024	30 th 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 144 citizen scientists have been trained including 111 male member and 33 females. There are two strategies under consideration to increase the number of participating citizen scientists;			

	<ol style="list-style-type: none"> 1. Engage more citizen scientists on the recommendations of the provincial departments 2. Establish mirror sites by increasing the number of target districts to see the upscaling potential 			
Output 2.3: Number of (in-person) and virtual meetings held with the representatives of government agencies.				
Value	2	2	2	6
Date	August 2022	30 th June 2024	31 st July 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, 1 st 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	1	5
Date	August 2022	30 th June 2024	31 st July 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	30 th June 2024	31 st July 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.			

4. Challenges, Lessons Learned and Way Forward

Challenges	Lessons learned	Way forward
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.	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.	The provincial agricultural departments will be approached to provide suggestion for additional citizen scientists.

Annexures:



Field mission team visits Inara Technologies (Pvt) Ltd

Glossary

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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