Technical Report

Redeploy of Existing Mobile Climate Information App for District Technical Working Group (DTWG) Engagement in Community Fish Refuge (CFR) and Community Fisheries (CFi)

December 2025

Acknowledgments

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We extend our sincere appreciation to our partners, stakeholders, and collaborators whose expertise, insights, and commitment have contributed significantly to shaping this work. Their contributions have been instrumental in advancing CGIAR's ambition to scale proven innovations across food, land, and water systems, fostering impact that is inclusive, sustainable, and transformative.

We also recognize the continued support and collaboration of national and regional partners, whose engagement ensures that the solutions developed are responsive to local needs, strengthen innovation systems, and contribute to building more resilient agrifood systems.

To learn more about CGIAR Scaling for Impact (S4I) program, please contact:

scaling@cgiar.org

About CGIAR Scaling for Impact (S4I) program

Scaling for Impact (S4I) is a CGIAR program (2025–2030) that tests, refines, and scales innovations in food, land, and water systems. It works to align those innovations with stakeholder needs to achieve transformative impact.

Website: https://www.cgiar.org/cgiar-research-porfolio-2025-2030/scaling-for-impact/

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AUTHORS

Yin Yin Phyu – Greenovator
Sok Raksa – WorldFish

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PHOTOS

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DESIGNED BY

Phay Sokcheng, Research Fellow, WorldFish

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Executive Summary

- This report presents the outcomes of the DCAS+ innovation under Scaling for Impact program, implemented from June to December 2025 in Prey Veng and Kampong Thom provinces, Cambodia, in partnership with Greenovator. The project aimed to strengthen the resilience of Cambodia's freshwater fisheries against climate change by redeploying and enhancing the Mekong Farm Agri Mobile App to deliver localized climate advisories and decision-support tools for District Technical Working Groups (DTWGs) and Community Fish Refuge (CFR) members.
- The Mekong Farm App was upgraded to include real-time weather data, forecast alerts, and digitized mitigation plans (S4I), enabling communities to access localized climate risk information instantly. Six training sessions improved digital literacy and climate-informed decision-making among 69 participants (16% women), fostering inclusive engagement. The app recorded 2,300 downloads and 751 active weekly users, with strong engagement in weather alert features for farm and fisheries planning. Two digital groups were established, connecting 135 members for real-time discussion and reporting on climate impacts and fisheries activities.
- By generating verified historical climate data, the project laid the groundwork for parametric insurance products and green loan schemes, reducing investment risk for CFR communities. Daily support calls revealed a shift from reactive to proactive planning among farmers and fishers, leveraging weather alerts for timely decisions on crop drying and resource management.
- Challenges such as digital literacy gaps were addressed through visual aids and peer-to-peer learning during training. To sustain group engagement, assigning community moderators and automating weather summaries were recommended. Future scale-up should introduce two-way communication for crowd-sourced data and automated push notifications, formalize moderator roles, engage private sector for financial sustainability, and expand to provinces like Battambang through collaboration with ongoing development projects. Replicating success using DTWG action plans will accelerate adoption and resource efficiency.
- The project successfully met its objectives, creating a robust ecosystem of digital climate services and community engagement. With technical foundations and capacity established, the system is ready for continued use and scalable replication to strengthen climate resilience in Cambodia's fisheries sector.

1. Introduction

The Scaling for Impact program is a CGIAR initiative designed to accelerate the adoption of proven agrifood innovations at scale. It focuses on creating enabling environments, strengthening local capacity, and mobilizing finance to ensure that climate-smart and inclusive solutions reach millions of farmers and fishers. By working through partnerships with governments, private sectors, and communities, S4I moves beyond pilot to deliver sustainable impact, supporting national priorities and resilience in food systems.

Cambodia's freshwater fisheries are vital for food security but face growing threats from climate change. This intervention supports climate-smart fisheries and farming systems by embedding digital tools, inclusive training, and private-sector linkages into national strategies. By aligning with CGIAR's Scaling for Impact (S4I) pillars: Engage & Empower, Pathways to Scale, Enabling Environment, Finance & Partnerships, and Learning for Impact. This approach ensures sustainability and readiness for scale beyond pilot communities. Building on a successful 2024 pilot in Kampong Thom, the project expanded the Digital Climate Advisory System (DCAS) to include Community Fish Refuges (CFRs) and district-level stakeholders in Prey Veng and Kampong Thom.

The objectives of this innovation were:

1. **Integration:** To integrate mitigation plans (advisory) and real-time climate data (rainfall, temperature, weather alarms) into the Mekong Farm Agri Mobile App.
2. **Accessibility:** To ensure the app is user-friendly, multilingual (Khmer), and accessible to users with varying levels of digital literacy.
3. **Capacity Building:** To train DTWGs and community members on using digital tools for fisheries management and climate adaptation.

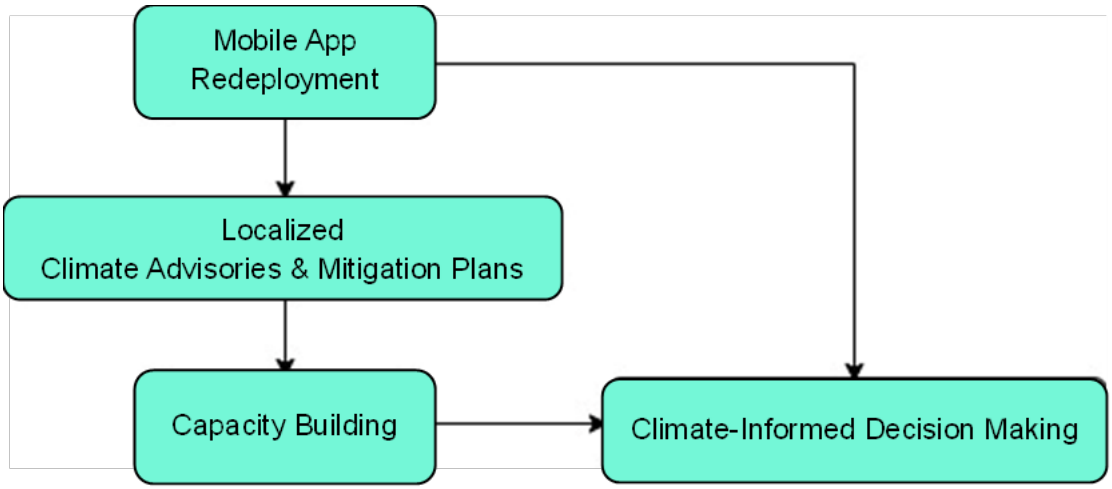

Figure 1. Conceptual Framework diagram of the intervention

The conceptual framework (Figure1) illustrates how the intervention drives climate-informed decision-making. It begins with Mobile App Redeployment, integrating localized climate advisories and mitigation plans. The project not only provided the Mekong Farm mobile app with climate information features but also supported its effective use through training and capacity-building activities. The project teams organized training sessions for District Technical Working Groups (DTWGs) to ensure they understood how to interpret climate data, use the app's dashboard, and guide community members. In short, the app provides the tool, and capacity building ensures DTWGs have the skills to apply it for decision-making and community support. The private sector plays a critical role by supporting app sustainability, offering business linkages, and enabling financial mechanisms. Together, these components create an ecosystem that empowers communities, strengthens institutional capacity, and ensures climate-smart practices are scaled effectively.

2. Results Framework & Logic Chain

Innovation links objectives to outputs, outcomes, and evidence of impact. The overall objective is to strengthen climate resilience in Cambodia's freshwater fisheries through digital innovation and inclusive capacity building. This is achieved by redeploying the Mekong Farm mobile app with integrated climate advisories and mitigation plans, complemented by training for District Technical Working Groups (DTWGs) and Community Fish Refuge (CFR) members.

Outputs include the technical integration of real-time weather features, creation of digital community groups, and delivery of six training sessions. These outputs lead to outcomes such as improved digital literacy, active use of climate information, and enhanced decision-making for fisheries and farming activities. Evidence of impact is demonstrated by 2,300 app downloads, 751 active weekly users, and qualitative feedback showing a shift from reactive to proactive planning among farmers. DTWGs play a key role in guiding communities, while the private sector supports sustainability through business linkages and potential climate finance mechanisms.

To move beyond a narrative summary, the table below links project objectives to verifiable evidence of impact.

Table 1. Log-frame diagram of innovation

Objective	Output	Outcome	Evidence of Impact
Integrate Climate Advisories	S4I mitigation plans and real-time weather data (rainfall, temp) integrated into Mekong Farm App.	DTWGs and CFRs have instant access to localized risk data.	• 751 active weekly users accessing weather features
Improve Digital Literacy	Conducted 2 training sessions for DTWGs and 4 for CFRs communities.	Increased confidence among women and fishers in using smartphones for resource management.	• Training attendance records showing [###%] female participation. • Post-training observation: Users navigating to the "Weather Alarm" tab without assistance.
Enhance Decision Making	Established 2 Digital Community Groups (Santuk & Boeng Sne).	Communities actively discuss weather impacts on fisheries during the training and use the group as reporting place.	• Number of posts sharing in the groups

This framework illustrates how technical innovation, institutional capacity, and private-sector engagement work together to deliver scalable and sustainable climate-smart practices. It shows the link between integrating climate advisories into digital tools and building the capacity of DTWGs and farmers, which together drives improved decision-making and resilience. Private-sector involvement further strengthens sustainability and enables long-term scalability.

3. Activities Implementation and Outputs

3.1 App Integration and Feature Development

Greenovator successfully reviewed and updated the existing Mekong Farm Agri Mobile App to support the project's specific needs.

- Climate Data Integration: The app now features real-time and forecasted climate data, including hourly and 5-day forecasts (precipitation, wind, UV index, etc.).
- Alert System: A weather alarm system was implemented to notify communities of critical climate risks
- Community Digital Groups: Two dedicated groups were created to facilitate discussion. Group 1 (Santuk District): 87 Members and Group 2 (Boeng Sne Area): 48 Members currently sharing the activities of DTWGs such as meetings, field visits, etc.

3.2 Capacity Building

Training Program Implementation and Outcomes

To ensure effective adoption of the Mekong Farm mobile application and climate advisory tools, the project team delivered a comprehensive training program targeting both institutional and community-level actors.

The training program was executed fully as follows:

- District Technical Working Group (DTWG): Conducted 2 sessions on interpreting climate information and using the digital dashboard. *Outcome:* DTWG members are equipped to monitor local climate conditions.
- Community Fish Refuge (CFR/CFi): Conducted 4 sessions focused on how to check climate information and alerts. *Outcome:* Improved confidence in using smartphones for resource management among women and local fishers.
- Total Participants Trained were 69 of whom male participants were 58 (84%) and female participants were 11 (16%)

Capacity Building and Its Strategic Linkages

The training program was designed not only to improve digital literacy but also to strengthen institutional and community capacity for climate-informed decision-making. Two sessions for DTWGs focused on interpreting climate data and using the digital dashboard, enabling them to act as technical facilitators and advisors. Four sessions for CFR/CFi members emphasized practical skills in checking weather alerts and applying mitigation plans, with special attention to inclusivity and gender responsiveness.

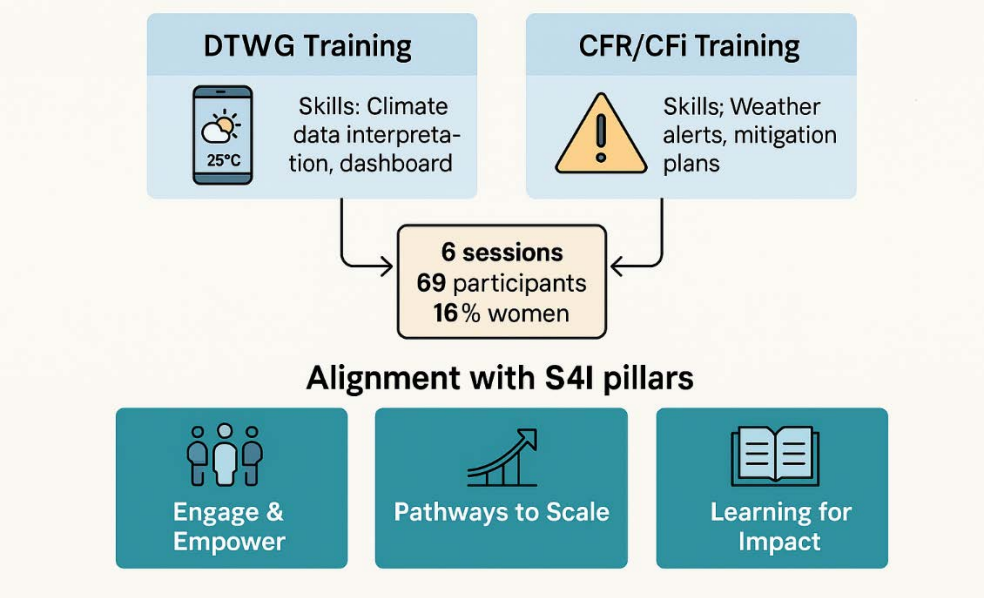

Figure 2: Capacity building on climate information literature on mobile App.

These activities directly contribute to the Logframe outputs (training delivered, digital groups established) and outcomes (enhanced confidence, proactive planning). They also align with S4I pillars:

- Engage & Empower: Building local ownership through DTWG leadership and farmer participation.
- Pathways to Scale: Creating scalable models for digital climate advisory systems.
- Learning for Impact: Capturing feedback and lessons for continuous improvement.

By linking technical innovation with capacity building and institutional engagement, the project ensures sustainability and readiness for scale beyond pilot communities.

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- Follow-up Support and Proactive User Engagement: To ensure sustained adoption, Greenovator implemented a continuous support mechanism involving daily phone calls to key user groups. These calls served a dual function: verifying that users could successfully access climate information and gathering immediate qualitative feedback on their experience and technical challenges.
- Distribution: User tracking mechanisms verified that climate information is reaching the local level

4. Monitoring and Evaluation

4.1 User Performance & Baseline Comparison

During the 2024 pilot phase, the Digital Climate Advisory System (DCAS) was tested exclusively in Kampong Thom province, with limited engagement from district-level stakeholders. Access to climate information was primarily experimental, and adoption remained low due to the absence of structured training and institutional involvement.

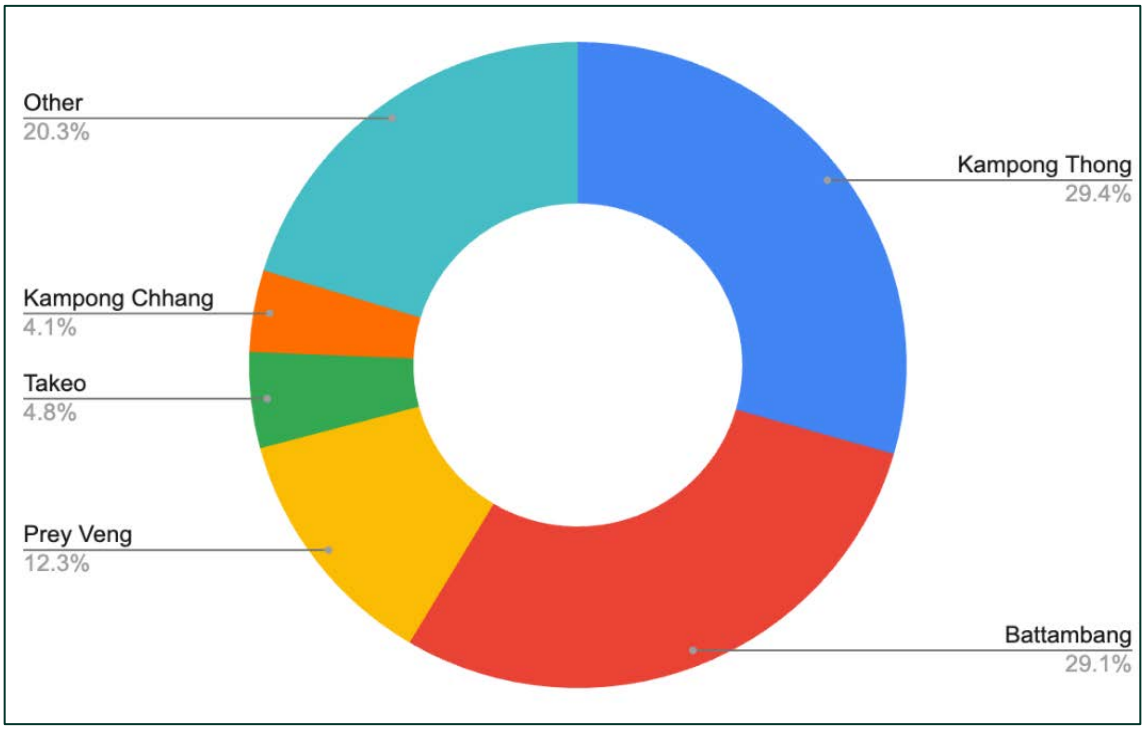
By 2025, the system achieved significant scale-up. The Mekong Farm mobile application was enhanced with real-time weather features and mitigation advisories, and its reach extended to Prey Veng province. This expansion resulted in 2,300 total downloads and 751 active weekly users, indicating strong adoption and consistent engagement with climate information tools.

Geographic distribution of users reflects the scaling strategy:

Prey Veng: 295 registered users actively accessing weather alerts and advisories.

Kampong Thom: 706 users, building on the pilot foundation and benefiting from improved app functionality and training.

Figure 3. Total users of Mekong Farm App and its user distribution based on the province



Promoting inclusivity was a core component of the training and deployment strategy.

- Total Participants Trained: 69
- Male Participation: 58 (84%)
- Female Participation: 11 (16%)

Observations: Women participants showed high engagement with higher digital savvy skills particularly in using the weather alert features for household and livelihood planning.

4.2 Qualitative Impact & User Feedback

To complement quantitative data and evidence behavior change, qualitative feedback was gathered during the daily support calls. Users cited specific examples of how the app shifted their daily decision-making from reactive to proactive.

On Proactive Farm Management:

“Because of the accessibility of weather information on the Mekong Farm App, I can manage my farm activity in advance. For example, I check the weather to decide whether I should dry my paddy seeds today or not.” Female Farmer User, Kampong Thom

5. Challenges and Solution

During implementation, the project encountered several challenges that affected adoption and engagement. Digital literacy gaps among older community members limited their ability to use the Mekong Farm app effectively. To address this, the project introduced visual aids and encouraged peer-to-peer learning, leveraging younger family members as support. Another challenge was declining activity in digital community groups after initial setup. To sustain engagement, the project recommended assigning community moderators and automating weather summaries to prompt discussions. These adaptive solutions ensured continued participation and strengthened the foundation for scale-up.

Table 2. Key challenges and solutions

Challenge Category	Specific Issue	Solution Implemented / Proposed
Digital Literacy	Some older community members had limited experience with smartphones.	Solution: We emphasized visual aids and peer-to-peer learning during the 4 CFR sessions, encouraging younger family members to assist elders.
Group Sustainability	Both digital groups saw a drop-in activity (no new posts for 3 -4 weeks) after initial setup.	Recommendation: Assign specific "Community Moderators" or schedule weekly automated weather summaries to prompt discussion. Contact DTWGs team to produce the Action plan based on the weather information

6. Lessons Learned

- **Sustaining Momentum:** While initial group creation was successful (135 combined members), maintaining engagement requires continuous input. Reliance solely on agricultural specialists led to gaps; future iterations must encourage peer-to-peer sharing among farmers.

- **Integration Value:** Integrating climate data into the existing Mekong Farm app was more effective than launching a standalone app, as users were less resistant to adopting a single platform.

7. Recommendations for Scale-Up

A. Technical Enhancements

- **Two-Way Communication:** Enhance the feedback mechanism to allow CFR members to report real-time catch data back to the system, creating a crowd-sourced data loop.
- **Automated Alerts:** Implement automated push notifications for critical weather events to reduce reliance on manual group posts.

B. Institutional & Sustainability

- **Private Sector Engagement:** Further engage agribusinesses to sponsor specific app features, ensuring long-term financial sustainability of the platform.
- **Institutional Ownership:** Formalize the role of "Community Moderators" within the CFR committee structure to maintain digital group activity.
- **Leverage Business Linkage for Engagement:** Actively promote the app's existing **"Business Linkage" feature** to attract and retain users. By connecting fishers and farmers directly with buyers and input suppliers, the app provides tangible economic value beyond just climate data. This commercial utility will serve as a primary driver for user acquisition and ensure higher daily engagement rates

C. Geographic Scaling & Knowledge Transfer

- **Collaborative Expansion (e.g., Battambang):** Scale the approach by collaborating with other ongoing development projects in target provinces such as **Battambang**. Instead of launching independent pilots, integrate this proven DCAS model directly into their existing frameworks to accelerate adoption and resource efficiency.
- **Replicate Success via DTWG Action Plans:** actively share the standardized **DTWG Action Plans** and documented **Success Stories** with new provincial authorities. These documents should serve as a ready-made "implementation blueprint," reducing the learning curve for new districts and demonstrating the tangible value of the system to policymakers.

8. Evaluation Conclusion

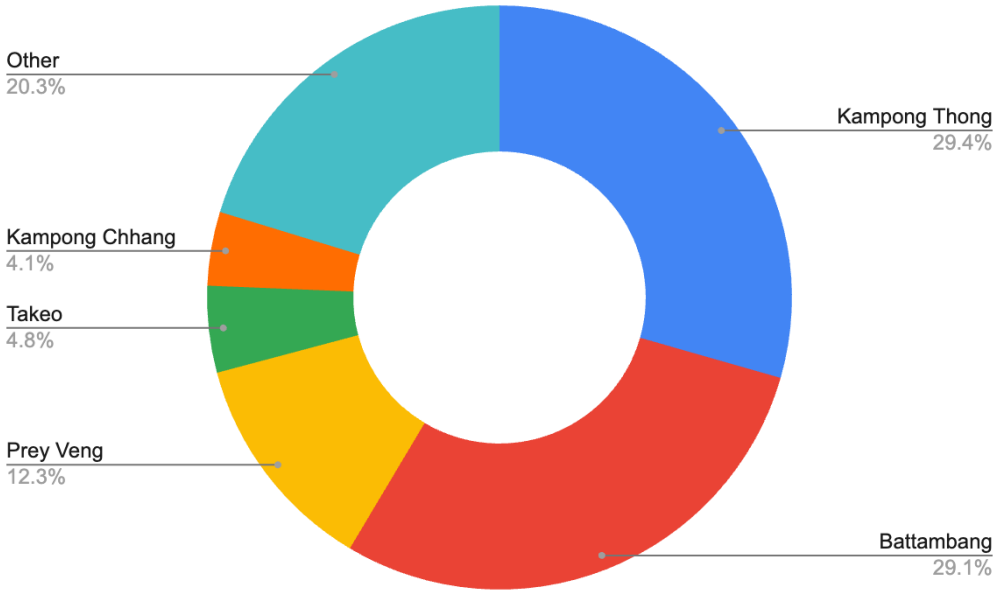
The project successfully strengthened climate resilience in Cambodia's freshwater fisheries by integrating localized climate advisories into the Mekong Farm mobile app and building the capacity of DTWGs and community members. With 2,300 downloads, 751 active weekly users, and inclusive training reaching 69 participants, the intervention moved beyond technology deployment to create an ecosystem of digital literacy and proactive decision-making. Private-sector engagement and institutional ownership provide a foundation for sustainability, while lessons learned offer a clear pathway for scaling to additional provinces. This approach demonstrates that combining digital innovation with capacity building and partnerships can deliver lasting impact for climate-smart fisheries and farming systems.

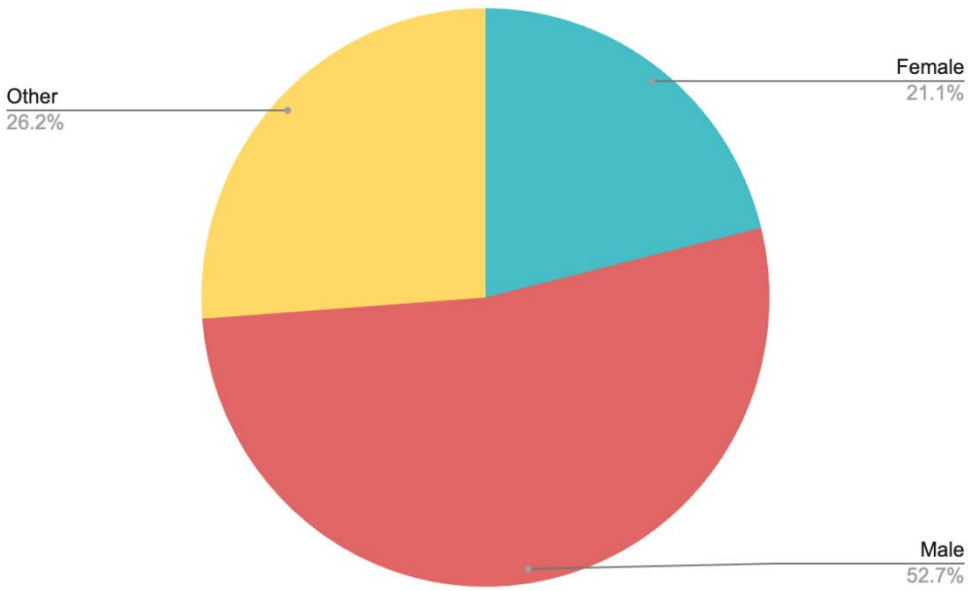
Annexes

Annex 1: App usage video and manual guide

Title	Link
App Usage Video	Annex_App Usage Video
Mekong Farm App Manual Guide	Annex _Digital Literacy Curriculum on MF

Annex 2: User Distribution Data (Location and Gender)





Annex 3: Location Map

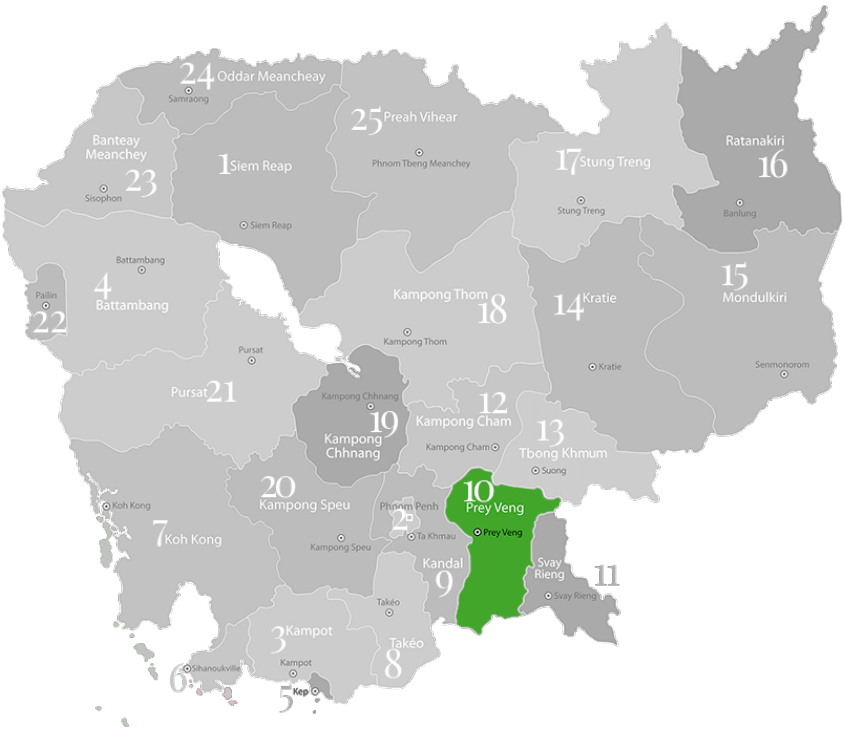


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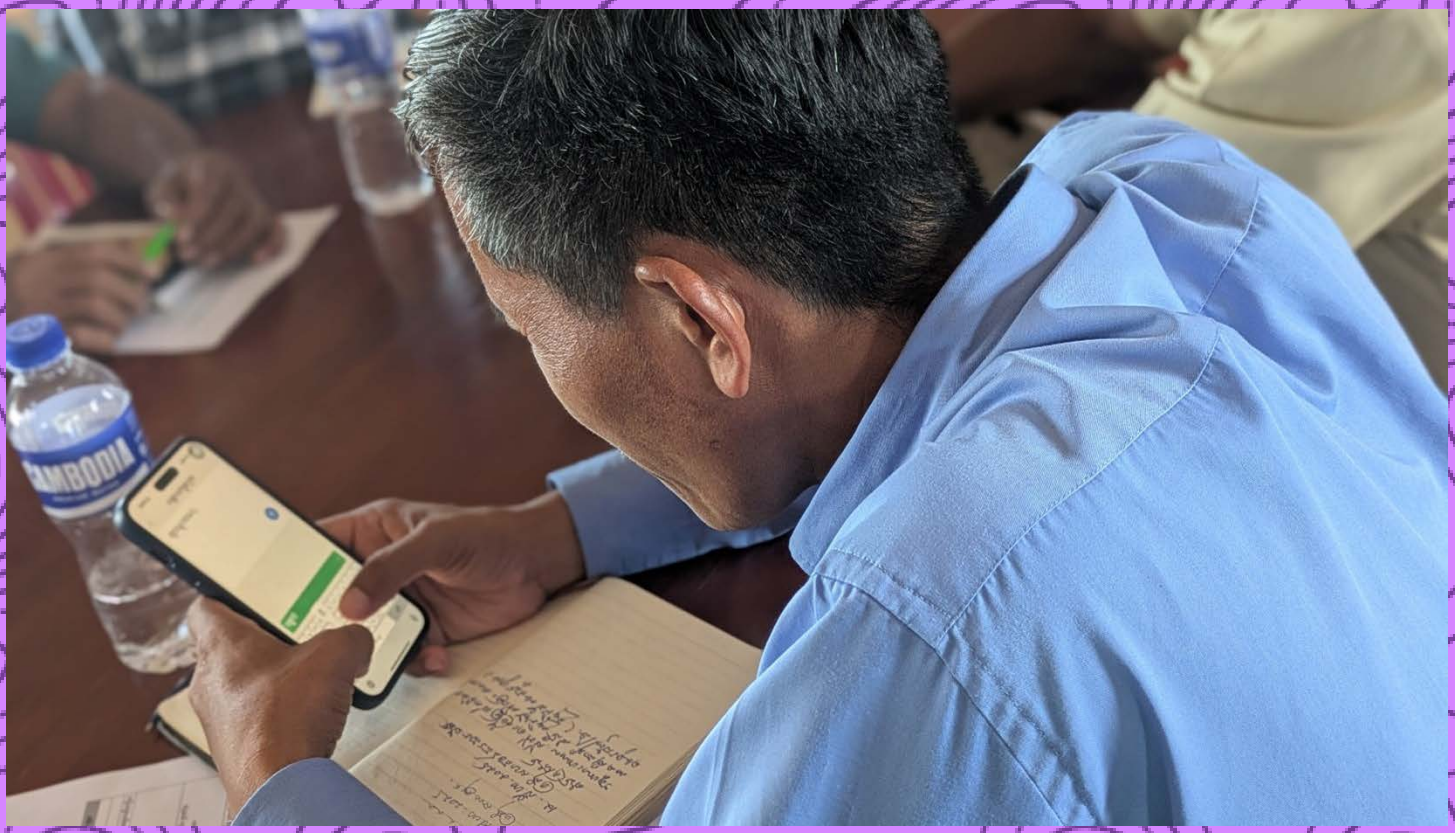
Photo Credit: https://www.visit-angkor.org/provinces-cambodia/

Annex 4: Activity Photo



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