

# Innovation for Climate Adaptation and Resilience (iCARE)

## Building Climate Resilience through Aquaponics in Rural and Peri-Urban Areas of Nepal

### Six Monthly Progress Report

Reporting period: Jan– June 2024

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## 2. Summary of the Achievements

The project aimed to make women in Konjyosom Rural Municipality resilient to climate change and benefit from sustainable farm-based livelihoods through various initiatives. To achieve this outcome, several initiatives were undertaken:

### **Collaboration with Local Cooperative:**

**Objective:** Identify climate-vulnerable and marginalized communities and promote climate-resilient aquaponics technology.

**Deliverables:** Signed MoU between “WindPower Nepal” and the “Local Women’s Cooperative” outlining the roles and responsibilities of both parties.

**Output:** The collaboration with the local women’s cooperative fostered community support and ensured local ownership of the project. The MoU formalized this collaboration and clearly outlined responsibilities and thereby streamlined subsequent activities.

### **Inception Workshop**

**Objective:** Engage relevant stakeholders and partner organizations to introduce the project.

**Deliverables:** The inception workshop included gender-specific data of participants, highlighting the project’s commitment to gender inclusivity.

**Output:** A core group was established within the women’s cooperative to lead the climate-resilient aquaponics initiative, ensuring targeted and effective implementation. Additionally, 10 climate-vulnerable were identified for direct intervention, targeting those most in need to maximize the project’s impact on community resilience.

The inception workshop aligned stakeholders and allowed us to collect inputs and feedback, which significantly enhanced the project’s implementation. The gender-disaggregated data highlighted the active involvement of women, ensuring the gender considerations were integral to the project’s approach. The participants became aware about the project and climate resilient agriculture.

### **System design and deployment**

**Objective:** Design and implement climate-resilient aquaponics system.

**Deliverables:** The design report and photographs document the process of deploying climate-resilient aquaponics technology across 10 households. This deployment includes the integration of rainwater harvesting systems to enhance sustainability. Additionally, an aquaponics demonstration unit have been established at the cooperative’s office, serving both educational purpose and visitor.

**Output:** The deployment of the aquaponics system provided beneficiaries with access to climate-resilient aquaponics technology. This innovative system allows beneficiaries to cultivate fish and plants in a sustainable manner. The integration of rainwater harvesting within the aquaponics units enables them to collect and utilize rainwater, further enhancing sustainability practices. As a result, beneficiaries can maximize the efficiency of water usage, ensuring a reliable and environmentally friendly food production method that strengthens their resilience to climate change.

### **Gender Mainstreaming**

To ensure Gender Equality and Social Inclusion (GESI), we used participatory approach and inclusive project design. we established clear GESI-friendly criteria prioritizing diverse backgrounds, including women, marginalized groups, and single women. Engaging closely with cooperative stakeholders possessing local knowledge, we entrusted them with identifying households meeting these criteria through community consultations. We Scheduled meetings and training sessions at times convenient for women and marginalized groups, accounting for their domestic responsibilities and cultural practices. To ensure technical skills required to operate the aquaponics units we involved selected women from the start during the installation of aquaponics unit. We Engaged beneficiaries in co-designing the aquaponics systems, ensuring that their knowledge and needs were central to the project's success. This fostered a sense of ownership and commitment among participants.

## **3. Summary of Project Beneficiaries**

- **Direct Project Beneficiaries:**

The direct beneficiaries of project are family members of 10 selected vulnerable households. Each beneficiary received a unit of climate resilient aquaponics technology with integrated rain water harvesting system which made them resilient to climate change by allowing to grow plants and harvest fish in sustainable way.

- **Indirect Project Beneficiaries:**

The indirect beneficiaries of the project are approximately 563 members of women's cooperative, community members, one government agency and ward members. Establishment of the demonstration unit provided access to the beneficiaries to strengthen their knowledge on climate resilient agriculture since they can visit and learn from the demonstration unit.

## 4. Performance Outcome Mapping

Table 2: Implementation progress as of 30<sup>th</sup> June 2024

Description	Approved budget (in US\$)	Actual expenditure in US\$	Target	Result/achievement
<b>Outcome 1: Women's in Konjyosom Rural Municipality are resilient to climate change and Benefiting from sustainable farm- based livelihoods</b>				
<b>Output 1.1: MoU signed between two parties, Climate vulnerable and marginalized communities identified and women's are aware about climate-resilient aquaponics technology</b>			<ul style="list-style-type: none"> <li>MoU signed document</li> <li>Inception workshop report</li> <li>Need assessment report</li> </ul>	<ul style="list-style-type: none"> <li>1 MoU document signed</li> <li>1 Inception workshop report with gender disaggregated data of the participants</li> <li>1 Need assessment report</li> </ul>
<b>Activity 1.1.1:</b> Sign MoU between "WindPower Nepal" and "Local Women's cooperative", with clear work division between two parties	517.40	517.40		
<b>Activity 1.1.2:</b> Invite relevant stakeholders and partner organizations	78.96	78.96		
<b>Activity 1.1.3:</b> Conduct inception workshop	846.96	846.96		
<b>Activity 1.1.4:</b> Form a core group within women's cooperative	7278.96	7278.96		
<b>Activity 1.1.5:</b> Identify and select 10 climate vulnerable and marginalised households	-	-		
<b>Output 1.2: System designed and deployed successfully</b>			<ul style="list-style-type: none"> <li>2 design reports with photographs</li> </ul>	<ul style="list-style-type: none"> <li>1 Design report and photographs of climate resilient aquaponics technology deployed</li> <li>1 Design report and photographs of rainwater harvesting system</li> </ul>
Activity 1.2.1: Roll out climate resilient aquaponics technology at the selected 10 households	19635	19635		
Activity 1.2.2: Integrate rainwater harvesting in all the household aquaponics system	3027	3027		
<b>Total</b>	<b>31384.28</b>	<b>31384.28</b>	<b>5</b>	

## 5. Partnership

In the past six months, involvement in the project has help strengthened the capacity of WindPower Nepal's team by enhancing different skills on financial management, report writing, communications etc. The support and feedbacks provided through online communication channels such as WhatsApp and Microsoft teams, regular online meetings and webinars has helped us in knowledge transfer and skill enhancement. Regular submission of monthly progress reports, quarterly reports detailing achievements, challenges and lesson learned ensuring that progress is tracked has improved mutual accountability. The use of collaborative platforms such as Microsoft teams has facilitated smooth communication and project management. The different sessions like presentation on creating procurement plan, provisions of standard reporting templates and other documents helped us in creating proper documentation and project management.

## 6. Sustainability

The project has implemented a co-design and participatory approach, including beneficiaries in design and installation of the aquaponics technology ensuring that projects are tailored to local needs and priorities, enhancing their acceptance and long-term viability. Multiple field visits have been conducted providing first-hand insights into local challenges and opportunities. These visits have informed the adaptation of strategies to better fit the local context, increasing the relevance and impact of our initiatives. Working in ground level with beneficiaries has built the sense of ownership and responsibility among the beneficiaries towards the project. Involving the beneficiaries from the zero level during installation and deployment process has capacitated them in technical aspects, operation and maintenance of aquaponics unit. This knowledge can be used in similar projects or in case of scaling up in future. The project will also capacitate beneficiaries by providing training to ensure sustainability in the long term. The project will also provide market access to the beneficiaries to sell the surplus produces by creating a MoU with existing market. This will create environment for the market driven agricultural livelihood.

## 7. Communication and Knowledge Management

Table 3: Communication and Knowledge products activity and progress achieved

Related activity number	Communications Activity. Strategy/Tactic	Related communications or Knowledge product	Impact /Change perceived. Big or Small wins. Numbers (If any)
1.2	Social media post	Online posts with video <a href="https://fb.watch/ttHdL5rKhy/">https://fb.watch/ttHdL5rKhy/</a>	18 shares, 178 likes, 67.3k plays

## 8. Challenges and Risks

The implementation team faced several challenges during the reporting period, including the selection of households for aquaponics system installation, sourcing components from multiple vendors, geographical barriers, and limited public transportation. By adopting participatory decision-making, establishing strong vendor relationships, planning around logistical challenges, and providing transportation assistance, the team successfully mitigated these risks and continued to progress toward project goals.

### 1. Selection of 10 Households for Installation of Aquaponics Systems

**Challenge:** Among the 563 members of the cooperative, selecting only 10 households for the aquaponics system installation was a difficult task.

**Mitigation Measures:**

**Participatory Approach:** The decision-making process was facilitated by the chairperson of the women's cooperative, ensuring inclusivity.

**Communication:** Engaged directly with cooperative members to gather input and explain the selection process.

**Selection Criteria:** Developed clear, transparent criteria for household selection, focusing on factors such as need, interest, and potential for successful implementation.

### 2. Selection of Vendors

**Challenge:** Due to the customized nature of our aquaponics system design, sourcing different components from multiple vendors was necessary. Obtaining quotations and coordinating multiple vendors proved challenging and led to potential delays.

**Mitigation Measures:**

**Vendor Coordination:** Established strong communication channels with key vendors to ensure understanding of requirements and timelines.

**Long-term Partnerships:** Formed long-term partnerships with reliable vendors to secure a consistent supply of necessary components, minimizing delays and ensuring quality.

### 3. Geographical Barriers

**Challenge:** Despite access to roadways, poor road conditions and maintenance issues created off-road routes and road closures, resulting in transportation challenges and detours.



**Mitigation Measures:**

**Alternative Routes:** Identified and utilized alternative routes to reach meeting locations, minimizing delays.

**Planning:** Scheduled meetings and deliveries around known road maintenance periods to avoid disruptions.

**4. Limited Public Transportation**

**Challenge:** Limited public transportation options made it difficult for individuals without private vehicles to attend meetings with local government representatives and access project sites.

**Mitigation Measures:**

**Transportation Assistance:** Provided transportation assistance, such as arranging shared rides or transport services for those without private vehicles.

**Local Meetings:** Organized meetings at accessible locations and within walking distance for most participants to reduce the dependency on public transportation.

## 9. Lesson Learnt

During the reporting period, several valuable lessons were learned while mitigating the challenges and risks associated with the project.

**1. Participatory Decision-Making and Communication:**

Engaging stakeholders through a participatory approach in decision-making, effective communication, and tailored selection criteria proved instrumental in successfully selecting the 10 households for the aquaponics system installation. This inclusive method not only facilitated a fair selection process but also built trust and transparency among cooperative members.

**2. Vendor Coordination and Long-Term Partnerships:**

The challenge of sourcing customized components from multiple vendors highlighted the importance of establishing strong communication channels and forming long-term partnerships. These strategies ensured reliability and a consistent supply of necessary components, which are crucial for the timely and efficient implementation of the project.

**3. Handling Geographical Barriers:**

Dealing with poor road conditions and road closures underscored the necessity of thorough logistical planning. Identifying alternative routes and scheduling activities around known maintenance periods proved effective in minimizing disruptions. This experience highlighted the importance of flexibility and proactive planning in overcoming geographical challenges.

**4. Field Visits to Stakeholders:**

Conducting field visits to familiarize stakeholders with the proposed technology, its use, and benefits proved to be highly effective. These visits not only capacitated stakeholders with problem-solving skills but also strengthened relationships between benefactors and beneficiaries, ensuring the sustainability of the project. This lesson emphasizes the importance of hands-on engagement and direct interaction with stakeholders to build understanding and support.

In future projects, similar approaches will be adopted to address comparable challenges. Specifically, we will prioritize participatory decision-making, effective communication, tailored selection criteria, and the establishment of strong vendor relationships. Additionally, logistical planning and providing transportation assistance will remain key strategies to ensure inclusive participation. Field visits will be prioritized to enhance stakeholder engagement, build problem-

solving capacities, and strengthen relationships, ultimately ensuring the sustainability of our initiatives.

By incorporating these lessons into future projects, we aim to build on our successes and further improve our strategies for managing risks and challenges.






## Annex 1: Records of Events

The list of all the activities for this reporting period are shown in table 1 below.

Table 1: List of activities

Activities	Description
<b>Activity 1.1.1:</b>	Signed MoU between “WindPower Nepal” and “Local Women’s cooperative”, with clear work division between two parties
<b>Activity 1.1.2:</b>	Invited relevant stakeholders and partner organizations
<b>Activity 1.1.3:</b>	Conducted inception workshop
<b>Activity 1.1.4:</b>	Formed a core group within women’s cooperative
<b>Activity 1.1.5:</b>	Identified and selected 10 climate vulnerable and marginalized households
<b>Activity 1.2.1:</b>	Rolled out climate resilient aquaponics technology at the selected 10 households
<b>Activity 1.2.2:</b>	Integrated rainwater harvesting in all the household aquaponics system
<b>Activity 1.2.3:</b>	Established an aquaponics demonstration unit at cooperative’s office for visitors

## Annex 2: Event reports/minutes, Learning documents, Knowledge products, Communication products or other documents

S.N	Particulars	Documents
1	MoU	 MoU-WPN-and-CO OP.pdf
2	Climate change and GESI Linking Aquaponics presentation	 Climate Change and GESI Linking Aq
3	Farm visit summary	 Visit to Muttha by ten selected househ
4	Co-design and on-site evaluation summary	 On-Site Evaluation of Co-Designed Aqu
5	Support Letter	 support_letter.pdf

### Annex 3 : Result Framework

PDO Indicator Description: Government agencies and Citizens who have access to climate-resilient solutions tested under the project (Number)		
	Current Value	End Target
Government Agencies	1	1
Male Citizen	20	20
Female Citizen	25	25
Date	June, 2024	Dec, 2024
Comments		
Outcome 1 Indicator 1 Description: No. of climate resilient aquaponics technology owned and operated by women's cooperative		
Value	1	1
Date	June, 2024	Dec, 2024
Comments		
Outcome 1 Indicator 2 Description: Number of capacity building trainings and awareness programs run to capacitate the vulnerable and marginalized on climate farming practices		
Value	0	4
Date	June, 2024	Dec, 2024
Comments		
Outcome 1 Indicator 3 Description: No. of women equipped with knowledge of climate smart farming practices		
Value	0	50% of total persons trained

Date	June,2024	August, 2024
Comments		
Outcome 1 Indicator 4 Description: Number of households with increased income from using aquaponics technology		
Value	0	10
Date	June, 2024	Jan, 2025
Comments		
Outcome 1 Indicator 5 Description: Percentage of Women in decision-making process related to aquaponics technology installed at household and cooperative		
Value	100%	50%
Date	June, 2024	Dec, 2024
Comments		
Outcome 1 Indicator 6 Description: Percentage of beneficiaries adopting climate resilient farming practices		
Value	100%	100%
Date	June, 2024	Dec, 2024
Comments		
Output 1.1 Indicator Description: Sign MoU in between “WindPower Nepal” and “Local Women’s cooperative”, with clear work division between two parties		
Value	1	1
Date	June,2024	Dec, 2023

Comments		
Output 1.1 Indicator Description: Climate vulnerable and marginalized communities identified		
Value	10	10
Date	June,2024	March, 2024
Comments		
Output 1.1 Indicator Description: Women are aware about climate-resilient aquaponics technology		
Value	30	30
Date	June,2024	Dec, 2024
Comments		
Output 1.2 Indicator Description: Number of climate resilient technology deployed		
Value	10	10
Date	June, 2024	June, 2024
Comments		
Output 1.3 Indicator Description: Number of Demonstration unit established		
Value	1	1
Date	June, 2024	July, 2024
Comments		



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