

HORN OF AFRICA REGIONAL ENVIRONMENT CENTRE
AND NETWORK- ADDIS ABABA UNIVERSITY
(HOA-REC&N-AAU)

SECOND QUARTER PROGRESS REPORT
FY2025

Project Title: Improving climate resilience of the community and
Ecosystem through IWRM in the Ziway Shalla Lakes Sub-basin
(PPCR_ZSSB)

Project ID: G-ET-C00-SUP-001

Grant/Contract Number: ML-0025

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PROJECT SUMMARY

No.	Key elements	Description
1	Organization	Horn Africa Regional Environmental Center and Network
2	Project title	Improving climate resilience of the community and Ecosystem through IWRM in the Ziway Shalla Lakes Sub-basin(PPCR_ZSSB)
3	Project financed by	African Development Bank/AfDB
4	Total project period	18 months
5	Total project budget	830,000 USD
6	Grant Number	ML-0025
7	Project ID No.	G-ET-C00-SUP-001
8	Project contract signed b/n AfDB & Ministry of Finance	26 May 2022
9	Project End date upon the agreement with ministry of Finance	31 st December 2024
10	Subsidiary Agreement b/n Ministry of Finance and AAU/HoARECN	14 July 2022
11	Executing Agency	Horn Africa Regional Environmental Network and Center/HoARECN
12	The consultant (GIRDC)	Responsible for the implementation the three components of the PPCR-ZSSB project. The agreement will last within 13 months and signed on April 23,2024
13	Contract No. with GIRDC	PROC/HoA/ICB/S/006/2023/2016
14	Relevant stakeholders	AfDB, MoW, RVLBO, CRV-HOAREC, Regions...etc
Suggested NCE and Related information		
1	Requested extension of project Period	31 st December 2025
2	Requested extension of contract period with GIRDC	The contract extended to total of 17 months and will last on 30 September 2025



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ACRONYMS

AAU	Addis Ababa University
AfDB	Africa Development Bank
CBO	Community Based Organization
CIF	Climate Investment Fund
CR	Climate Resilience
CRV	Central Rift Valley
CW's	Community Watershed
GIRDC	Generation Integrated Rural Development Consult
GIS	Geographical Information System
Ha	Hectare
HoRECEN	Horn Africa Regional Environmental Center and Network
IGA	Income Generated Activities
IWRM	Integrated Water Resource Management
Kg	Kilogram
KII's	Key Informant Interview
Lt	Litter
MoA	Ministry of Agriculture
MoWE	Ministry of Water and Energy
NCE	No Cost Extension
NGO's	Non-Government Organization
NMA	National Metrological Agency
PPCR	Pilot Project of Climate Resilience
RVLBO	Rift Valley Lakes Basin Organization
ToR	Terms of Reference
USD	US Dollar
ZSSB	Ziwaye Shall Sub-Basin

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Executive Summary

The Pilot Program for Climate Resilience (PPCR), funded by the African Development Bank (AfDB), focuses on integrating climate resilience into development strategies, which is titled Improving Climate Resilience (CR) of the Community and Ecosystem through Integrated Water Resource Management (IWRM), and targets a 496 ha watershed with 500 households located in Meskan Woreda, East Gurage Zone Administration of the Central Ethiopia Regional State in the Ziway-Shalla Lakes Sub-basin (PPCR_ZSSB). The sub-basin faces a number of challenges, such as environmental degradation, water resource depletion, sever soil erosion, dwindling of crop production per meter square, poverty and population growth beyond the carrying capacity of the resources, and hence the pilot project aims to strengthen the climate resilience of communities and ecosystems in the ZSSB through CR-IWRM. The project has been implemented by thorough community participation from site selection, problem identification, and pilot activity execution to decision-making. Besides, daily expert monitoring, practical field training, providing inputs, stakeholder engagement, and ensuring fair economic share across the gender to create a sense of ownership and ensure sustainability of activities started are among the instruments used as an approach during implementation. This comprehensive intervention has resulted four-volumes of situation assessment draft report and submitted to external and internal reviewers, and 227 beneficiaries organized into legally certified different user groups which have been working on income-generating activities (IGA) such as honey production, solar pump irrigation, handcraft, avocado, coffee, enset, rosemary, fodder, and energy-saving stove production. Women are exclusively owned handcraft and energy-saving stove production user groups, and their membership share is kept high in the rest of the intervention as well to enhance their climate resilience thereby empowering economically. The situation assessment report went well as planned, and the validation workshop will take place on 05 August 2025. The pilot activities have been implemented successfully with full participation of beneficiaries and concerned local government offices, and all the IGA activities are blooming to provide fruits in their gestation period; gullies are healing, and soil erosion is retarded. Most deliverables are on the verge of finalization except the field demonstration and final report. In fact, field demonstrations also started, and firm follow-up from HoAREC continued to wrap up activities as planned and hand over to local government structures on time. Because of the nature of restoration activities, full-scale impacts on water resources, livelihoods, and the restoration of degraded environment are not expected in one year implementation period, and more impacts are yet to come after 3 to 4 years. Scaling up best practices captured during the pilot project implementation to the wider community, and strengthening already started IGA activities are recommended to continue i.e emphasizes continuation of pilot activities to assure attainment of expected impacts.



1. INTRODUCTION

The Pilot Program for Climate Resilience (PPCR) is a global initiative established under the multi-donor Climate Investment Fund (CIF) of the African Development Bank (AfDB). Its purpose is to provide programmatic financing that enables the country to incorporate climate resilience into its development planning and implementation processes.

The PPCR-ZSSB project, funded by the AfDB, is currently being implemented in the Central Rift Valley region, specifically targeting the upper portion of the Ziway-Shalla Sub-Basin. This area is characterized by a dry, arid environment and hosts vital wetland ecosystems, significant agricultural investments, and diverse water resources.

The project aims to formulate climate-resilient water resource plans and investment strategies, guided by the principles of Integrated Water Resources Management (IWRM) within the Ziway-Shalla Sub-Basin. By the end of the implementation phase, the project seeks to achieve the following outcomes:

- Develop a climate-resilient Water Resources Development Plan for the Sub-Basin.
- Enhance the capacity of local and regional governments while raising awareness in communities to incorporate gender-responsive climate resilience into economic and social development planning, as well as water infrastructure.
- Promote and implement livelihood-based, climate-resilient water resources management.

Currently, the project is progressing smoothly to achieve the set targets by the project. Accordingly, the report presented main achievements on deliverables 5 – 10 and 12 – 15 as indicated here under.

1.1 OBJECTIVE OF THE REPORT

The report aims to provide overall status of the project implementation (Situation Assessment Reports, and pilot activities) to fit into the broader objective of the pilot project to strengthen the climate resilience of communities and ecosystems in the Ziway Shalla Sub Basin through Climate Resilience –Integrated Water Resource Management.

2. IMPLEMENTATION APPROACH

To avail the draft reports of the Situation Assessment, WAP implementation support, Water Resources and Investment plan; and Water Resources and climate analysis; among the approaches used by the consultant were review of previous works, secondary data collection, field assessment in selected sites and field verification, application of GIS & remote sensing techniques; and review of previous studies and policies can be mentioned

3. MAJOR ACHIVEMENTS

3.1 SITUATION ANALYSIS REPORT PREPARATION

Parallel to the physical intervention on the designated watershed and generating economic benefit for the beneficiary, assessment reports were prepared and; sent to both external and internal reviewers The report will be consolidated by reviewer comments and present to workshop for validation.

The primary objective of the situation analysis is to generate relevant information that will assess the current status and facilitate the design of climate resilience planning and development initiatives within the basin, aimed at fostering a climate-resilient ecosystem and community, in line with the principles of Integrated Water Resource Management (IWRM). All team members have completed their draft reports, and organized into four distinct volumes:



The assessment reports covers deliverables 5 – 10 & 12, and organized coherently and comprehensively as planned. Its titles listed hereunder and full documents available for further reading.

3.1.1 Situation Analysis Report

3.1.2 Analysis of Climate, Climate Change, Water Resources & Resilience Systems

- Annex I: Analysis of Climate, Climate change Impacts and Resilience System
- Annex II: Climate Resilient Based Hydrological / Surface Water Resource Analysis
- Annex III: Ground Water Resources Situation Analysis
- Annex IV: Irrigation Situation Analysis
- Annex V: Assessment of Integrated Water Resource Management (IWRM)

3.1.3 Assessment of Socioeconomics and Environmental Situations

- Annex VI: Socioeconomic Situation Analysis
- Annex VII Assessment of Gender and Women Economic Empowerment
- Annex VIII: Community Livelihood Situation and Natural Resource management
- Annex IX: Assessment of Terrestrial and Aquatic ecosystem
- Annex X: Assessment of Environmental Aspects

3.1.4 Organizational Strengthening and Capacity Building

- Annex XI: Institutional, Organizational Strengthening, and Capacity Building
- Annex XII: Assessment of Stakeholders Situation
- Annex XIII: Data Base Management system

These assessment reports reviewed against the given deliverables and indicators. The summary of the assessment reports presented in table below , for easy understanding.



Table 1 Summary Report of Assessment Report Vs Deliverables and indicators

Task Title	Plan		Achievements	Deliverable No	Indicator
	Unit	Quantity			
OUTCOME 1: Inclusion of quality hydro-meteorological and climate data and information for Water Resources Development (WRD) planning and operations.					
Output 1: Climate-resilient Water Resources Development plan that has integrated measures against the impacts of climate change (droughts and floods) developed for the Sub-Basin					
Activity 2: Hydrological Analysis	Document	1	1	06	Document prepared
Activity 3: Water Resources and Climate Change Analysis and Monitoring Plan	Document	1	1	07	Document prepared
Activity 4: ZSSB Water Allocation Plan Implementation Support Report	Document	1	1	08	Document prepared
Activity: 1 Analysis of Planning and Preparation of Investment Projects and Implementation Plan	Document	1	1	09	Document prepared
OUTCOME 2: Mobilization of investment and implementation of gender responsive WRD projects and programs in accordance with the Sub-Basin plan. Increased awareness and capacity of local and regional government and community stakeholders on climate-resilience and water resource management.					
Output:2 Local and regional government capacity, local community awareness to incorporate gender-responsive climate resilience into economic and social development planning and water infrastructure increased					
Activity 1: Institutional, Organizational Strengthening, and Capacity Building	Document	1	1	10	Document prepared
Activity 2: Situation Analysis	Document	1	1	05	Document prepared
OUTCOME 3: Identification of the gaps and challenges (including gender gaps) that need to be addressed and mainstreamed in the planning and future project preparation to; (i) improve the standard of living of the Basin’s population, (ii) promote inclusive growth and, (iii) enhance the population’s preparedness and adaptation to deal with vulnerability to climate change impact and while ensuring long term water security in the Sub-Basin.					
Output 3: Livelihood-based climate-resilient water resources management is promoted and access to economic assets to increase resilience in climate variability improved					
Activity 1: Gender and Women Economic Empowerment	Document	1	1	12	Document prepared



3.2 FILED DEMONSTRATION (PILOT ACTIVITIES)

It is recalled that; considering the core objectives of the pilot demonstration component of the project and overall goals i.e. building the adaptive capacities and potentials of the ecosystem and vulnerable communities with selected and develop appropriate CR IWRM knowledge /practices and experiences. Akamuja-Shereshera Community watershed which is located in Meskan Woreda in East Gurage zone was selected for pilot activities. The planned and implemented pilot Community watershed activities are the following;

3.2.1 Multipurpose Climate Resilience Nature Based Solution

Nature based soil and water conservation measures have been implemented on vulnerable croplands in the middle section of the watershed community and are currently performing its ecosystem function. Both biological and physical conservation structures are showing promising results, as evidenced by silt accumulation in gullies—an indicator of potential rehabilitation through the deposition of sediments from upper catchments. The integrated biological conservation efforts, including the planting of elephant grass and Desho grass, have blooming well, although some areas require maintenance through gap filling and replanting.

Traditional community regulations, which are also being practiced in the intervention areas, play a crucial role in protecting both physical and biological structures from damage caused by livestock. The site has attracted visits from various interested groups within the project kebele, as well as officials from stakeholder organizations.

As seen in the figure below, elephant grass and desho grasses planted growing aligned with bamboo conservation structures to strengthening the physical structure and to be used as animal feed most importantly during dry season.

During the field visit undertaken with beneficiaries and stakeholders confirmed that the effectiveness of the implemented Nature Based conservation Structure with local materials (Bamboo) as it trapped considerable size silts in gullies and front-side of the structures.

As observed during the field visits, the forage grasses in particular the elephant grasses have yielding high biomass ready to feed animals by cut and carry system. Parallel to the practical demonstration, the experts have given training and orientation about the use of these forage products without damaging the structure and sources. There is evidence that some farmers are starting replicating this conservation technology on their plots.



Figure 1 some of the nature based activities within the watershed at the beginning of intervention



Figure 2 Status of healing gullies after one year

3.2.2 Upper Community Watershed Protection

Catchment conservation activity undertaken in the upper catchment of the community watershed is a pivotal intervention in demonstrating effective and sustainable natural resource conservation can be achieved through community lead approach. In response to the existing environmental conditions, the project strategically targets the uppermost segments of the akumja sheshera community watershed to reduce the flood hazards at the middle and lower parts of the watershed and retain the rainwater for ecosystem restoration. In collaboration with kebele administration, large number of people have participated in pit preparation and planting.

The conservation measures planned and implemented encompass both biological and physical conservation technologies. According to Akmuja shershera community watershed development plan, the upper watershed area requires integrated conservation measures which have been implemented in collaboration with the community watershed development committee, i.e over 200 community members participated in the construction of physical structures including soil bunds and hillside trenches. Furthermore, to enhance the structural stability and ecological functionality of the constructed bunds, particularly those established on cultivated lands at the



foot hill forage species such as grass pea (*Lathyrus sativus*) and pigeon pea (*Cajanus cajan*) were sown. These species has a dual purpose that reinforcing the bunds and providing sustainable forage resources as part of the green strip system



Figure 3 Establishment of multipurpose forage plants on upper catchments

3.2.3 Backyard Improved Avocado Plantation

The primary objectives of establishing avocado plantations in the backyards is to enhance household resilience by generating income through the sale of avocado fruits and to increase crop diversity with multiple benefits which hence increase household resilience . The fruit trees are expected to begin bearing fruit after three years and are anticipated to become a major source of income for the beneficiaries. Each tree is projected to yield approximately 50kg of fruit annually, with the potential to generate an income of 2000 birr/tree per year.

The seedlings were distributed using a cluster-based approach to simplify market access and ensure more effective technical support from agricultural offices. Planting avocado trees alongside other backyard crops such as enset, natural grasses, and shrubs will contribute to reducing soil erosion and improving soil moisture retention. As the trees grow and develop wide canopies, they are also expected to contribute to reducing greenhouse gas (GHG) emissions through carbon sequestration.

Additionally, the trees provide shade for livestock, assisting protect them from heat stress, which can significantly affect their health and productivity.



Avocado growers were Organized into groups and established a management body, including group leader, secretary, and treasurer. The formation of avocado producers' groups will facilitate linkage with stakeholders interested in providing financial and technical support.

In consideration with the feedback during the training session conducted in June, the project ready to distribute additional avocado grafted seedlings to those interested and attained the fruit trees production management training. Moreover, most of them prepared planting pits for avocado seedling based on availability of land for orchard farming. The avocado producers' group have got a recognition from Meskan Agricultural Office and received official certificate from the indicated office for acceptance as producers' group

Planned Activities in here are;

- Conduct an inventory and assess the growth performance of each avocado tree planted by the beneficiaries.
- Aware to construct protective enclosures around each distributed avocado seedling to prevent animal interference and support better management.
- Purchase and distribute additional improved avocado seedlings to further strengthen the beneficiaries' climate resilience and support sustainable agricultural interventions



Figure 4 Avocado seedling bought for distribution



Figure 5 Development agent demonstrating planting of seedlings



Figure 6 Planted and fenced avocado seedlings



3.2.4 Rosemary Production and Marketing

The rosemary seedlings were distributed for 64 households reside in lower and upper sub-catchments. However, the result has not been satisfactory and this year the project planned to restore the plants by replacing them with healthy, productive rosemary seedlings. The number of seedlings and beneficiaries will be fixed after reassessing the needs of the beneficiaries. The kebele agricultural office took responsibility to check their demand by consulting the beneficiaries. The agricultural office ensured the availability of improved rosemary seedlings in the woreda.

The rosemary growers organized into group and form a management body including Group leader, secretary, and treasurer. The formation of producers' associations with other Kebeles will facilitate communication and create business links with potential stakeholders interested in provision of financial and technical support. This will help the group to get a legal entity and recognitions from concerned government offices



Figure 7 Rosemary seedlings distribution in lower catchment cluster

3.2.5 Coffee Plantation at the backyard to Diversify Household Income

Coffee seedlings were distributed to 83 farmers, with an additional 148 seedlings provided to Farmers' Training Centers (FTCs) for demonstrating improved coffee farm management practices. The primary objectives of this initiative were to promote crop diversification as a component of climate-smart agriculture and to enhance household income once the coffee trees reach maturity.



The target area is situated in a mid-highland agro-ecological zone, which is highly suitable for coffee cultivation. Each participating farmer received and planted between 20 and 40 seedlings. These coffee seedlings started yield after five years and can get provide a yield of 5-8qt/ha of coffee beans

Coffee plantations also contribute to micro-climate regulation, particularly during periods of heat stress and prolonged dry seasons, thereby improving local climate resilience.

Coffee growers were organized into groups and established a management body, including group leader, secretary, and treasurer. Forming producers' association will substantially assist the group to strengthen linkages with stakeholders interested in offering technical and financial support. The groups' legal recognition is under process to get official certificate.



Figure 8 Beneficiary treating planted coffee

Planting *Sesbania sesban* trees between coffee seedlings can provide multiple benefits. The primary benefit is shade—approximately 40% shade is recommended for optimal coffee growth and productivity. Additionally, *Sesbania* trees can serve as livestock fodder and contribute to soil fertility by fixing atmospheric nitrogen into the soil.



3.2.6 Enset Plantation at the Backyards to Diversify Household Income

Enset plant is a drought resistant staple perennial crop in the project area. It is mainly cultivated by residents in upper part of the community watershed at the backyard. After consultation with the communities and Meskan agricultural office, a total of 1228 enset suckers have been distributed. Currently the survival rate is found very satisfactory; almost all planted suckers are well established

The Enset growers have been organized into group and formed a management body including Group leader, secretary, and treasurer. It is also proposed to form producers' association as it will facilitate linking with other potential stakeholders interested in provision of financial and technical support to the group.



Figure 9 Enset seedling planted



Figure 10 Established Enset plant at the backyard

3.3 WOMEN FOCUSED INCOME GENERATING ACTIVITIES

The kebele administration and community watershed committee specifically selected members for the handcraft and improved cook stove IGA groups, primarily consisting of adult women, young females, women with disabilities, and unemployed or landless women.

3.3.1 Energy saving Stove Production and Marketing

The energy saving stove production and marketing is part of the women economic empowerment intervention and climate change mitigation and adaptation activity. The intervention expected to improve source of income and capable of enhancing their climate resilient capacity through diversifying their household income sources. The pilot project was supplied the necessary materials and molds. They produced a total of 63 stoves and 13 of the beneficiaries are using the stove for themselves; the remaining stoves are sold to users.

The group to date sold 40 improved cook stoves out of which 21 stoves goes to Limat lesira cook stove producers' group and 19 is share of the Walta cook stove producers' group. In a recent field visit the project supplied inputs for additional production.



Figure 11 HoAREC team visiting energy saving stove producing group

3.3.2 Women Local Handcraft Production and Marketing

The handcraft group members possess strong traditional skills and experience that align well with the objectives of the pilot intervention, which is rooted in climate-resilient livelihood diversification. Both two namely; the “Biltsigina” Handcraft Production and Marketing Group and the “Sira Ledget” Handcraft Production and Marketing Group are actively producing.

The groups have provided a list of the materials required continuing operations and have shown strong commitment to work collaboratively guided by current market demands. Based on their experience and prevailing market conditions, a number of handcrafts has been identified mainly: Mesob, Sefed, Jiba, and Anchot etc.

To ensure quality control and effective procurement, each group has appointed one active woman as a quality controller in addition to the three-member management team. Group members have also held internal meetings to plan the timing and process for purchasing and fairly distributing materials.

During field visits and consultations, project staff explained to the members a new budget allocation approach, which aims to provide equal opportunities for all members. Under this approach, financial support will be distributed in three rounds, with each member receiving between 12,000 and 15,000 ETB, regardless of the complexity or budget requirements of their



specific products. This support is designed to economically empower vulnerable women and build their resilience to climate-related economic shocks.

In the first round, the Biltsigina group received 35,000 ETB (for 16 members) and the Sira Ledget group received 25,000 ETB (for 12 members) and procured a number of input items under supervision of the consultant's community organizer and local community organizers. The remaining amounts from the initial budget allocations—35,000 ETB for Sira Ledget and 45,000 ETB for Biltsigina—deposited into their respective Omo Microfinance Saving Accounts, allowing the groups to access funds based on their ongoing needs.

Future budget releases will be performance-based, depending on each group's progress and outcomes.



Figure 12 Hand craft product visited by HoAREC team



3.3.3 Household Poultry Production

Household poultry farming has been introduced as a women-led initiative aimed at building climate resilience and generating sustainable income, particularly for women beneficiaries who are disproportionately affected by recurring environmental shocks. This intervention is designed with multiple objectives: to strengthen climate adaptation through poultry farming system and increase household income as a pathway out of poverty.

A total of 35 households, primarily women-led, were selected to participate in the initiative. Each household received 20 improved breed chickens, along with feed support, bringing the total number of distributed chickens to 660. As part of their contribution and to create sense of ownership, beneficiaries constructed poultry houses using mesh wire within their homesteads. The readiness and adequacy of the poultry housing were verified by the consultant and woreda experts and development agents prior to distribution.

Poultry farming not only provides economic resilience but also contributes in reducing methane emissions compared to large ruminant livestock systems, thereby supporting climate mitigation efforts. Initial field assessments indicate that the distributed chickens are in good health but few numbers of chicken reported lost due to wild animal attack and diseases. A follow-up inventory will be conducted to confirm the status and number of chickens across the participating households.



Figure 13 Women user groups organized on poultry



Figure 14 Chicken and feed distribution for vulnerable women

After the distribution of chicken feed, the project purchased and distributed one feeding case and one watering case for each of the beneficiaries.

3.3.4 Modern Beekeeping and marketing

This income-generating activity is designed as a climate-resilient intervention by integrating beekeeping with agroforestry practices. This approach enhances ecosystem services and promotes environmental sustainability by ensuring access to adequate bee forage from both natural vegetation and cultivated flowering plants. The selected cluster for honey production is located in the upper catchment area, which benefits from relatively dense vegetation cover ideal for sustaining healthy bee colonies.

Each beneficiary received and managing three-layered three beehives with bee colonies. This obviously contributes not only to income diversification but also to increase pollination services, which are essential for the productivity of nearby crops and natural vegetation. To maximize productivity, an inventory and performance assessment of the beehives is necessary. Additionally, some colonies have escaped and will likely require replacement during favorable climatic conditions.

This intervention not only builds climate resilience at the household level by diversifying income sources but also strengthens ecosystem resilience through pollination and vegetation regeneration.



Figure 15 Modern beehives installed at the backyard and safety equipment

3.4 PILOT CLIMATE SMART AGRICULTURE

3.4.1 Crop Production Technologies

Promotion of climate smart agriculture for strengthening the community and agricultural ecosystem in mitigating and adapting the climate change impacts with appropriate and applicable crop technologies has been under implementation in the pilot community watershed. This demonstration apparently increases adaptive capacity to erratic RF pattern & intensity which mostly resulted in vulnerable production system. Consultation with the farmers, community watershed committee and agricultural office were carried on specific packages acceptable and replicable by the communities. Some of the potential technologies are intercropping, mulching, short cycle crop varieties production, on farm soil and water management, use of bio-fertilizer and integrated pest management system.

3.4.2 Pilot Solar Pump Irrigation

The small-scale irrigation scheme is designed as a climate-resilient agricultural intervention, utilizing a zero-emission solar energy system to power water distribution. A 20,000-liter water storage tanker was installed within a wire-fenced compound at the entrance of the irrigation site, ensuring secure and sustainable access to irrigation water. The scheme covers a total of five hectares and benefits 23 households, enabling them to produce crops all year round despite increasing rainfall variability.

As part of the intervention, the project supplied 40,000 improved tomato seedlings and 37,500 head cabbage seedlings, along with the required amounts of DAP and urea fertilizers and essential pesticides. The irrigation scheme offers multiple climate change adaptation and mitigation benefits, including:



- Stable production under erratic rainfall conditions, enhancing food security
- Significant increases in crop yield and productivity
- Enhanced crop diversity, contributing to dietary diversity and income sources
- Reduced carbon emissions by replacing fossil fuel-powered pumps with solar energy
- Technical support is being provided by the woreda crop production expert and kebele development agents, who are actively involved in monitoring and guiding the implementation of farming activities from land preparation, transplanting, and pest management.

Currently, farmers are cultivating tomatoes on 2 hectares and head cabbage on 1 hectare of irrigable land. Additionally, irrigated wheat previously grown on 1.75 hectares was successfully harvested. Earlier transplanted tomato plants on 0.25 hectares are now at the fruit-setting stage, and all supported by irrigation water supplied through the solar-powered system



Figure 16 Solar energy installed and tomato under production by the irrigation



Figure 17 Cabbage and solar energy visited by HoAREC team

3.4.2.1 Organization set-up and legalization

As part of the efforts to build community-level resilience to climate change, the beneficiaries of the small-scale irrigation scheme have established Irrigation Water Users' Group (IWUG) to ensure equitable and efficient management of water resources and agricultural inputs. This community-driven governance system plays a vital role in supporting climate adaptation by improving water use efficiency and promoting collective action.

Prior to the start of field operations, landholders within the command area convened a general assembly to register and screen eligible beneficiaries—specifically those with legally certified land-use rights. Following this process, the Akamuja Shershera Irrigation Users' Group was established at grass root level. The group elected group leader, secretary, and treasurer, along with four sub-group coordinators, each responsible for overseeing activities within their designated blocks.

Legal certification is currently on process, with Meskan Water Resource and Mining Office leading the process in accordance with adopted the then SNNPR Irrigation Users' Organization regulations. Simultaneously, the group has opened a bank account in Omo Microfinance which is a prerequisite for full certification and official recognition as a community-based irrigation organization.

This structure enhances institutional capacity and accountability, creating a foundation for long-term, climate-smart irrigated agricultural development to mitigate increasing rainfall variability and water scarcity.



3.4.3 Demonstration of CSA Practices for Community Resilience Building

The demonstration of appropriate and replicable climate-smart agriculture (CSA) technologies and practices has been initiated to strengthen the resilience of the local agricultural ecosystem; and help communities adapt to increasing climate variability and environmental shocks. This intervention is a cornerstone of the project's climate adaptation strategy, aiming to improve household and community-level adaptive capacity through sustainable and productive farming practices.

The key objective of this initiative is to promote drought-tolerant, short-cycle crop varieties that can thrive under rainfed conditions, ensuring food security even in years with irregular rainfall. The demonstrations have been designed not only to introduce climate-resilient technologies but also to serve as practical learning hubs for farmers across the region.

The following CSA practices and cropping systems are currently being demonstrated:

- I. Intercropping of Maize (BH 546) with Haricot Bean (Nasir Variety) – on three demonstration plots to enhance soil fertility and improve resource use efficiency.
- II. Organic Maize Production (Shone Variety) using Vermi Compost – on two plots to promote soil health and reduce dependency on synthetic inputs.
- III. Intercropping of Maize (DK 777) with Pumpkin – on two plots to diversify farm outputs and increase land productivity.
- IV. Protein-Rich Maize (BH 549) Intercropped with Mung Bean – to improve household nutrition and provide additional income streams.
- V. Drought-Tolerant Pumpkin Cultivation – as a climate-resilient crop option with multiple uses and market potential.

Currently, the demonstration plot has been implemented as planned. Land preparation had been completed in alignment with the local cropping calendar. Sowing of maize, pulses and pumpkin seeds was completed and found at early vegetative growth stage (see fig 18)

The Woreda Agricultural Office's Crop Production and Extension Department is working with the project in the execution of these demonstration activities. They were responsible with the consultant team to identify the potential seed sources and procurement, and they are providing continuous technical support. The demonstrations will serve as a practical learning platform for nearby farmers and other interested stakeholders, facilitating knowledge exchange and scaling up of proven CSA best practices across the wider community.



Organize and register the participant farmers in a group to benefit from different stakeholders. They elected group leader, secretary and cashier to manage the whole activities



Figure 18 Haricot Bean and pumpkin intercropped with maize

3.5 COMMUNITY BASED NURSERY ESTABLISHMENT

The primary objectives of the community based avocado seedling production nursery establishment are to enhance ecosystem climate resilience and strengthen carbon sequestration potential and improve household income by building reliable climate change adaptation capacity. The nursery has a reliable water source with the help of a solar powered water pump system.

Given that the project area and the woreda in large has been identified as a designated avocado production development corridor, the establishment of a reliable source of high-quality improved grafted avocado seedlings is essential for scaling up fruit production. This nursery will serve not only the project watershed but also for the neighboring kebeles, ensuring a sustainable and consistent supply of planting material, which is critical to achieving high yielding avocado production

The nursery site is strategically located adjacent to a solar powered irrigation system with a total area of 250sqm, comprising a 50 m² working area, 180 m² seedling propagation area and 20 m² for auxiliary use. According to the nursery establishment plan, the site is designed to produce 3,340 grafted seedlings annually, with the potential to support planting of approximately 208ha of land per year.

The procurement and bidding procedures for construction of the nursery infrastructure were completed and construction is currently nearing completion.



Figure 19 HoAREC team visiting nursery center under establishment

3.6 CONSTRUCTION OF ROADSIDE SHOP

The construction of roadside shops for women focused income generating groups is demanding intervention to create market outlets for functional climate resilient income generation activities in the akimaja shershera community watershed. The shops will be used as a display point and selling center for the above-mentioned organized groups. This expected to solve the existing problem in marketing of the finished products like the energy saving stoves, handcraft and vegetables cultivated in irrigated agriculture scheme.

During the situation assessment, effective and proper market linkage found the major problem for sustainability of the small-scale women focused income generating activities in the community watershed, there by taking the location advantage of the community watershed. In consultation with woreda Job opportunity and Entrepreneurship office, Women and Youth affairs office, Trade and Industry office and Agricultural office, the three shops designed to be constructed near to the main road from Addis to Butajira. It gives wide range of market opportunities by linking potential whole sellers, retailers and individuals with producers.

The two energy saving cook stove producers' groups (2) will have one room, the two handcraft producers' groups and small scale irrigation users' group will manage one room for each group to sell their products. They will establish joint management body to regulate the effective and proper utilization of resources.

Each of the three constructed shops has a size 2m X 3m with a height of 2.5m, made of 1.5mm sheet metals with 3-sides display shelves

3.7 COMMUNITY AND LOCAL STAKEHOLDERS CAPACITY DEVELOPMENT

The capacity building has been focused on Livelihood improvement and climate smart agriculture. The orientation and training on the overall pilot system were given to the woreda and kebele stakeholders. Besides orientation to different target groups of communities were made on the nature based solution, backyard plantation for diversification of crops, different potential income generating activities, women economic empowerment

Moreover capacity building had been conducted including

1. practical Training for local implementing stakeholders and beneficiaries
2. technical support and strengthening of Local RUSCOs including linkage of the above pilot schemes with the locally active MFI

The Pilot scheme group will continue work intensively in the coming month to accomplish the ongoing and planned CR pilot interventions as follow.

1. Continue support of the implemented pilot activities through technical support and supply of more inputs
2. Completion of community organization to make them eligible for certification by the appropriate local offices



3.8 SUMMARY OF BENEFICIARIES OF THE PILOT SCHEME

The watershed spans a total area of 496 hectares and supports approximately 500 households. The climate resilience pilot activities have directly benefited about 240 individuals from these households, as detailed in the table below. Additionally, other local communities and relevant stakeholders have also gained direct and indirect benefits from the pilot activities.

Table 2 Pilot activities and list of beneficiaries

S.N	Pilot Activities	No of beneficiaries	Remarks
1	Natural based solution integrating fodder plants	23	
2	Backyard Commercial Rosemary production	64	
3	Backyard Improved Avocado plantation	63	
4	*Backyard Coffee plantation	37	
5	Improved stove production	20	Women
6	Hand craft group	20	Women
7	Modern honey production	10	
8	**Solar Pump irrigation	10	On planning
9	Training & capacity building in Community CR & adaptation strategies	Planned for all	

*150 seedlings were given to kebele Agricultural development demonstration center for demonstration to the others

** Actual number will be known during implementation

4. CONCLUSION AND RECOMMENDATIONS

4.1 CONCLUSION

The pilot program for climate resilience (PPCR) in the Ziway-Shalla lakes Sub-basin has shown promising results in enhancing climate resilience through integrated water resource management. The project has achieved significant milestones, including the successful completion of the inception report, the establishment of various pilot initiatives, availing draft report of situation assessment, and the engagement of numerous stakeholders. These efforts have not only fostered economic opportunities but have also contributed to a better understanding of climate-smart practices within the community.

Although the substantial impacts cannot be seen in one year intervention, the flourishing pilot activities both on livelihood and restoration are inspiring beneficiaries. Women involved in the entire livelihood activities for their economic empowerment which grasp them decision making

power in all aspect. Besides, robust follow up from government partner offices on the pilot activities under taking make sure project intervention acceptance and a clue for smooth phase out strategy as well.

In general, the comprehensive and sequential implementation of project activities, full engagement of community and local government structures, indicate the interventions remain relevant and effective for the women economic empowerment, nature restoration and for the integrated water resource management.

4.2 RECOMMENDATIONS

- As a capacity building is not one time work, farmers should continuously capacitated during the physical intervention.
- Engagement of local beneficiary community at all stages can substantially improve and assist them to accept new technologies introduced and create sense of ownership which hence ensure sustainability. So, community engagement should get priority.
- Providing some room of accepting government activities with the limited budget available can smooth the phase out strategy and improve collaboration among government, local community and project staffs.
- Best practices should be identified and recorded properly to scale up to the wider community by any willing development partner(s) and government after project exit.

5. MAJOR CONSTRAINTS

- Lack of Stakeholders alignment (coordination and collaboration)
- Conflicting Priorities: Different stakeholders found to have varying priorities within their own main mandates resulting in giving less attention of project activities. This is usually reflected by categorizing their own works as regular government and of others as additional non regular works
- Lacks of similar Context despite attempt to frequently create awareness: Stakeholders often possess different mostly from own understating of contextual knowledge of CR-IWRM.
- Low Participation of the Stakeholders considering as less part of the assignment.

6. ACTIONS TAKEN

- Diplomatically convince government partners through focal person.



- Engaging partners in the field visit and convince the importance of intervention.
- Sometimes accept their activities plan that aligned with the project objectives to smooth the relation.
- Share the responsibility among the consultant and government partners to act responsibly

7. WAYFORWARD

7.1 REMAINING ACTIVITIES SCHEDULE

The following plan will be adopted to complete the assignment as per the requirements and also discussion and agreed upon with the client during progress discussion

Table 3 Schedules for the remaining activities

<i>S.N</i>	<i>Major activities</i>	<i>Planned Timeline</i>
1	Continue pilot activities & completion	Up to end of July
2	Stakeholders DFR review workshop	August 5, 2025
3	Incorporation of all comments and submission of Final reports	September 15, 2025
4	Completion of field pilot activities	August 15, 2025
5	Preparation of Draft Pilot /demonstration report & submission	August 30, 2025
6	Preparation of final Pilot report	September 30,2025
7	Geo data compilation and submission	September 30,2025