

Integrated Water Resources Management to Enhance Resilience of Agriculture (ERA) and Food Security

Annual Progress Report 01 January -31 December 2025



Homaid pond at Qabilah, Al-Selw targeted for rehabilitation to enhance community water security | Photo Credit: UNDP

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Abbreviations and acronyms

AMICON	Al-Amidah Consult
BMZ	Federal Ministry for Economic Cooperation and Development
BoQs	Bill of Quantities
CCEE	Climate Change, Energy and Environment
CAMA	Civil Aviation and Meteorology Authority
CTG	Committed to Good
CFM	Complaints and Feedback Mechanism
DRR	Disaster Risk Reduction
DAI	Directorate of Agriculture & Irrigation
ERA	Integrated Water Resources Management to Enhance the Resilience of Agriculture and Food Security
ESMF	Environmental and Social Management Framework
ESMPs	Environmental and Social Management Plans
ESGCoP	Environmental and Social Good Code of Practices
ESF	Environmental and Social Framework
E&S	Environmental and Social
FCV	Fragility, Conflict and Violence
FGDs	Focus Group Discussions
GCF	Green Climate Fund
GIS	Geographic Information System
GRM	Grievance and Response Mechanism
GBV	Gender-based Violence
GMF	Gabion Mesh Factory
GWGIs	Government Water Governance Institutions
HDPE	High-Density Polyethylene
HSSE	Health, Safety, Social and Environmental
IND	Institutional Needs Assessment
IWRM	Integrated Water Resources Management
IDPs	Internally Displaced Persons
IGW	Irrigation Gates Workshop
KfW	Credit Institute for Reconstruction (Kreditanstalt für Wiederaufbau)
LTA	Long-Term Agreement
LTIs	lost-time injuries
LMMPO	Life Makers Meeting Place Organization
LMP	Labour Management Procedures
MDB	Main distribution box
M&E	Monitoring and Evaluation
MoAIF	Ministry of Agriculture, Irrigation and Fisheries

MoPIC	Ministry of Planning and International Cooperation
MoWE	Ministry of Water and Environment
MAR	Managed Aquifer Recharge
MCCBs	Moulded Case Circuit Breakers
MSMEs	Micro, small and medium enterprises
NWSSIP	National Water Sector Strategy and Investment Plan
NGO	Non-Government Organization
NMO	Nahda Makers Organisation
NWRA	National Water Resources Authority
OHS	Operational, Health and Safety
PDM	Post-Distribution Monitoring
PV	Photovoltaic
PVC	Polyvinyl chloride
PLC	Presidential Leadership Council
PTWs	Permits to Work
PPE	Personal Protective Equipment
RP	Responsible Party
RADC	Ras Alqema Development Consultancy
SWAT-HAWQS	Soil and Water Assessment Tool – Hydrological and Water Quality System
SES	Social and Environmental Standards
SEA	Sexual Exploitation and Abuse
STC	Southern Transitional Council
SFD	Social Fund for Development
SMDB	Sub-main distribution boards
SMEs	Small and Medium-sized Enterprises
SOPs	Standard Operating Procedures
ToR	Terms of Reference
TPM	Third Party Monitoring
TBT	Toolbox Talks
UNDP	United Nations Development Programme
WMO	World Meteorological Organization's
WRM	Water Resources Management
WWLGs	Women Water Leadership Groups
WUAs	Water User Associations
YA	Yemen Aid

Project profile

Project name	Integrated Water Resources Management to Enhance Resilience of Agriculture (ERA) and Food Security
BMZ No.	2023.1805.3
Total contribution	EUR 19,000,000
Amounts disbursed	In USD: 5,792,673.08 In EUR: 5,398,778.22 1% Levy EUR: 158,415.84
Amounts committed	Signed agreements with Responsible Party (RPs) to date: USD: \$1,353,788.00 in EUR: 1,253,971.84 Contract Purchase Orders: USD: \$3,273,011.55 in EUR: 3,050,450.67
Amounts remaining	EUR: 13,442,805.94
Implementation period	October 2023 – December 2027
Project location(s)	Tuban and Al-Mosaymer districts in Lahj governorate and Al-Mawaset and Al-Selw districts in Taiz governorate.
Project partners (e.g. other UN agencies, NGOs, private contractors, consultants)	National Ministries of Water and the Environment and of Agriculture, Irrigation and Fisheries, sub-national NWRA and district authorities in both Lahj and Taiz governorates. <i>RPs:</i> Life Makers Meeting Place Organization (LMMPO) Nahda Makers Organization (NMO) Yemen Aid (YA) <i>Contractors:</i> Eram Star for Trading and General Contracting Bin Alwan Contracting Office Atef Alhaboon Foundation for Contracting Mohammed Mogalli Corp Gen Tr & Con Alnasser Centre for Trading Al-Nossari Contracting and Trading Maeen for Oil & Gas Companies Services <i>Consultancy Firms:</i> 3D for Engineering Consultancy and Contracting (3D) Ras Alqema Development Consultancy (RADC) Al-Amidah Consult (AMICON)
Reporting period	01 January 2025 – 31 December 2025
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Chapter 1: Executive summary

The Integrated Water Resources Management to Enhance the Resilience of Agriculture and Food Security (ERA) project completed a transformative phase in 2025. The project progressed noticeably across all of its components, including water infrastructure, hydrological planning, livelihoods, market access, and governance - despite unprecedented and devastating flash floods and operational challenges across Lahj and Taiz governorates.

Climate resilience and infrastructure

Flood control and soil protection (Package 1¹): 87 percent completion in 229 intervention sites (including stone walls, gabion walls/spurs, check dams) in four districts, protecting 192 hectares of farming land and supporting over 2,436 farming households. Due to a significantly higher demand for flood control interventions, the project initiated the assessment of phase 2 of Package 1 in October 2025 to address post-flood recovery, targeting an estimated 4,100 households and 320 hectares of agricultural land.

Water storage rehabilitation (Package 2): Lot 1 was initiated with the rehabilitation of 32 ponds/tanks in Taiz. A sub-package comprising stone wall construction and pond rehabilitation for Al-Selw District was assessed and contracted, with work initiated on 20 October 2025 in 11 protection walls and five community ponds. The assessment of Package 2 Lot2 (involving rehabilitation of two dams in Al-Mosaymer) is under finalization.

Irrigation systems and renewable energy (Packages 3&4): Assessments of these two packages were completed, along with the tendering and contracting processes. Field preparations for rehabilitation of 96 irrigation interventions and installation of 12 solar pumping systems began on 8 December 2025. This is expected to support over 5,000 households and serve over 250 hectares.

Supporting irrigation facilities (Package 5): The assessment of the Gabion Mesh Factory (GMF) and Irrigation Gates Workshop (IGW), including the designs, tendering, and contracting processes were completed. Rehabilitation works commenced for the GMF following the contract award and signature on 8 December 2025. Rehabilitation of the IGW is scheduled to start in January 2026.

Terrace rehabilitation (Package 6): The mapping and implementation of phase 1 was initiated in the last quarter of 2025 for 345 households in Taiz, improving water retention and soil preservation in mountainous areas. Assessment and validation of phase 2 have started.

The Project team also started the assessments of a new package (Package 7) introduced in response to the damage caused to agricultural lands in Tuban as a result of unprecedented flash flood that hit the area in August 2025. Tendering process is expected to commence early 2026.

Hydrological planning and evidence base

The Hydrological Water Balance Assessment for Tuban Catchment was completed, delivering calibrated SWAT-HAWQS models and water balance assessment that identified optimal sites for water harvesting, groundwater recharge, and new hydrometeorological stations. It was accompanied by a technical training for stakeholders enhancing their capacity to utilise hydrological modelling as a water resources management and strategic decision-making tool.

Livelihoods and market access

Individual initiatives: The project supported 1,696 vulnerable households (52 percent women-headed) through tailored agricultural and food value-addition kits, directly enhancing household food security.

Rural market accessibility: The project has completed four road sections (around 385 meters) in Al-Mosaymer and commenced rehabilitation of other 11 rural road sections (around 1,600 meters) in Al-Selw and Al-Mawaset to improve market connectivity for 14,450 farmers and 43,000 households.

¹ Package 1: Flood Control, Soil Erosion Protection and Wadi Training, in Taiz and Lahj.

Package 2-(Lot 1): Rehabilitation of Water Storage Infrastructures, in Taiz.

Package 2-(Lot 2): Rehabilitation of Water Storage Infrastructures (Dams), in Al-Mosaymer-Lahj.

Package 3: Rehabilitation of Irrigation Systems and Supporting Farmers with Modern Irrigations Tools, in Taiz and Lahj.

Package 4: Supporting Farmers Solar Water Pumps, in Al-Mosaymer-Lahj.

Package 5: Rehabilitation of Irrigation Gate Workshop and Gabion Mesh Factory, In Aden.

Package 6: Rehabilitation of Agricultural Terraces in Taiz.

Package 7: Wadi Tuban Flood Response Interventions, in Lahj.

Water governance

The final report of the institutional needs assessment of water structures and institutions was produced in May 2025. The institutional needs are validated for the National Water Resources Authority (NWRA), Ministry of Agriculture, Irrigation and Fisheries (MoAIF), and 46 Water User Associations (WUAs), with procurement plans ready for critical equipment and infrastructure. The project also delivered comprehensive trainings to over 940 (including 343 women) from 46 WUAs and eight government offices, over 79 training rounds covering a wide range of topics including administration, finance, disaster risk reduction (DRR), irrigation, geographic information systems (GIS), and water law. Four Women Water Leadership Groups (WWLGs) (around 120 members) were established in the four targeted districts and provided with technical and leadership training, fostering inclusive governance and community mobilisation.

Monitoring, evaluation, and accountability

The project applied a rigorous, multi-layered monitoring and quality assurance system, combining regular field verification by the project team with continuous technical oversight from the consultancy firm and resident engineers. The firm conducted 420 site visits, verified over 500 material tests, and resolved 19 Non-Conformance Reports (NCRs), ensuring strong compliance with structural standards across Packages 1 and 2.

A first round of third-party monitoring independently verified the quality of 68 intervention sites within Package 1 and provided actionable recommendations that strengthened quality and accountability.

The mid-term evaluation was conducted, confirming the project's stakeholder engagement efforts and evidence-base. Key recommendations prioritised refining the results framework and establishing a comprehensive sustainability plan to ensure long-term institutional continuity and scalability.

The second Project Board Meeting took place on 15 July 2025 and reviewed project progress and emphasised the importance of completing the Tuban Basin hydrological study and agreed on key actions to strengthen coordination and support sustainable water and agricultural management.

The project's annual review meeting was held in Amman on 26 and 27 November 2025, bringing together UNDP and KfW to review progress, reflect on achievements and lessons learnt and discuss the 2026 annual work plan.

Chapter 2: Contextual developments

2.1 General developments

What are important (political/economic/social) developments on national/regional level that are relevant for the Project (e.g. economic recession, elections etc.)	In 2025, Yemen's political landscape remained highly fragmented. Peace negotiations stalled despite international efforts, leaving governance fractured and prospects for a comprehensive settlement uncertain². Economically, Yemen faced severe recession, high inflation, and currency volatility. The Yemeni rial fluctuated sharply, reaching YER 2,905 per \$1 USD in Internationally Recognised Government (IRG) controlled areas before stabilising at YER 1,676 per \$1 USD following policy interventions. This instability was compounded by blocked oil exports and a significant decline in public revenues, which further constrained government capacity. Water and land resources have remained central to conflict dynamics, with control over these assets increasingly weaponized by various actors. Climate shocks such as drought, flash floods and environmental degradation exacerbate scarcity, fuelling grievances and undermining governance³. Humanitarian funding fell to historic lows, leaving critical gaps in assistance as more than 17 million people faced acute food insecurity and approximately 4.8 million remained displaced⁴. Public services, particularly in health and education, continued to deteriorate, deepening the country's socio-economic crisis. Water scarcity and climate-related hazards, floods and droughts, exacerbated vulnerabilities, increasing conflict over resources⁵.
If relevant: What changes with regard to conflict dynamics/tensions have been observed in the country and in particular in the relevant regions/Project location(s). Please ensure that it is in line with information in the Fragility, Conflict and Violence (FCV) matrix in the annex "Update of (FCV) matrix".	Since the 2022 ceasefire, Yemen has seen a reduction in large-scale hostilities, but localized violence and resource-based disputes persist. In ERA Project areas (Lahj and Taiz governorates), tensions are particularly acute around water access. Damaged infrastructure and reliance on costly alternatives have led to frequent community-level disputes, especially during dry seasons. Recent destructive flash floods across the country, have compounded vulnerabilities, and intensified competition over limited resources.

2.2 Sector developments

In 2025, Yemen's water and agriculture sectors continued to operate under severe stress, shaped by persistent political and economic instability, and accelerating climate risks.

² <https://press.un.org/en/2025/sc16143.doc.htm>

³ World Bank: Yemen Faces Severe Economic Crisis and Rising Inflation Amid Declining Aid and Institutional Division <https://www.yemenmonitor.com/en/Details/ArtMid/908/ArticleID/142263>

⁴ WFP Yemen Food Security Update, June 2025 <https://reliefweb.int/report/yemen/wfp-yemen-food-security-update-june-2025>

⁵ Water scarcity and Climate-Related Hazards (Floods & Droughts). Refer to *World Bank Yemen Country Climate and Development Report (CCDR)* <https://www.worldbank.org/en/country/yemen/publication/yemen-country-climate-and-development-report>

Water scarcity intensified due to successive drought periods, damaged water infrastructure, rising groundwater extraction, and seasonal floods. This pressure triggered an increase in localised disputes over water access, especially in rural agricultural areas where demand for irrigation water competes with domestic needs. Climate-related hazards - including widespread flash floods - destroyed agricultural assets, irrigation networks and terraces, profoundly affecting smallholder productivity and food security.

A very relevant example of climate-related shock witnessed within the ERA Project's target areas of Lahj and Taiz was the heavy rainfall and strong wave of flash floods during August and September 2025. Such events caused further erosion of the agricultural lands and damage to irrigation systems.

These sectoral dynamics directly influenced the ERA Project's operational environment and reinforced the importance of integrated water resource management.

Despite these challenges, opportunities emerged through collaboration between government institutions and development partners. The hydrological study for the Tuban Catchment, the preparation for the updated National Water Sector Strategy and Investment Plan (NWSSIP) baseline, and the upcoming water studies in Taiz demonstrate a national shift toward evidence-based water planning. Additionally, synergies with the World Bank and UNICEF programmes have set the stage for stronger coordination on hydrometeorological monitoring, irrigation modernisation, and early warning systems.

Overall, sector developments underscore both the urgency and relevance of the ERA Project's interventions. They highlight the need for resilient, community-driven, and climate-responsive water resource management solutions to safeguard agricultural livelihoods and support long-term stability in Yemen's context.

Chapter 3: Overall coordination and stakeholder engagement

3.1 Inauguration of field activities in Lahj and Taiz

Two inauguration events were held to officially launch the project interventions, one in Tuban District, Lahj governorate, on 20 May 2025, and another in Al-Mawaset district, Taiz governorate, on 25 June 2025. The events were attended by senior officials from MoAIF, Ministry of Water and Environment (MoWE), NWRA, and the Governors' Offices in Lahj and Taiz. With the launch of Package 1 construction works and the initiation of field activities under Outputs 1.2 and 2.1, the inauguration events aimed to strengthen implementation momentum, stakeholder engagement, and coordination at the field level.



Inauguration of ERA field interventions in Lahj, May 2025
 | Photo Credit: UNDP



Inauguration of ERA field interventions in Taiz, June 2025
 | Photo Credit: UNDP

3.2 Second project board meeting

The second Project Board Meeting was convened on 15 July 2025 at the UNDP Office in Aden, bringing together all board members from the MoWE, MoAIF, NWRA, UNDP, and KfW.

In their opening remarks, representatives from MoWE, MoAIF, NWRA, UNDP, and KfW underscored the project's critical role in addressing climate-related challenges, supporting food security, and the importance of the ongoing hydrological study. They stressed that continued coordination is essential for the successful implementation and completion of project activities.

The project team subsequently presented progress updates, detailing achievements under each output and the development of a comprehensive project database. The Monitoring and Evaluation (M&E) section outlined internal and third-party oversight mechanisms, noting the completion of a mid-term evaluation.

An open discussion addressed several key issues, including clarification on the project's balance between irrigation and drinking water, and the urgency of finalising the hydrological study of Tuban Catchment. Participants also discussed the dual-use potential of water infrastructure, recommended replacing traditional canals with modern piping, rehabilitating meteorological stations, and expanding the hydrological study to include the Taiz Basin. The project team confirmed these points align with the planned activities and committed to maintaining close coordination. The following are the key action points:

- Expediting completion of the hydrological study of Tuban and sharing findings with stakeholders.
- Engaging and building capacity of WUAs and agricultural cooperatives.
- Developing a sustainability plan in collaboration with key stakeholders.
- Sharing mid-term evaluation and progress reports with project board members.
- Involving MoAIF's engineers in dam sediment removal assessments in Al-Mosaymer.



IWRM-ERA Project Second Board Meeting, held in Aden in July 2025. | Photo Credit: UNDP

3.3 Coordination and engagement meetings with MoAIF, MoWE and NWRA

Throughout 2025, the ERA Project maintained close collaboration with MoAIF, MoWE, and NWRA to coordinate on and advance execution of the project field activities. Below is an outline of those coordination meetings:

Technical coordination on hydrological study with MoAIF and MoWE – March 2025

On 18 and 19 March 2025, two coordination meetings were held with MoAIF and MoWE to review progress on phase 2 of the hydrological study for Tuban catchment, implemented by MetaMeta and Acacia Water, and to discuss identified water storage infrastructure in Al-Mosaymer district. Both Ministries expressed interest in using hydrological water balance modelling as a decision-making tool. To support this, an online introductory workshop was conducted on 8 April 2025. Regarding infrastructure, MoAIF approved two out of six proposed service dams under Package 2 for Al-Mosaymer district, following a joint field visit with UNDP in February.

Coordination meeting with MoWE – April 2025

On 15 April 2025, UNDP convened a meeting with the Minister of Water and Environment, Eng. Tawfeeq Al Sharjabi, to present an overview of the hydrological model, including selected software, required data, and potential applications for decision-making in the Tuban catchment. The Minister emphasised the importance



Meeting with H.E Minister of Water and Environment
| Photo Credit: UNDP

of ensuring high-quality data, acknowledged existing limitations, and reaffirmed the ministry's full support in securing the necessary datasets.

Post-flood meeting with MoAIF – September 2025

On 2 September 2025, the project team met with Mr. Abdulmalek Naji, Deputy Minister of MoAIF and Head of the Agriculture Office in Lahj, to discuss recent flood impacts and explore response measures. Key outcomes included agreement on a joint field mission to the affected areas within Tuban district. Following the joint visit, the MoAIF formally requested ERA Project support for the assessment and design of flood-damaged infrastructure in Tuban. In response, UNDP developed and advertised a Terms of Reference (ToR) to engage a consulting firm for this task.

The MoAIF further requested UNDP's support in rehabilitating agricultural machinery owned by the MoAIF that has been out of service since 2014.

Meeting with NWRA on capacity building – September 2025

On 14 September, the ERA Project team met with NWRA-Aden to advance preparations for upcoming capacity-building activities. Discussions focused on planning central-level training on water allocation for stakeholders from MoWE, NWRA, MoAIF, and other water institutions, and assessing NWRA's capacity to support governorate and district-level trainings.

Key agreements included:

- NWRA-Aden and MoAIF-Aden will jointly provide trainers for local-level sessions.
- GIS training duration will be extended from Four to 10 days for deeper engagement and practical application.
- NWRA-Aden will mobilise internal resources, including equipment, laboratory access, and training materials.

These efforts form part of a broader strategy to strengthen institutional capacities and promote sustainable water resource management across target areas.

Design review for dam rehabilitation with MoAIF – September 2025

On 22 September, a technical coordination meeting was held with MoAIF to review design progress for rehabilitating two dams in Al-Mosaymer district. UNDP presented findings from its technical assessment, highlighting major challenges such as seepage through dam structures, excessive sediment accumulation, and demolished check dams. Proposed interventions included grouting, sediment removal, and construction of new check dams. MoAIF welcomed the approach and requested additional studies, including a water use analysis and soil profile testing, to ensure the feasibility and sustainability of interventions.



ERA team presenting dam design to MoAIF Officials |
 Photo Credit: UNDP

Package 3 presentation to MoAIF– December 2025

The ERA project team facilitated a kick-off meeting to introduce and present the components of Package 3, “Rehabilitation of irrigation systems and Supporting Farmers with Modern Irrigation Tools”, being implemented in partnership with Yemen Aid (YA). The meeting aimed to strengthen coordination and ensure alignment with national priorities for agricultural and irrigation interventions. Discussions focused on ensuring smooth execution on the ground, addressing logistical considerations, and confirming roles and responsibilities among partners. YA shared a detailed presentation outlining its implementation plan, which was reviewed and endorsed by MoAIF. The meeting set the foundation for effective delivery of project activities aimed at improving water resource management and agricultural resilience in flood-affected areas. The Ministry expressed strong commitment to supporting the initiative and emphasised the importance of timely implementation to achieve tangible results for local communities.



UNDP RP YA presenting package 3 to MoAIF officials |
Photo Credit: UNDP

Meeting with Lahj Governor – December 2025

On 28 December 2025, the ERA Project team convened a coordination meeting with the Governor of Lahj to strengthen collaboration and ensure alignment on ongoing and planned interventions under the project. The meeting aimed to a) provide an update on the status of the ongoing interventions of Package 1 and those planned for phase 2 under this package, b) get the governorate’s approval on the interventions planned for phase 2, and c) reinforce coordination mechanisms with local authorities.



Coordination meeting with the Governor of Lahj, Lahj |
Photo Credit: UNDP

Chapter 4: Project progress against outputs and activities

4.1 Output 1.1: Increased water availability for agricultural production

Activity 1.1.1: Data collection on water resources and existing water infrastructure

This activity served to support efforts aiming at priority identification and validation, gathering data on the project priorities to guide subsequent project interventions. Such data gathering and priority identification have been conducted through workshops and field visits. In addition to the kick-off and inception workshops conducted and reported in 2024, a field visit was organised jointly by UNDP and MoAIF to Al-Mosaymer district in Lahj governorate on 7 February 2025. The site visit aimed to a) gather additional field data, make a visual inspection of the condition of the dams, and assess the feasibility of interventions, and b) identify potential sites for irrigation wells, solar pumps and modern irrigation systems.

Furthermore, the project transitioned from general priority identification to high-precision technical data collection and management. During 2025, the project established a comprehensive data management system for the project intervention to ensure effective monitoring and accountability. These databases feature Geographic Information System (GIS) coordinates of each project site, along with enhanced community details and infrastructure photos. Interactive maps have also been developed for both packages to enhance data visualisation and remote monitoring. Below links to sample of interactive maps developed for Package 1 interventions:

- [Interactive maps for package 1- all districts](#)
- [Interactive map for package 1 interventions of Tuban district in Lahj governorate](#)

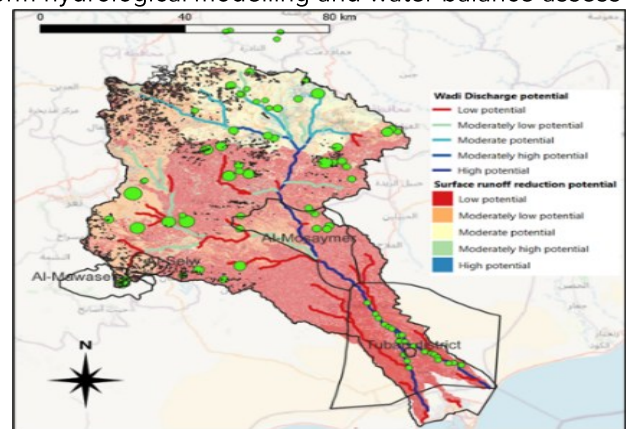
Similarly, internal databases and dashboards were developed for Packages 1 and 2. Dashboards support internal monitoring and visualisation of key indicators such as intervention type and community member details. As part of this activity, support and guidance have also been provided to Responsible Parties (RPs) to improve their data management, validation and reporting. They have been oriented to tools and templates for collecting key data items essential for tracking and verifying the project's results and impact.

Activity 1.1.2: Hydrological water balance assessment for Tuban and 4 sub-catchments

This activity entailed conducting a hydrological study for Tuban catchment and four sub-catchments. To manage time constraints and challenges related to data scarcity, the study was divided into two phases. Phase 1 focused on collecting data from primary and secondary sources and identifying supplementary data to support hydrological modelling and water balance assessments. Phase 1 was completed in November 2024.

Phase 2 of the Tuban hydrological study aimed to perform hydrological modelling and water balance assessments to identify potential areas for surface and sub-surface water storage, as well as groundwater recharge. It commenced immediately after the completion of phase 1 with the advertisement of a request for proposals (RFP). Following evaluation of bids, the joint venture of MetaMeta, Research B.V. and Acacia Water B.V was selected, and the contract was signed with them in February 2025

The study was initially scheduled for five months starting 17 February 2025; however, delays were experienced due to challenges in data collection and the addition of new deliverables. As a result, the study duration had to be extended by four months, pushing its completion to the end of November 2025.



A map shows potential as well as existing water harvesting areas in Tuban. This map is pulled from the SWAT-HAWQS modelling | Photo Credit: UNDP

Key milestones during phase 2 included:

1. A kick-off meeting was convened with the UNDP project team to formally initiate phase 2 implementation. Subsequent inception meetings and consultations were conducted with key stakeholders at national and sub-national levels, including Ministry of Planning and International Cooperation (MoPIC), MoWE, MoAIF, and NWRA. During this period, MetaMeta and Acacia Water developed the phase 2 inception report. The report outlined the methodological framework for hydrological modelling and water balance assessments, the data collection plan, and the stakeholder engagement approach. An introductory technical orientation session was delivered for staff from MoWE, MoAIF, and NWRA to build familiarity with the assignment scope, data collection methods, and planned analytical tools. Following a structured review process, the inception report was finalised in April 2025.
2. Building on phase 1 recommendations to address data gaps, comprehensive data collection was conducted using primary and secondary sources. This included field data collection, GIS digitisation of hard-copy maps, and utilisation and correction of data from satellite and radar sources. A hydrological model was developed, and the simulation results were incorporated into a second deliverable, titled "Hydrological Modelling and Water Balance Assessment of Wadi Tuban." The report presented detailed calculations, simulation results, and climate change scenario analyses. Following stakeholder and academic peer reviews from nominated university professors, the final report was submitted in mid-August 2025.
3. Based on the findings of the second deliverable, potential water harvesting and groundwater recharge sites in Tuban catchment were identified. Thematic maps were produced to illustrate surface water storage and groundwater recharge potential across the catchment and the four target districts. These maps also highlighted prioritised locations for surface water harvesting infrastructure, including dams and ponds as well as areas suitable for Managed Aquifer Recharge (MAR) systems. Additionally, the assessment provided recommendations for the establishment of new hydrometeorological stations to enhance long-term data availability and monitoring capacity. The draft report was presented to stakeholders in October 2025 for review and validation.

4. In response to stakeholder requests and to address challenges related to data collection and analytical capacity, a specialised training course on SWAT-HAWQS⁶ modelling was conducted in Cairo, Egypt, during 13-17 October 2025. The training was attended by 10 participants from MoAIF, MoWE, NWRA, and the universities of Aden and Taiz. The course focused on developing customised scenarios for future water availability and balance assessments, incorporating data from newly established monitoring stations, and fostering collaboration between academia and government agencies to enhance the model through academic research.
5. A final report for the study incorporating stakeholder and UNDP feedback was submitted⁷, alongside six hard disks containing all collected data, maps, and assignment deliverables. The recommended water harvesting infrastructure and MAR systems are expected to improve irrigation water access for targeted community members, reduce groundwater stress, and enhance agricultural water availability, complementing infrastructure rehabilitation efforts under the project. The locations of hydrometeorological stations have also been proposed according to the World Meteorological Organization's (WMO) guidelines.



SWAT-HAWQS Training, Cairo, October 2025 | Photo Credit: UNDP



Introductory Session of SWAT-HAWQS, Aden, April 2025 | Photo Credit: UNDP

The hydrological study for the Tuban catchment will be followed by several key activities:

- **Know your catchment exercise:** A community mobilisation and participatory planning activity which will be conducted in the four target districts by the two RPs in Taiz and Lahj. The exercise aims to familiarise the communities with the hydrological dependencies between the upstream and downstream parts within Tuban catchment using the results of the hydrological study. This exercise is currently underway and is planned to be concluded by the end of February 2026.
- **Installation of hydrometeorological systems:** Two systems are planned to be installed at priority locations in Dukeim and Bila, downstream of the catchment. The feasibility of installing these two systems is currently being assessed.
- **Development of an Integrated Water Resources Management (IWRM) Plan:** This strategic plan will guide future interventions in the Tuban catchment, support decision-making for stakeholders, and facilitate resource mobilisation in this water-stressed catchment. This activity is planned to conclude by May 2026; with potential delays expected due to the ongoing security and political challenges that affect national-level consultations.

The following synergies and coordination efforts have been established with other donors and UN Agencies, Funds, and Programmes:

- The hydrological study will complement the interventions under the World Bank-funded project, "Yemen Improved Water Management and Irrigation for Sustainability and Efficiency." This includes the

⁶ SWAT-HAWQS is a web-based, interactive modelling system for water quantity and quality analysis. It utilizes the Soil and Water Assessment Tool (SWAT), a globally recognized, publicly available model, as its primary computational engine.

⁷ The final report is attached as Annex C.

development of a climate and water information system and watershed management activities. Additionally, coordination will be maintained with the planned Green Climate Fund (GCF)-funded project for national early warning system, which is implemented by the World Bank.

- The ongoing project funded by the Japan Supplementary Fund titled "Enhancing Resilience of Agriculture and Food Security in Yemen" targets the districts of Al-Selw and Al-Mosaymer and includes relevant activities such as developing agrometeorology bulletins and building the capacity of the Civil Aviation and Meteorology Authority (CAMA). This initiative has validated the need for improved meteorological monitoring to support smallholder farmers in adapting to climate change impacts.
- The UNDP project team is coordinating closely with UNICEF regarding the water study in Taiz under the top-up activities of this project. Efforts are underway with the MoWE to ensure the study's scope complements, rather than duplicates, UNICEF's activities.

Under this main activity (1.1.2), the following sub-activities will also be implemented:

- Update of the National Water Sector Strategy and Investment Programme (NWSSIP): This national-level activity will establish the baseline for updating the NWSSIP, originally developed in 2005 and partially updated in 2009. A roundtable discussion for key stakeholders chaired by the Ministry of Water and Environment (MoWE) has been conducted in October 2025 to agree on the geographic scope, baseline year, and sectors to be included in the update.
- Water study for Taiz: A study that will focus on addressing the severe water crisis in Taiz in the context of climate change and climate adaptation. This will be implemented as part of the top-up budget.

Key highlight: Over 600 water and irrigation-related infrastructure sites were assessed through a multi-stage process involving desk reviews, extensive field surveys, geotechnical evaluations, hydrological analysis and stakeholder validation.

Activity 1.1.4: Assessment of water infrastructure and use

During 2025, this activity focused on conducting detailed technical assessments and preparing designs for multiple water infrastructure packages under Output 1.1. These assessments were essential for prioritising interventions, ensuring technical feasibility, and responding to evolving community needs which increased following the severe floods in August 2025.

Assessment of Package 1 (Phase 1)

The year began with the completion of assessments for Package 1 (phase 1), which covered flood control and soil erosion protection interventions in 229 sites across Taiz and Lahj. The process began with site identification and validation workshops in all the four target districts, engaging local authorities, WUAs, and community representatives. Prioritisation criteria include vulnerability to floods, agricultural significance, and technical viability. Following that, UNDP field engineers and consultants conducted ground verification and structural designs. Each assessment included photographic documentation, geographical positioning system (GPS) coordinates, and details of participant households.

Assessment of Package 1 (Phase 2)

Due to high community demand and severe flood impacts, another phase was initiated. Phase 2 assessment followed a modified methodology. The contracted consultancy firm, AMICON, first conducted rapid field scans with local authorities to generate a new longlist of critical sites. This was followed by detailed prioritisation meetings with communities and WUAs to shortlist sites based on: (i) severity of flood/erosion risk, (ii) number of participant households and hectares at risk, (iii) accessibility for construction. The scope of this phase included stone retaining walls, check dams, and gabion structures.

Covering 310 interventions in all the four target districts, phase 2 targets approximately 4,100 farming households and enhance an estimated 320 hectares of agricultural land. The design specifications include 4,413

meters of stone retaining walls, 120 meters of check dams, 2,670 meters of gabion walls, and 160 liner meters of gabion spurs. Technical standards emphasise high-quality galvanised gabion baskets, locally sourced hard stone, and proper drainage systems with weep holes and gravel layers to prevent hydrostatic pressure. As of the end of 2025, AMICON consultancy reached around 75 percent of the assessment and design for this phase.

Assessment of Package 2 and sub-package:

Assessments for water storage infrastructures were divided into two primary lots to address diverse geographic needs. Lot 1, focused on 32 ponds and harvesting tanks in Al-Mawaset and Al-Selw districts. All technical designs were completed by April 2025, prioritising structural reinforcement and storage expansion. In parallel, the assessment for Lot 2, which involves the rehabilitation of two critical dams in Al-Mosaymer district, reached 95 percent completion by December 2025. These designs specifically focus on restoring 18,000 m³ of storage capacity through a two-pronged approach: removing accumulated basin sediment and constructing upstream check dams that serve as silt traps to ensure long-term functionality.

Additionally, another sub-package for Al-Selw district was finalised in July 2025, covering 16 interventions (11 stone walls and Five ponds) designed to enhance water harvesting and protect agricultural land, potentially supporting 860 households and 44 hectares of farmland.

Assessment of packages 3, 4 and 5: Irrigation systems, solar pumps, and workshop rehabilitation

The contracted firm (3D Engineering) initiated the assessment for Packages 3 & 4, reaching around 60 percent completion, but struggled with design development. Upon contract termination, a technical acceleration plan was implemented, disaggregating the assessments as follows:

- *Package 3 (irrigation systems):* Re-scoped to be delivered via YA, an RP, using a design-build modality. The assessment phase under YA involves detailed topographic surveys of existing canal networks, hydraulic flow calculations to determine optimal pipe diameters High-Density Polyethylene (HDPE) vs. Polyvinyl chloride (PVC) and match modern irrigation tools (drip, sprinkler) with specific crop patterns in each sub-catchment.
- *Package 4 (solar pumps):* The technical assessment and design works of Package 4 were delegated to an individual solar engineer, with all activities completed in November 2025.

Package 5: Rehabilitation of the Irrigation Gates Workshop (IGW) and Gabion Mesh Factory (GMF)

IGW: The damage to the workshop was assessed, focusing on the structural integrity of the space-truss roof, the load-bearing capacity required for workshop machinery, and the complete redesign of the electrical system, including Main Distribution Boards (MDBs), Sub-Main Distribution Boards (SMDBs), crane power feeds, to ensure compliance with Occupational Health and Safety (OHS) standards. These assessments and designs were fully completed and shared with the procurement unit in October 2025.

GMF: The assessment of the factory was conducted, focusing on machinery layout, production-line workflow, and power-supply requirements for mesh-weaving machinery. The assessment was fully completed and submitted, together with detailed technical specifications and Bills of Quantities (BoQs), to the procurement unit in September 2025 to facilitate the tendering and contracting processes.

Package 6: Rehabilitation of agricultural terraces in Taiz

Package 6 focused on the rehabilitation of agricultural terraces in Taiz and was implemented through a socio-technical assessment led by UNDP's partner, Nahda Makers Organisation (NMO). The assessment was carried out by an agribusiness engineer supported by eight NMO field consultants and included mapping and classification of terraces by damage level, construction type and current use. A comprehensive stone availability survey was undertaken across all 417 recipient households to determine the presence of suitable stone either on the terrace or within a 100–200 metre radius. The findings were compiled into a stone availability matrix, which showed that only 21.6 percent of households had full stone availability, thereby directly informing both the phased implementation strategy and the stipend-based incentive mechanism. In addition, a hydro-agronomic assessment was conducted to evaluate soil depth, permeability and slope, providing the technical basis for designing terrace rehabilitation measures aimed at maximising rainwater retention and minimising erosion.

Package 7: Wadi Tuban flood response interventions

This assessment concerns irrigation infrastructure in Tuban Valley that was damaged by flash floods in August 2025. Following the flood, the MoAIF requested support from the ERA Project to implement emergency interventions for the affected facilities, including irrigation canals and related water-control structures.

In response, the project team and MoAIF conducted a joint field visit in September 2025 to carry out a preliminary assessment. Based on the findings, a ToR was developed to procure an engineering consultancy firm to conduct the detailed assessment and prepare the required designs. The tender process has been completed, including announcement and evaluation stages, and the final contracting procedures are currently underway. It is anticipated that by mid-January 2026, the contract will be awarded, and the consultancy firm will be mobilised to commence the assessment and design works. The budget for implementing the interventions of this package will be covered from the project top-up funds.

Package 9: Rehabilitation of MoAIF-Lahj heavy machinery

The ERA Project received a formal request from the MoAIF–Lahj Office to assess six non-functional heavy irrigation machines essential for maintaining Wadi Tuban’s irrigation systems. These machines have been out of service due to conflict related damage, long periods of inactivity, and lack of maintenance, undermining efforts to address flooding, sedimentation, and canal degradation.

A specialised mechanical engineering assessment team, led by a senior mechanical engineer, conducted detailed inspections of the machinery in November 2025. The assessment included mechanical diagnostics, engine tests, structural evaluations, and a rapid market survey for spare parts availability and costing. The assessment found that, although some machines are technically repairable, all six were economically unfeasible to restore, mainly due to massive engine, hydraulic, and structural failures, combined with limited or discontinued spare parts availability, especially for older models. In several cases, estimate repair costs exceeded 50–70 percent of the price of new machinery.

The assessment recommended full replacement of the existing fleet with modern, cost-effective brands such as SEM loaders, SANY excavators, and Lovol back-hoes. New machinery will provide higher operational reliability, lower fuel consumption, improved safety standards, and an extended service life of 15–20 years. Investing in such machinery will significantly enhance MoAIF’s capacity to maintain irrigation canals, manage flood impacts, and support climate resilient agricultural systems across Lahj governorate.

Package 9 provides a strong, evidence-based foundation for future investment decisions and directly contributes to the ERA Project’s broader objective of strengthening water resource management systems essential for resilience, agricultural productivity, and food security in Yemen.



One of the MoAIF Lahj-owned machinery assessed by ERA project for potential maintenance support | Photo credit: UNDP

Activity 1.1.5: Construction, procurement and installation of water works

In 2025, the ERA project advanced into a major physical implementation phase, with construction activities launched across multiple infrastructure packages aimed at improving water availability and strengthening climate resilience. Informed by the assessments completed under Activity 1.1.4, the project moved from technical designs to on-site execution, focusing on flood control, water storage, and the modernisation of irrigation systems. By the end of 2025, the project had successfully managed the procurement and commencement of five distinct infrastructure packages across the four target districts.

Package 1 (phase 1): Flood control, soil erosion protection and wadi training

Key highlights: Agricultural land protection works commenced in 229 sites (encompassing 151 gabion walls and spurs, 71 stone walls, and Seven check dams), with over 78 percent completion rate, achieving over 18,000 m³ of protective structures, potentially safeguarding over 192 hectares of agricultural land and supporting over 2,879 245 farming households.

Following tendering and contractor selection processes, field implementation for Package 1 (phase 1) commenced on 19 March 2025 and continued throughout the year. Designed to enhance flood protection and reduce soil erosion, this package comprises 229 individual intervention sites across the districts of Al-Mawaset and Al-Selw in Taiz, and Tuban and Al-Mosaymer in Lahj. It is designed to support over 2,879 farming households by protecting 192 hectares of agricultural land.

The works involve the construction of stone retaining walls, check dams, and gabion structures, with a total exceeding 18,370 m³. These interventions are being implemented by Eram Star for General Contracting (Eram Star), with technical supervision provided by RADC. High quality standards have been enforced throughout, including the use of galvanised gabion baskets, locally sourced hard stones, and weep holes with gravel drainage layers to safely manage hydrostatic pressure. The value of these measures was clearly demonstrated during the severe flash floods of August 2025, when recently completed structures in Al-Mosaymer successfully withstood the impact, while unprotected neighbouring areas experienced significant damage.

Despite substantial challenges, including extreme weather events and supply delays, physical progress reached 87 percent by the end of 2025.



A flood gabion wall in Al-Mawaset district | Photo credit: UNDP.

The construction works include

- 2,292 linear meters of stone retaining walls,
- 77 meters of check dams for slope stabilization,
- 2,406 linear meters of gabion walls and spurs,
- A combined structure volume of over 18,370 m³.

Results in focus: Visual evidence

Beyond numerical achievements, the impact of the project is visibly evident on the ground. The project team systematically documented the construction process from initial stage, through construction, to final completion to ensure accountability and showcase project's tangible results. The following are a selection of those documented results under package 1.



Before implementation



After implementation



Selected photos of flood protection structures featuring the situation before and after in Al-Mawaset and Tuban districts. | Photo Credit: UNDP

For more photos of Package 1 interventions, please see: [More photos of Package 1 interventions](#)

Scope expansion and flood impact

The contract period for phase 1 was initially set at five months, ending on 19 August 2025. Minor early delays occurred due to the late delivery of mesh materials that met the specified technical standards. In addition, as field works started, new priorities emerged to respond to the increasing needs by community, requiring expansion of interventions and updates the designs.

A formal Variation Order was issued to expand the number of sites from 199 to 229, representing a 15 percent increase, accompanied by a 19 percent increase in contract value. Consequently, the contract duration was extended to 19 October 2025 to accommodate the expanded works.

In August, severe flash floods significantly affected progress, damaging eight sites (two fully and six partially). A subsequent field assessment confirmed the need for additional structural works, which were incorporated into the Variation Order.

Delay challenges and accelerative measures

Construction activities faced repeated disruptions due to heavy rainfall, flooding, and challenging access conditions. Works were suspended multiple times, requiring adjustments to the implementation schedule. To mitigate cumulative delays and maintain the quality of outputs, a one and a half month no-cost-extension was granted, extending the contract to 4 December 2025.

On 2 December 2025, the contractor requested a further extension due to:

- the need to relocate and redesign several intervention sites in Al-Makisha village following flood-related terrain changes.
- logistical difficulties in sourcing building stones from seasonal quarries located on private farmlands during the harvest period.

Based on this justification, an additional 16 day no-cost extension was granted, extending the contract to 20 December 2025.

Despite these cumulative extensions, granted in response to environmental challenges and the expanded scope, the contractor, Eram Star, did not complete the works by the final deadline. As a result, UNDP has formally notified the contractor that liquidated damages will be imposed in strict adherence to the contract's terms and conditions.

Package 2-Lot 1: Rehabilitation of water storage infrastructure in Taiz



Two nearby community ponds that will be rehabilitated in Al-Selw district | Photo Credit: UNDP

This package focuses on the rehabilitation of 32 water storage infrastructures across the Al-Mawaset and Al-Selw districts of Taiz. These assets - primarily neglected or unfinished community-owned ponds - serve as critical water-harvesting structures that support local adaptation to drought and the broader impacts of climate change. Following a competitive tendering process, an initial contract was awarded to Bin Alwan Contracting Office on 20 August 2025, with site handovers completed by 30 August. While fieldwork successfully commenced at five of the 32 targeted sites; however, several implementation challenges emerged.

On 15 October, approximately 45 days after the site handover, the contractor suspended all field activities and requested a contract value increase, citing extreme local currency fluctuations. After review, the request was deemed inconsistent with procurement standards.

Following a series of meetings to identify the root cause of the stoppage and a joint assessment of the works already performed, an amicable agreement was reached to terminate the contract with Bin Alwan.

Following the contract termination, UNDP immediately initiated the process of engaging a successor from the original tender evaluation. While the second-ranked bidder declined the engagement due to other ongoing commitments, the third-ranked bidder, Atef Alhaboon Foundation for Contracting, confirmed their capacity and extended their bid validity through 31 December 2025.

Following this confirmation and in adherence to UNDP procurement standards, the firm was officially recommended for the award. The new contract is in the final signature stage, with the site handover and formal commencement of rehabilitation works scheduled for mid-January 2026. Concurrently, a separate contract was awarded to RADC to supervise the rehabilitation works.

One key challenge that may influence the construction schedule of this package is site inaccessibility. A few sites cannot be reached by vehicles, with access limited to within 100–200 meters of the work areas. This logistical constraint necessitates manual transportation of materials, such as by hand carriers or wheelbarrows, which can significantly impact efficiency and construction pace. While these challenges are expected to be actively managed by the new contractor, they still involve delay risks in the implementation.

Sub-package: Construction of stone walls and rehabilitation of ponds in Al-Selw, Taiz (Al-Selw sub-package)

In response to identified critical infrastructure gaps and following a formal request from local authorities in Al-Selw district, a supplemental sub-package was established to meet emerging needs and enhance the overall effectiveness of ongoing interventions. This sub-package complements existing interventions under both packages 1 and 2, ensuring a more comprehensive approach to climate resilience in the area. It involves the construction of 11 stone protection walls and the rehabilitation of five water harvesting ponds. The rehabilitation of the ponds will enhance local water harvesting capacity, supporting drought adaptation and broader climate resilience. The 11 stone protection walls will safeguard agricultural land by improving flood control and reducing soil erosion.



During construction of Al-Hoayd Al-Sofla Pond in Al-Selw District | Photo credit: UNDP

Tenders for contractor selection were issued in July 2025, and the contract was awarded to Mohammed Mogalli Corp. for General Trading and Contracting on 13 October 2025.

The site handover for this sub-package occurred on 20 October 2025, and by late December physical progress reached 28 percent, with work ongoing at six of the 16 sites. Although the implementation period was set to end on 20 January 2026, progress slowed due to difficult terrain and limited access, the time required to ensure Environmental and Social Framework (ESF) compliance and train local labourers, weather-related disruptions from unexpected rainfall, and temporary access restrictions during harvest season. To address these constraints and maintain technical quality, a two-month no-cost extension was approved, shifting the contract expiry date to 20 March 2026. Supervision for the 16 interventions was assigned to RADC, whose lot 1 contract under package 2 was amended to include the additional personnel needed to oversee this sub-package.

For more photos of Package 2 and Al-Selw sub-package interventions, please see: [More photos of Package 2 and Al-Selw sub-package interventions](#)

Package 3: Rehabilitation of irrigation systems and supporting farmers with modern irrigation tools

Package 3 is designed to enhance agricultural productivity and climate resilience through the comprehensive rehabilitation of irrigation infrastructure. This includes rebuilding agricultural canals and extending water pipe networks from harvesting sources directly to agricultural lands. A key component of this package is the transition toward modern irrigation techniques, specifically through the installation of drip and sprinkler systems. By promoting these water conservation technologies, the project encourages the rational use of both seasonal and groundwater resources.

To accelerate the delivery of these interventions, the project adopted a specialised implementation modality by engaging a national RP to manage the full package. Following a competitive tendering and selection process, the contract was awarded to YA on 17 November 2025. Under this partnership, YA is responsible for all phases of implementation, including initial site assessments, technical designs, tendering, contractor selection,

construction supervision, and local capacity-building activities. The engagement is scheduled for a seven-month duration, concluding in mid-June 2026, and covers all four targeted districts across the project area.

Since the official engagement of YA in mid-November, the project has focused on phase 1, which involves the technical assessment and design of 96 proposed intervention sites. Thus far, the achievement rate for this phase has already reached 70 percent. Upon completion of the phase 1 assessment and design, the RP will proceed to phase 2, which includes the tendering process for physical works. This next stage is expected to commence by late January 2026.



An irrigation canal that has gone out of service in Al-Mosaymer district. | Photo credit: UNDP.

For more photos of Package 3 interventions, please see: [More photos of interventions site planned under Package 3](#)

Package 4: Supporting farmers with solar water pumps in Al-Mosaymer

Package 4 aims to enhance agricultural resilience in Al-Mosaymer district by installing solar water pumping systems for irrigation. It involves the installation of comprehensive solar water pumping systems for 12 wells, comprised of photovoltaic (PV) modules, submersible pumps, motors, and advanced inverter controllers.

To ensure rapid execution, the project utilized the Long-Term Agreement (LTA) holder list to select "AlNasser Centre for Trading" as the executing contractor. The official site handover took place on 8 December 2025. The contractor is responsible for the full scope of activities, which includes the installation of solar pumping systems at each well. This encompasses the supply and installation of all components, including PV modules, submersible pumps, motors, inverter controllers, combiner boxes, Moulded Case Circuit Breakers (MCCBs), safety systems, fencing, and mounting structures, as well as end-user training.

Field implementation commenced immediately following the site handover. Within the first 20 days, physical progress has reached 22 percent. The total contract period is set at two months. However, the supervision and monitoring of the installation works will be provided by the UNDP site engineer supported by UNDP Engineering Unit's electrical engineer.

Upon completion, this intervention is expected to directly support approximately 2,450 farming households, supporting irrigation for about 100 hectares of agricultural land. Key outcomes will include increased irrigation coverage, significant reductions in fuel costs and environmental impact, and strengthened community resilience.



Early stage of constructing solar panel mounting structures in Al-Mosaymer district | Photo credit: UNDP

For more photos of Package 4 interventions, please see: [More photos of interventions planned under Package 4](#)

Package 5: Rehabilitation of Irrigation Gates Workshop (IGW) and Gabion Mesh Factory (GMF) in Aden



The Irrigation Gates Workshop, Dar Sa'ad district, Aden, assessed for rehabilitation | Photo credit: UNDP



The Gabion Mesh Factory, Khormaksar district, Aden, before rehabilitation | Photo credit: UNDP

Package 5 focuses on rehabilitating two critical manufacturing facilities belonging to MoAIF to restore their operational capacity for local production. By rehabilitating the IGW and the GMF, the project seeks to establish a sustainable local supply chain for irrigation infrastructure. The scope of work includes comprehensive structural repairs to steel facilities and the installation of new electrical and mechanical systems. These improvements will create a modern production environment, enabling the local manufacture of irrigation gates, spare parts, and gabion mesh, which significantly reduces the agricultural sector's reliance on costly imported components. To ensure specialised management, the package is divided into two distinct components: package 5-A IGW and package 5-B GMF.

Package 5-B GMF: The contract for the rehabilitation of the GMF was awarded to Maeen for Oil & Gas Companies Services on 8 December 2025. Following the formal site handover on 17 December 2025, the contractor has commenced mobilisation and preliminary works. With a three-month implementation timeline, the contractor has initiated field work with activities focused on site preparation and technical assessments.

Package 5-A IGW: The procurement process for the IGW is nearing completion. The contract is currently being finalised with the recommended bidder, Al-Nossari Contracting and Trading. Site handover and the official commencement of rehabilitation works are expected to take place by mid-January 2026.

For more photos of these two facilities, please see: [More photos of GMF and IGW](#)

Package 6: Rehabilitation of agricultural terraces in Taiz

While Tuban district is characterised by flat coastal terrain without terrace formations, and Al-Mosaymer's rocky landscape limits rehabilitation feasibility, agricultural terraces have been relevant for enhancing water retention and soil conservation in the mountainous districts of Al-Selw and Al-Mawaset in Taiz governorate.

A comprehensive technical assessment was conducted between June and August 2025 by a team of eight consultants, in coordination with the district agriculture offices, to map and prioritise terraces for rehabilitation. The assessment focused on terraces located in cultivated and populated areas that had been actively used within the past five years, ensuring both immediate impact and long-term sustainability. Key selection criteria included:

- Partially damaged terraces with stones available on-site or in nearby locations.
- Demonstrated commitment from communities to contribute stones, cultivate the land following rehabilitation, and maintain the rehabilitated structures.

To ensure transparency and local ownership, two joint community committees, one per district, were formed and oriented on selection criteria and how to verify eligibility. Validation workshops were held in July 2025, engaging farmers, WUAs, and local authorities to review and approve household lists and technical designs. Following that, technical assessments and BoQs were finalised and approved by UNDP in August 2025.



Induction workshop on terraces involving WUAs, community representatives, and local authorities, Al-Mawaset district | Photo credit: UNDP

Following UNDP's approval of the technical assessments and BoQs, the RP, NMO, initially pursued a community contracting modality. However, the rehabilitation faced a procurement challenge. The limited tender announced did not attract sufficient bidders to ensure a competitive process. Following consultations with WUAs



An agricultural terrace in Al-Selw district before and after rehabilitation | Photo credit: UNDP

and local authorities, community representatives strongly advocated for a community engagement modality⁸, arguing that it would ensure direct participant engagement, fair compensation for stone collection (which constitutes an estimated 80 percent of the labour), and greater ownership of the rehabilitation outcomes. UNDP approved this modality that was followed by a verification process confirming that only 335 households (from an initial list of 417) had sufficient stones availability on-site. Contracts were signed with the 335 verified participant households (including 29 women-headed households) to commence rehabilitation works of their own terraces.

As of the end of December 2025, rehabilitation works are actively underway, targeting an estimate total of 26,000 square meters of agricultural terraces. Progress varies across sites; with 25 terraces completed, 130 between 61–99 percent complete, 120 between 31–60 percent complete, and 48 at early stages (below 30 percent). Twelve household have not yet commenced work due to personal reasons and have been notified of contractual implications. Payments have been processed for 224 household who reached 30 percent completion, disbursing 60 percent of their contract value. This direct injection of cash into the local economy supports immediate household needs while incentivising quality work.

For more photos of agricultural terraces rehabilitated, please see: [More photos of agricultural terraces in Taiz](#)

4.2 Output 1.2: Improved income from better markets and enhanced agricultural value chain

Activity 1.2.1: Socio-economic analysis around agricultural value-add options

The socio-economic and market analysis was a foundational activity under Output 1.2, designed to identify viable agricultural value-add opportunities and inform subsequent interventions for income generation and food security. Initiated during the last quarter of 2024 by Impact Consulting, the study applied a mixed-method approach combining household surveys, focus group discussions, and interviews with market actors in the four target districts. During the first quarter of 2025, the study was finalised and submitted. The analysis assessed socio-economic conditions of smallholder farmers, women, and internally displaced persons (IDPs), alongside market dynamics, infrastructure gaps, and gender roles in agricultural value chains.

The findings of the study revealed that agriculture remains the primary livelihood source in both governorates, serving as the main source of income for over 70 percent of the population. The study also identified priority value-add opportunities tailored to local contexts. In Lahj, dried and powder onion and lemon processing were found as potential opportunities in Tuban district, while pickled lemon (Oshar), dairy products, and tomato paste in Al-Mosaymer district. In Taiz, Al-Selw district, potential value-add opportunities included peanuts, Harissa sweets, and Oshar, while in Al-Mawaset district honey, Hamadi coffee, and dairy products were identified. Common challenges across districts included water scarcity, poor road infrastructure, high post-harvest losses, and limited access to finance and markets.

The findings of this study also informed the development of community mobilisation plans and district-level matrices of gender-sensitive initiatives under Activity 1.2.2 being implemented through the RPs.

⁸ It's an innovative modality whereby each eligible recipient household is engaged with community to support and execute the rehabilitation works of their own terraces.

Activity 1.2.2: Community mobilisation, prioritisation of small farmers, food gardens and small initiatives

Key highlights:

- 16 participatory workshops were conducted across the four target districts to validate socio-economic findings, prioritize initiatives, and agree on selection criteria of individual support initiative.
- 1,696 households (800 in Lahj and 896 in Taiz - around 52 percent women-headed) were supported with small-scale initiatives including home gardens, beekeeping, livestock, food processing, and agricultural inputs.
- Tailored training and on-site demonstrations were conducted for all 1,696 initiative owners.

This activity, along with the two subsequent ones, were delegated to the two contracted RPs: LMMPO in Lahj and NMO in Taiz. Detailed work plans were prepared, and a kick-off meeting with both RPs was held on 20 March 2025.

1.2.2.A: Sharing of socio-economic survey results in a series of workshops for transparency and validation of results

Community mobilisation and prioritisation of small initiatives was a core activity under Output 1.2, designed to translate socio-economic analysis findings into actionable livelihood interventions. The process began in Q2 of 2025 with preparatory consultations and planning sessions involving local authorities, WUAs, and women's groups. These engagements aimed to ensure transparency, gender sensitivity, and alignment with community priorities.

The RPs organized 16 participatory workshops across the four target districts to share and validate the results of the socio-economic and market analysis study conducted under Activity 1.2.1. Engaging local authorities, WUAs, Women Water Leaders Groups⁹ (WWLGs), and community committees, these workshops served as platforms for identifying feasible agricultural value-add options and agreeing on eligibility criteria for household selection. Discussions emphasised gender equity and inclusion of vulnerable groups, including women-headed households and IDPs. The workshops produced district-level matrices of gender-sensitive initiatives and prioritised interventions such as home gardens, beekeeping, livestock rearing, food processing, and agricultural inputs.

1.2.2.B Identification and selection of households

Following the implementation of the participatory workshops, a bottom-up household identification process was launched. WUAs and WWLGs facilitated initial nominations, which were then verified through field visits by the RPs' consultants and a second-tier review by the RP M&E teams. This rigorous process ensured compliance with targeting criteria and enhanced accountability. In Taiz, 896 households were selected for home garden support, with approximately 45 percent women-headed households. In Lahj, 800 households were verified, prioritising 60 percent women-headed households, 30 percent smallholder farmers, and 10 percent IDPs. The cost of each initiative package ranges between \$ 300-350.

⁹ These women groups were formed under output 2.1 and their early formation facilitated women engagement across all project activities including sub-activity 1.2.2.A.

1.2.2.C Distribution of individual small initiatives support (direct support to women, small farmers and IDPs)

Six qualified suppliers were contracted (four in Lahj and two in Taiz) to supply and distribute procured items to recipient households. Distribution was carried out on batches beginning in late September and continued until the end of 2025. The items provided include home garden kits, beekeeping equipment, agricultural inputs, livestock care and fattening materials, and food processing tools.

The home garden kits consist of a steel frame structure (2.5m x 3m x 7m), polyethylene mesh screens, a 1,000-liter water tank, drip irrigation system components, essential gardening tools and seeds.¹⁰

While in Taiz individual support was focused on home gardens, support in Lahj covered multiple components including agricultural inputs, beekeeping kits, food processing equipment and home gardens.



A household from Al-Selw district reacts happily following receipt of his home garden | Photo credit: UNDP

For more photos of individual small initiatives in Taiz, please see: [More photos of individual small initiatives in Taiz](#)

The number of selected householders and the types of supported initiatives are shown in the table below:

District	Small initiative types	Householders' Number
Al-Mawaset	Home gardens	448
Al-Selw	Home gardens	448
A-Mosaymer	Beekeeping	19
	Livestock	232
	Food processing	12
	Agricultural inputs and home gardens	37
Tuban	Beekeeping	24
	Livestock	363
	Food processing	34
	Agricultural inputs and home gardens	79
Total	5	1,696

On-site awareness sessions and demonstrations were conducted to ensure recipients understood installation and maintenance requirements. This included site-based technical training on home gardening, composting, and integrated pest management. These trainings reinforced sustainability and adoption of improved practices.

¹⁰ In Taiz, distribution of home garden kits was done in two batches. The first batch, done in October, included steel frame structure (2.5m x 3m x 7m), polyethylene mesh screens, and a 1,000-liter water tank. The second was done in December and covered the drip irrigation system components, essential gardening tools and seeds. In Lahj, distribution was first done to 800 recipients and then to 296.

All distributions adhered to strict accountability protocols, including gender-sensitive arrangements, signed receipts, and operational grievance, and redress mechanism (GRM) system. Complaints were addressed promptly, reinforcing transparency and trust.

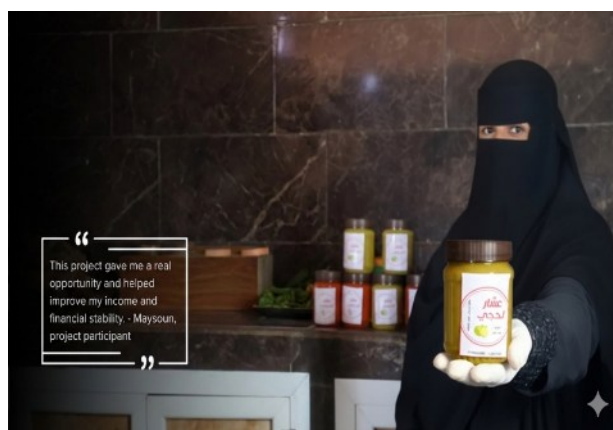
Quality assurance was a cornerstone of implementation. Seeds underwent germination tests in accredited laboratories, fattening components were tested for animal consumption, and beekeeping and home garden kits were inspected by specialists. Food processing equipment was verified against BoQs before delivery. These measures safeguarded input quality and built community confidence.

These small-scale initiatives and micro-enterprises (MSMEs) are expected to strengthen household food security and contribute to improved income opportunities.

Echoes of early impact

By providing agricultural inputs, livestock support, home gardens, and food processing equipment, these targeted initiatives directly assist vulnerable households and have the potential to catalyse significant and lasting change. Through a phased distribution approach, combined with continuous supervision and technical guidance, the support aims to strengthen income-generation and improve food security of women-headed households, small-holder farmers, and IDPs. Although only a few months have passed since the distribution, several project recipients have already reported noticeable improvements in their livelihoods. One female household shared that the assistance she received from the project has enabled her to grow her micro-business. “Utilizing the equipment provided by the project, I expanded my operations from the village level to the district level”, said Maysoun Ali, a micro-food processing recipient in Tuban.

For more photos of individual small initiatives in Lahj, please see: [More photos of individual small initiatives in Lahj](#)



Activity 1.2.3: Implementation of selected food processing and support to enhancing markets

Key highlights:

- 15 priority road sections, totalling approximately 2,000 meters, have been assessed for rehabilitation to improve market access, with work commencing on 4 sections.
- The rehabilitated roads are expected to improve market and service accessibility for over 4,700 direct households.

This activity focused on strengthening agricultural value chains through food processing support and improved market accessibility. In Lahj, UNDP partner, LMMPO, in coordination with WUAs and local authorities, prioritised two agricultural nurseries and the rehabilitation of the Al-Mosaymer vegetable and fruit market.

Agricultural nurseries in Tuban and Al-Mosaymer



MoAIF-managed agricultural nursery requiring rehabilitation, Tuban, Lahj | Photo credit: UNDP

In Tuban district, an assessment confirmed the need to rehabilitate an existing nursery managed by the Agriculture and Irrigation Office to enhance its capacity for producing quality and locally adapted seedlings. In Al-Mosaymer district, a new nursery will be constructed to address the lack of such infrastructure.

These nurseries aim to address the critical gap in access to quality and affordable seedlings for farmers, which is expected to reduce crop failure rates, encourage diversification into higher-value crops, and decrease production costs.

Substantial preparatory work has been completed for both facilities. This includes developing comprehensive operational mechanisms, staffing structures, internal policies, and financial regulations, all reviewed by a legal advisor for compliance. Technical assessments verified critical aspects like water supply and irrigation networks. Technical assessments, BoQs, and drawings have been prepared, submitted for UNDP's review, and subsequently revised based on feedback.

For the new agricultural nursery to be constructed in Al-Mosaymer district, legal relinquishment documentation for the land was secured.

Rehabilitation of Al-Mosaymer vegetable and fruit market

Recognising that centralised marketing is essential for reducing post-harvest losses, rehabilitation of the Al-Mosaymer district market was prioritised. This facility is expected to support over 1,000 farmers and 100 vendors, improving market access, reducing post-harvest losses, and increase trader and farmer incomes once rehabilitated. The market rehabilitation plan involves structural repairs, utility upgrades, installation of solar power, and improved water and sanitation systems.

Detailed assessment, design, and preparatory work for the comprehensive rehabilitation of the Al-Mosaymer market were developed and are now under finalisation. A senior civil engineer was engaged to ensure designs met UNDP technical, social and environmental standards, resulting in detailed BoQs and over 50 technical drawings. Beyond physical plans, the market's existing bylaws were found insufficient. To ensure compliance with legal requirements and sustainable governance and operations, its internal governance rules were comprehensively updated by the RP's project specialists and reviewed by a legal expert.

Furthermore, direct coordination with local authorities secured formal commitments covering critical aspects for long-term success, including their approval for rehabilitation and ongoing management, commitment to water supply, allocation of land for a sewage pit, and agreement to repair neighbouring sewage systems for integration. In late December 2025, the final BoQs, drawings, and technical assessments were completed. Tenders for the two nurseries and market are expected to be announced in the first half of January 2026.



Market building before the rehabilitation in Al-Mosaymer district | Photo credit: UNDP

Rural road rehabilitation and improving market accessibility

A critical component of enhancing agricultural value chains is improving physical connectivity between farms and markets. Under this activity, rehabilitation of rural access roads was prioritised based on community validation and socio-economic assessments.

Targeting criteria were developed in coordination with local authorities and WUAs, focusing on infrastructure linking communities to functional local markets, serving high numbers of recipients, and addressing critical transport challenges.

The selection of roads for rehabilitation and pavement was a participatory process and built on a) the findings of the socio-economic study and district market accessibility plans developed based on those findings, and b) the outcomes of the community validation workshops conducted under activity 1.2.2 A above.



Al-Tanan 2 road- before & after rehabilitation, Al-Mosaymer district | Photo credit: UNDP

In Lahj, roads were prioritised in Al-Mosaymer due to its rugged topography, which frequently isolates farming communities during rainy seasons. Following technical assessments, road resources were concentrated on four¹¹ high-traffic sections in Al-Mosaymer.

Totalling 385 linear meters, those four priority road sections were selected based on traffic volume, safety risks, and their importance for agricultural transport.

Selected roads were:

- Al-Mashraj–Al-Raz’a (60 m)
- Asfal Al-Raz’a (130 m)
- Al-Tanan – Section 1 (85 m)
- Al-Tanan – Section 2 (110 m)

Detailed technical assessments and BoQs were prepared by a civil engineer, reviewed and approved by UNDP before tender announcement.

Execution followed a community contracting modality, where a tender was announced locally, attracting 13 contractors. Two contractors were selected, and contracts were signed, followed by site handover. Work commenced in September 2025 with land levelling and the mobilisation of locally sourced stones. Daily site supervision by a dedicated engineer, supported by regular monitoring from the RP project management, ensured adherence to technical, quality, and safety standards. By the end of December 2025, all four road sections were successfully completed and handed over to the local authorities. The handover ceremonies were attended by the district officials and community leaders. To ensure sustainability, a six-month defect liability guarantee was secured from contractors.



Asfal Ar-Raz'a road- Al-Mosaymer after rehabilitation | Photo credit: UNDP



“The road paving project in Al-Mosaymer significantly improved residents’ lives and made it easier to transport agricultural products to markets. - Afif, Director of Public Works and Roads, Al-Mosaymer District”

These roads have directly eased access to over 743 farming households and are indirectly serving thousands of residents. These roads facilitate connectivity and market accessibility linkages across agricultural value chain actors and elements.

For more photos, please see: [More photos of rehabilitated roads in Al-Mosaymer](#)

Taiz roads: Under planning and assessment

In Taiz, 11 roads, with overall 1,667 linear meters of mountainous roadways, were validated by communities and local authorities and approved for rehabilitation. In Al-Mawaset district, five roads (totalling 827 meters in length) were selected, improving connectivity for over 2,500 households. These roads provide critical linkages to the two key hub-markets within the district, which are Al-Ain and Howban Qadas markets. In Al-Selw district, six roads were selected (totalling 830 meters) directly improving access to over 1,500 households and linking communities to multiple local markets including the district’s main market.

Following the selection process, two civil engineers completed detailed technical studies for each prioritised road. Deliverables included BoQs, assessments of locally available materials, environmental impact reviews, and finalised cost estimates. All technical documents were developed by NMO team and submitted to UNDP for review and approval. The assessments also incorporated social and environmental impact analyses to ensure full compliance with established social and environmental safeguards.

¹¹ Initially, five road sections were prioritized and selected for rehabilitation in Al-Mosaymer district. However, due to the August flood event and the deflation of local currency, resources were sufficient to cover only four out of the five road sections for rehabilitation.

Procurement, contractor selection & initial challenge

A competitive community contracting process was initiated. The selection criteria emphasised cost-effectiveness and geographic proximity, prioritising contractors from the target districts or Taiz governorate. Prospective bidders conducted mandatory site visits during the tender period to ensure informed bidding. The initial tender elicited minimal response from contractors within the two target districts, with only one local bid significantly exceeding the estimate budget. In response, the evaluation committee expanded the pool to include qualified contractors operating within Taiz governorate. Two primary contractors were selected based on technical expertise, cost-effectiveness, and geographic presence within Taiz.

Handover & commencement of works

Official site handover to selected contractors took place in the second week of December 2025 in presence of representatives from local authorities and WUAs, reinforcing community ownership. Construction commenced immediately using a labour-intensive approach, employing unskilled local workers to enhance local livelihood opportunities. Contractors began mobilising stone materials to sites, and samples were tested for compressive strength compliance.



A rural road in Al-Mawaset, Taiz, targeted for stone pavement. The photos also show retaining wall recently constructed by the project illustrating how the project's integrated interventions reinforce one another | Photo credit: UNDP

For more photos of roads planned for rehabilitation in Al-Selw and Al-Mawaset, please see: [More photos of rural roads under rehabilitation in Taiz](#)

4.3 Output 2.1: Improved water governance

Activity 2.1.1: Institutional needs assessment and strengthening of NWRA, WUAs, and Water Committees

This activity aims to strengthen water governance structures at both governmental and community levels to ensure their effective and sustainable contribution to inclusive water resource management. Building on two foundational studies conducted by UNDP –mapping community water structures to support the formation of

new WUAs (conducted in 2024) and assessing the institutional capacity and needs¹² (finalised in 2025) of relevant government institutions – project's RPs have proceeded with validating these assessments and verifying their findings. The primary objective of the validation process was to produce a finalised and prioritised list of institutional needs.

The RPs, LMMPO in Lahj and NMO in Taiz, have completed a comprehensive validation process covering the following structures:

- Government institutions: Two NWRA offices in Taiz and Lahj, two Agriculture and Irrigation Offices at governorate level, and four offices at the district level.
- Community structures: 17 WUAs in Taiz and 29 WUAs in Lahj.

For the government institutions (NWRA and Agriculture & Irrigation Offices), the assessment focused on structural conditions and operational capacity gaps, identified specific needs for facility rehabilitation, furniture, IT equipment, and solar power systems to ensure functional office operations. An additional list of required specialised equipment - such as groundwater monitoring devices, water quality testing kits, and laboratory apparatus - has also been compiled based on the validated list of needs.

For the community-based structures, WUAs, the assessment verified the legal and operational status of each WUA, mapped office locations, and identified precise needs for institutional support. These include the development of governance manuals and operational policies, rehabilitation of WUA offices, and provision of basic operational assets. First drafts of governance manuals and Standard Operating Procedures (SOPs) have been prepared.

Below is a summary of the outcome of this validation process:

Institution type	Specific needs identified
NWRA & DAIs	1. Office rehabilitation: Civil/electrical repairs for buildings. 2. Equipment & furniture: Computers, printers, furniture, air conditioners. 3. Operational tools: Water testing kits, groundwater monitoring devices, GPS units, irrigation maintenance equipment, laboratory tools for water/soil analysis. 4. Energy: Solar power systems for sustainable operations.
Water User Associations (WUAs)	1. Institutional development: Draft governance manuals, SOPs, and financial management guidelines were created. 2. Office rehabilitation: Repairs and upgrades for 29 WUA offices. 3. Operational assets: Provision of basic office furniture and equipment to enable daily functioning.

Specifications and BoQs of identified items have been developed. In Taiz, four tenders were announced for procuring these items, each one for a specific item category. Tender documents for Lahj have been prepared and are currently under review process.

Activity 2.1.2: Training and capacity building of community and government water management institutions and women

This activity aimed to strengthen the technical, organisational, and governance capacities of government and community-based water management institutions for improved, sustainable, and conflict-sensitive water resource management. Based on the Institutional Needs Assessment (INA) and validation, and building on already developed training modules¹³, the RPs in both Lahj and Taiz started by developing capacity building plans for WUAs and Government Water Governance Institutions (GWGIs)¹⁴.

¹² The report is attached as Annex D.

¹³ These training modules were already developed and designed for WUAs under similar project previously implemented by UNDP and other actors.

¹⁴ This mainly refers to NWRA and Agriculture and Irrigation offices in each of Taiz and Lahj governorates.

Capacity building activities in Lahj

In Lahj, the capacity building plan capacitated a total of 495 participants, 204 of whom are women, from 29 WUAs and four GWGLs over 49 training rounds in diverse topics related to water governance.

Led by an institutional strengthening and capacity building specialist, modular training courses were designed for both WUAs and GWGLs. Training materials content was tailored to align with the distinct roles of WUAs, NWRA, and the Agriculture and Irrigation Offices.

Capacity building for Lahj WUAs

The capacity building programme for WUAs covered 14 training courses organised under two complementary thematic training streams: (A) institutional and organisational strengthening, and (B) technical water monitoring and operational capacity.

Stream A: Institutional & organisational strengthening

Under this stream, 10 priority capacity building areas were identified for WUAs, covering administration, financial management, fundraising, DRR, veterinary healthcare, entrepreneurship (project management and feasibility studies), marketing of agricultural products, experience exchange, and food processing opportunities.

Based on that, a phased training programme was delivered to all 29 WUAs across Tuban and Al-Mosaymer districts as follows:

Phase I (July 2025): Focused on core governance courses in administrative management, financial management and accounting, and fundraising.

Phase II (September 2025): Covered DRR, veterinary healthcare, entrepreneurship, marketing, and experience exchange workshops.

Phase III (Nov-Dec 2025): Focused on sustainability, linking WUAs to microfinance institutions through dedicated workshops and introducing the Naseh Digital Advisor Platform to provide ongoing digital expert guidance and support.

Stream B: Technical water monitoring and operational capacity

Under this stream, four priority training courses were identified to strengthen WUAs' capacities in water monitoring and management. Delivered during August- September 2025, these courses focused on:

- Integrated water resources management and irrigation planning,
- Maintenance of modern irrigation systems,
- Water rights and water law, and
- Conflict resolution skills

These trainings aim to enable WUAs to effectively utilise and maintain water monitoring systems and independently manage water infrastructure. Selection of WUAs' participants was finalised in collaboration with WUAs and district councils, ensuring gender inclusion with a minimum of 30 percent women representation.

A key challenge encountered during the initial training activities was the low representation of women in leadership roles within Tuban district WUAs. To address this, the RP collaborated with the Social Affairs and Labor Offices to establish new Women's Councils within Tuban's WUAs and recommended their integration into the WUA's administrative bodies. This initiative was welcomed by all WUAs, and meeting minutes were signed to formalise the process. WWLGs, established earlier under activity 2.1.2 below, played a pivotal role in facilitating women's mobilisation for this purpose.



During training on modern irrigation, Tuban, Lahj | Photo credit: UNDP

Capacity building for Lahj GWGLs

The capacity building for the GWGIs involved seven priority courses. These training courses include:

- Geographic Information Systems (GIS)
- Water quality control
- Climate change and its impact on food and water security
- Monitoring of water stations and wells
- Irrigation systems and dams
- Crop water requirements
- Conflict resolution management

A total of 20 government staff (including six women) from NWRA and Agriculture and Irrigation offices attended the training, enhancing competencies in critical areas of water management and governance.

These courses enhanced participants' capacities in a wide range of areas. As an example, the 10-day GIS training significantly enhanced spatial analysis and planning capacities, while technical courses strengthened competencies in water monitoring, irrigation management, climate adaptation, and water quality assurance. Similarly, the conflict resolution training improved institutional capacity to manage water-related disputes at community and district levels.

	Course title	Number of days
1	Administrative	3
2	Financial management & accounting systems	3
3	Fundraising	1
4	Disaster risk reduction	2
5	Veterinary healthcare training	2
6	Entrepreneurship training (project management)	4
7	Entrepreneurship training (feasibility study)	4
8	Marketing of agricultural products training	2
9	Exchange training workshops	1
10	Conflict resolution skills training	3
11	IWRM training	3
12	Maintenance of modern irrigation systems training	2
13	Water rights and water law for WUAs training	1
14	Food processing opportunities	2

For more photos of training activities in Lahj, please see: [More photos of capacity building and training activities in Lahj](#)

Capacity building activities in Taiz

UNDP's RP in Taiz has engaged a specialised training firm, Triple Nexus, to design and deliver tailored capacity-building programmes for both WUAs and relevant government institutions. In total, 12 specialised training courses were designed and delivered to 465 participants (including 145 women) from 17 WUAs and four GWGIs over 30 training rounds.

Capacity building activities for WUAs- Taiz

For WUAs, a comprehensive suite of nine distinct training courses was delivered to 465 participants (including 145 women). Conducted over 28 training rounds in both Al-Selw and Al-Mawaset districts, these courses aimed to equip WUAs with practical management and technical skills essential for sustainable operational and organisational governance. The list of courses covered wide range of capacity building topics, as detailed below:

1. Fundraising training (one day): Focused on community self-financing and sustainability planning, enabling participants to develop actionable plans for mobilizing local resources.
2. Financial management & accounting (two days): Provided knowledge on establishing formal financial systems, resulting in the development of simplified accounting frameworks with books, records, and files for the associations.
3. Administrative training (three days): Covered governance, human resources, financial and water management, and a rights-based approach. This led to direct support for WUAs in adapting internal regulations, annual plans, and a standardized work report template.
4. Conflict resolution skills (four days): Addressed water-related conflict analysis, mediation, negotiation, and proposal writing. Key outputs included the development of local conflict-resolution initiatives and a standardized project proposal template.
5. Integrated water resources management (three days): Provided technical knowledge on irrigation methods, system operation and maintenance, and water/energy conservation, deepening the WUAs' understanding of their role in sustainable water management.
6. Disaster risk reduction & early-warning systems (two days): Trained participants on flood risk, community-based early-warning tools, and the climate-disaster nexus, culminating in the design of an early-warning mechanism for each district.
7. Veterinary medicine & plants (two days): Promoted animal health using low-cost, natural solutions and local plant knowledge, aiming to build more resilient livestock systems and strengthen collaboration within the WUAs.
8. Maintenance of modern irrigation systems (three days): Offered practical skills in installing and maintaining pressurised irrigation systems (drip, sprinkler), with training outputs applied directly to maintaining local irrigation networks.
9. Water monitoring for WUAs (four days): Established a joint understanding of water quantity and quality monitoring, data management, and water rights, successfully raising farmer awareness and creating mechanisms for community-based water monitoring.

This targeted programme provided WUAs with a complete set of competencies spanning institutional governance, technical water management, social cohesion, and community resilience, directly contributing to more effective and sustainable WUA in Al-Selw and Al-Mawaset.

Capacity Building for GWGIs and local authorities in Taiz

To enhance regulatory oversight and technical support, two advanced specialised courses in Geophysics and Hydrology were conducted for 27 staff (eight women) from NWRA and Agriculture & Irrigation Offices at the governorate and district levels. The geophysics course aimed to orient staff on using geophysical methods to accurately determine well-drilling locations. The course on hydrology equipped participants with advanced skills in groundwater resource assessment and sustainable borehole design and evaluation.

Additionally, 20 staff (five women) from local authorities in Taiz received one 2-day course on conflict management with focus on water-related conflict analysis, climate change impacts, and conflict-sensitive water resource management. The course equipped participants with practical mediation, negotiation, and proposal-writing skills to apply formal and traditional resolution mechanisms, directly enhancing their capacities in leading local conflict-resolution initiatives.

For more photos of training activities in Taiz, please see: [More photos of capacity building and training activities in Taiz](#)

Activity 2.1.3. Women custom made trainings on technical and soft skills and women target initiatives

Key highlights: Four WWLGs were established in the four target districts, comprising 120 members. The groups' members received orientation on their roles, as well as a four-day training on water management and monitoring. 565 women-headed households (290 in Al-Mawaset and 275 in Al-Selw) were supported from a three-day life-skills and entrepreneurial training programme delivered across 23 rounds, strengthening their personal, communication, and decision-making competencies. An additional 828 households (411 men and 417 women) enhanced their technical agricultural skills through a four-day practical training, delivered over 40 rounds, focused on greenhouse management, composting, irrigation efficiency, and improved crop production techniques in both districts.

This activity aims to promote women's communal engagement, strengthen their leadership, technical capacities and soft skills to enhance their meaningful participation in water governance and agricultural livelihoods. UNDP focused on a three-staged approach: identifying and establishing WWLGs, equipping these leaders with specialised technical and soft skills, and mobilising them to lead community-wide awareness and agricultural resilience initiatives.

Identification and formation of women water leader groups (WWLGs)

The process began in Lahj, where the project's RP (LMMPO) undertook a comprehensive mapping of existing WUAs and women-led community structures. This was followed by field verification visits, particularly in Tuban district, for the purpose of getting reliable, up-to-date data on active community structures. This effort resulted in the successful formation of two WWLGs in Lahj, comprising 60 women selected based on their active roles in their communities and structures.

In Taiz, NMO facilitated a series of orientation workshops and community consultations that helped develop transparent and inclusive selection criteria for WWLGs. Through this participatory process, local authorities formally endorsed the nominated women. Currently, these groups serve as the primary platform for advancing gender-responsive water management at the district level.

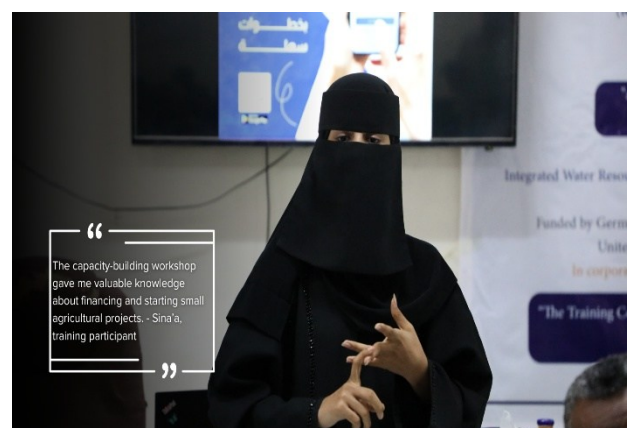
Orientation and foundational capacity building for WWLGs

Once the WWLGs were established, the focus shifted to clarifying roles and strengthening their core competencies.

Role orientation: All WWLGs members participated in orientation sessions. In Lahj, these were held on 26-27 May 2025. In Taiz, sessions were conducted on 20-21 August 2025. During these sessions, WWLGs were briefed on their roles as community catalysts, mentors for female farmers, and leaders of awareness campaigns on agriculture, home gardening, and water management.

Technical leadership training: To build deeper technical capacity, a four day specialised training on water management and monitoring was delivered in September 2025 for all 60 members in Taiz. This training was designed to equip WWLGs with the skills and knowledge to become informed advocates capable of contributing to district level water governance. The training curriculum covered key topics including integrated water resource management, practical water monitoring, water-use efficiency, and gender-inclusive water governance. This equipped women with skills to apply IWRM principles to local challenges, monitor water resources, implement efficient irrigation practices, and take on leadership roles in water governance.

In addition to these targeted capacity-building efforts, WWLG members had also attended additional technical and soft skill training courses delivered to the wider community, as detailed in the sections below.



WWLG-led community mobilisation and awareness

Once equipped with leadership and communication skills, the WWLG members transitioned into their roles as peer educators and community mobilisers. This ‘leadership-in-action’ phase was particularly successful in Taiz, where the WWLGs spearheaded massive, decentralised awareness campaigns. These women leaders organised and conducted 844 community awareness sessions, reaching a total of 14,188 individuals (including over 11,000 women). Sessions involved sharing knowledge on several topics including modern irrigation, sustainable water management, agricultural best practices, and climate-resilient farming. In Lahj, WWLG members have been instrumental in the identification and verification of recipient households of the individual support provided under activity 1.2.2 above.

Soft skill training: Entrepreneurial and life skills for women recipients

In Taiz, a foundational life and entrepreneurial skill development course was delivered to 565 women participants (290 in Al-Mawaset and 275 in Al-Selw). Conducted over 23 training rounds, this intensive three-day programme was designed to provide women with the tools needed to manage both their community roles and their personal agricultural micro-enterprises.

The training curriculum integrated foundational life skills—such as self-awareness, time management, and resilience—with practical agricultural entrepreneurship. Participants were guided through market analysis, financial feasibility studies, and the principles of agricultural marketing.

On-site value-add training

In Taiz, an additional on-site training course was delivered to 828 households who received home garden kits under activity 1.2.2. This intensive four-day on-site training was designed to improve the capacity of smallholder farmers in modern agricultural techniques. The training focused on practical, climate-resilient farming practices, including:

- Compost production and soil health: Hands-on instructions on the fermentation and field application of organic compost to improve soil fertility without chemical inputs.
- Greenhouse and irrigation management: Practical sessions on greenhouse land preparation, soil sterilisation, and the installation of drip irrigation networks to maximise water efficiency.
- Integrated pest management: Training in crop care operations such as pruning and thinning, as well as the extraction of natural pesticides from neem trees.
- Maintenance and post-harvest practices: Guidance on seed production, preservation, and the long-term maintenance of the provided greenhouse infrastructure.



WWLGs-led awareness-raising sessions for women about small initiatives in Tuban | Photo credit: UNDP



On-site orientation on home garden management in Taiz | Photo credit: UNDP



Compost Training in Taiz | Photo credit: UNDP

Chapter 5: Social and environmental safeguards

Please describe all relevant environmental and social aspects	
What activities have been undertaken to assess potential environmental and social impacts?	A project-level Environmental and Social Management Framework (ESMF) was developed at the outset, accompanied with site-specific ESMPs for package 1 which focuses on flood protection, soil erosion protection, and Wadi training. These documents were completed and reported in the previous reporting cycle. Building on that foundation, additional site-specific Environmental and Social Management Plan (ESMPs) were developed during this reporting period for: - Package 2: Rehabilitation of Water Storage Infrastructure (Ponds and Tanks) in Al-Mawaset and Al-Selw districts, Taiz governorate, - Sub-Package: Construction of Stone Walls and Rehabilitation of Ponds in Al-Selw district, Taiz governorate, - Package 5: Rehabilitation of the Irrigation Gate Workshop and Gabion Mesh Factory in Aden Governorate. Furthermore, environmental and social screening, assessment, and classification were undertaken for the intervention “Rehabilitation of Al-Mosaymer Vegetable and Fruit Marketplace” in Al-Mosaymer district, Lahj governorate. Based on the screening outcomes, a site-specific Environmental and Social Good Code of Practices (ESGCoP) was developed to guide the implementation of this intervention in accordance with the project’s environmental and social risk management requirements. Subsequently, the focus shifted to active monitoring of ESMF/ESMP implementation, as detailed in the monitoring section below.
Have any negative impacts materialized in the reporting period?	No
Has the nature or likelihood of any of the documented impacts changed since the last report?	No
Are there any new impacts of the Project that have been detected? What are the mitigation measures for those risks?	No
Which measures have been implemented to prevent or mitigate negative impacts by you or your contractor?	In accordance with the project ESMF, its associated instruments, and the ESMP prepared for each package, all identified environmental and social risks and impacts were managed in line with the requirements of the World Bank ESF and the UNDP Environmental and Social Standards (SES). Risk management was undertaken through continuous supervision, monitoring, and follow-up to ensure effective implementation and compliance with the ESMF, ESMPs, and associated safeguard instruments.

	As part of this process, Contractors were required to develop, disclose, and implement Contractors' Environmental and Social Management Plans (C-ESMPs), including, as applicable: Health, Safety, Security, and Environment (HSSE) Plans; Waste Management Plans; Emergency Preparedness and Response Plans and Procedures; Labour Management Procedures consistent with the project Labour Management Procedures (LMP); and Community Communication Procedures aligned with the project Stakeholder Engagement Plan. Each of these plans incorporates proportionate measures to avoid, minimize, or otherwise manage potential adverse environmental and social impacts. These measures address, inter alia, environmental impacts, OHS risks to workers and communities, emergency incidents, security-related risks, and community and workers' grievances arising from project activities. During the reporting period, implementation efforts focused primarily on Package 1 and Sub-Package on the Construction of Stone Walls and Rehabilitation of Ponds in Al-Selw district (Al-Selw sub-package), Taiz governorate. So far, no significant or irreversible adverse environmental or social impacts were identified. Accordingly, only minor corrective, preventive, and mitigation measures were required and implemented. These measures primarily addressed minor environmental incidents (such as limited oil spills and localized deficiencies in waste management practices), minor OHS issues, and a small number of community and workers' grievances, all of which were managed in a timely manner in accordance with the approved ESMPs and GRM procedures. For detailed information on the identified environmental and social risks and impacts associated with each package, reference should be made to packages' ESMPs-Section five: Subproject-Level Environmental and Social Impacts, Table 6.1: Environmental and Social Impact Analysis Plan and Mitigation Measures, and Table 6.2: OHS Risk Management Plan, as presented in the ESMP of each respective package. In addition, accessible and functional Grievance Redress Mechanism (GRM) for workers and communities, including complaints boxes, phone number and email were established and operated at contractor, responsible party and project management unit levels in compliance with the UNDP accountability and stakeholder engagement requirements.
	Which stakeholder engagement activities have you or your contractor conducted?
	The following is a summary of the key milestones in the stakeholder engagement and public consultation activities:

- February 2025: Two workshops were conducted in the targeted districts (Al-Mawaset and Al-Selw districts – Taiz governorate) to engage and consult stakeholders on the developing Package 2 ESMP, including representatives from local authorities, agriculture and irrigation offices, and relevant community structures.
- February 2025: Public consultations in the two targeted districts for the preparation of the site specific ESMPs for Package 2: Rehabilitation of Water Storage Infrastructure (Ponds & Tanks) in Al-Mawaset and Al-Selw districts, Taiz governorate
- June 2025: Public consultations in the target districts for the preparation of the site specific ESMPs for Sub-Package: Construction of Stone Walls and Rehabilitation of Ponds in Al-Selw District, Taiz governorate
- October 2025: Meeting conducted with MoAIF, the agriculture and irrigation office in Lahj Governorate and local authorities, officials and community structures in the targeted district for the preparation of the site specific ESCoP for the intervention “Rehabilitation of Al-Mosaymer Vegetable and Fruits Marketplace” in Al-Mosaymer district, Lahj governorate.
- December 2025: Meeting conducted with MoAIF, Factory and Workshop Managers - Aden as well as agriculture and irrigation office in Lahj to engage and consult stakeholders on the developed site specific ESMP for Package 5: Rehabilitation of Irrigation Gate Workshop and Gabion Mesh Factory, Aden governorate.

Similar stakeholder engagements and public consultations have been consistently maintained at the local level throughout project implementation. From March to September 2025, the RPs intensively engaged local authorities, community leaders, WUAs, farmers, women, and other community structures across Tuban and Al-Mosaymer districts in Lahj Governorate and Al-Mawaset and Al-Selw districts in Taiz governorate, through a wide range of coordination meetings, public consultations, introductory workshops, and validation forums. These engagements covered key project components including agricultural terrace rehabilitation, alternative flood protection measures, rural agricultural roads, home gardens, food processing centres, agricultural nurseries, and local markets. The consultations introduced the IWRM-ERA project objectives and scope, secured legal approvals and institutional recognition, clarified technical standards, safeguards, and GRM mechanisms, and ensured transparent communication.

Communities actively participated in identifying priorities, validating householder’s lists, confirming intervention sites, and endorsing design options, including adaptive decisions such as shifting from terrace rehabilitation to gabion flood protection where required. Through these processes, strong community ownership, social consent, and alignment with local development needs were established, even in contexts of limited funding and complex operational constraints.

In parallel, gender-focused consultations enhanced women’s participation, raised GRM awareness, and led to the formation of Women Water Leadership Groups, while large-scale community meetings ensured meaningful engagement of women, IDPs, and vulnerable groups.

For more details, please see Annex B: Summary of Stakeholder Engagement and Public Consultations efforts by project RPs.

Chapter 6: Sustainability & operation and maintenance

Please provide an update on O&M, exit strategies and sustainability

What measures were undertaken to ensure long-term financial and tech-

IWRM and Sustainability plans development

nical sustainability and, where relevant, the operation and maintenance of infrastructure? Provide current status of the measures, challenges and measures undertaken to meet these.	The IWRM plan for the Tuban catchment is being developed alongside a Sustainability Plan to ensure the long-term financial and technical sustainability of the project. The IWRM plan will focus on the coordinated development and management of water resources within Tuban catchment in general and with particular focus on the four target districts, addressing financial constraints among government authorities and community structures while also maximizing socio-economic supports and ensuring environmental sustainability. The project's Sustainability Plan on the other hand aims to secure the continuity of the project's outcomes by identifying opportunities and limitations for sustaining support post-project. It will also outline mechanisms for evaluating and monitoring these supports using defined indicators. Both the IWRM and Sustainability Plans are being developed jointly by an international and a national consultant, with a series of stakeholder consultations planned to take place during the last week of January 2026. Rehabilitation of Government-Owned Water Management Assets Currently, the project is investing in the rehabilitation of government-owned assets, including the gabion mesh factory, irrigation gates workshop, and equipment for canal desiltation, to support operational and maintenance activities. The technical assessments for both the GMF and IGW were completed in September 2025. Rehabilitation work on the GMF is underway, while work on the IGW is scheduled to begin in mid-January 2026.
How have relevant stakeholders (e.g. local authorities) and structures been strengthened in the Project and how has this contributed to the long-term sustainability of the Project?	Project activities under output 2.1 emphasize enhancement of water governance by strengthening relevant government institutions and WUAs through targeted capacity-building and training activities. Institutional strengthening of those official and community-level structures aims to help them maintain and sustain the project's results post-completion.

Chapter 7: Monitoring, evaluation, quality assurance, and accountability

The project utilized a structured and multi-tiered approach to monitoring and evaluation, enhancing quality, accountability and transparency. As activity implementation progressed, monitoring, evaluation, and quality assurance measures were strengthened across multiple levels. These include internal monitoring by the UNDP project team, continuous monitoring by RPs during implementation on-the-ground, construction oversight by the supervising consultancy firm, and external verification through independent third-party monitoring (TPM). This multi-layered, multi-source monitoring system enables triangulation and validation of information, thereby enhancing transparency, accountability, and the overall quality and effectiveness of project implementation. Alongside this, the Environmental and Social Management (ESM) measures were also monitored by the consultancy firm, with support from UNDP project team.

7.1 Monitoring through UNDP project team

Regular field visits

To monitor progress and verify quality and compliance, the project team carried out field monitoring visits to project sites on regular basis, as follows:

- 19 May 2025 and 26 June 2025: Two major monitoring missions were conducted to project sites in Al-Mosaymer and Tuban (Lahj) on 19 May 2025 and Al-Mawaset (Taiz) on 26 June 2025. These missions focused on reviewing progress under package 1, including construction oversight, technical verification and quality assessments.
- 9 September 2025: Post-flood rapid damage assessment: Following heavy flooding, a joint UNDP-MoAIF team visited Tuban district to assess flood damage. The visual inspection confirmed significant harm to agricultural lands, embankments, and irrigation infrastructure, underscoring an urgent need for recovery interventions.
- 21 September 2025: Visual documentation and Follow-up: A follow-up mission was conducted to Al-Mosaymer and Tuban to document the status of project interventions after the flood. The team utilised ground-level and drone photography to provide a clear visual record of the infrastructure's state.
- 28 October 2025: A technical monitoring was conducted involving the project management team, civil engineer and social land environmental experts to Al-Mosaymer district. This mission aimed to ensure that planned works—namely roads and vegetable market rehabilitation—met the engineering standards and social safeguarding requirements.
- 5-9 November 2025: The project team conducted field monitoring visits to Taiz governorate to check progress of package 2 of water infrastructure along with activities implemented by the RP. The mission included verification of construction quality, adherence to timelines, and compliance with safeguard measures.

Regular meetings with RPs and contractors

To ensure close and timely monitoring of progress on the ground, regular meetings are organized with RPs and contractors as follows:

- Weekly meetings with each individual contractor.
- Bi-weekly meetings with each RP.

Such regular meetings serve as a key coordination and oversight mechanism, enabling timely review of progress, identification and resolution of implementation challenges, reinforcement of quality and safeguard compliance, and alignment of activities with agreed workplans and timelines.

7.2 Monitoring through UNDP's field consultancy team

To enhance the structural integrity and technical compliance of the extensive physical construction works carried out by contractors in the field under packages 1 and 2, and support quality assurance of activities done by the RPs, the project engaged a specialized engineering consultancy, RADC, to provide comprehensive oversight, supervision, and monitoring services. Serving as the primary oversight body for the contractors' field activities, RADC deployed a team of experienced resident engineers to the target sites in Lahj and Taiz. These engineers are responsible for daily on-site supervision to verify that all construction adheres strictly to the technical specifications and BoQs.

Throughout their assignment, RADC conducted over 420 documented site visits and over 500 laboratory and field tests, issued 19 non-conformance reports and 132 site instructions, and held over 38 technical and coordination meetings with contractor and stakeholders. All identified non-compliances were promptly addressed, and corrective actions were verified prior to resumption of works, resulting in over 18,000 of flood protection structures.



Soil compaction testing (>95 percent) following backfilling and compaction works behind the gabion walls – Taiz | Photo credit: UNDP

In addition, UNDP has deployed two resident engineers, one in Taiz and another in Lahj, who complement the oversight provided by the consultancy firm and the RPs. These engineers strengthen day-to-day monitoring, support quality assurance, and provide technical assistance as needed to ensure that implementation remains compliant with engineering standards and safeguard requirements.

Timely progress monitoring and reporting

To ensure timely monitoring and reporting of the contractors' physical construction progress, the project team developed an online progress tracking tool accessible to the RADC's field team through mobile devices. The tool is updated weekly by RADC team and integrated into internal UNDP dashboard, enabling real-time progress tracking and efficient decision making.

7.3 Monitoring through RPs

Contracted RPs deployed full-time field staff to lead monitoring of project activities at the community level. Guided and supported by UNDP Monitoring, Evaluation and Reporting Specialist, RP-led monitoring focused mainly on process monitoring, including householder verification, monitoring of distributed support, funds and training activities, and maintenance of accountability mechanism. Key monitoring, evaluation and quality assurance efforts led by RPs during the reporting period include:

- September 2025: Householder list verification in Lahj: LMMPO conducted a 20 percent sample verification of all householders lists in Lahj to ensure compliance with the target criteria (60 percent women-headed households, 30 percent smallholder farmers, and 10 percent IDPs).
- October 2025: Verification of home garden recipients in Taiz: Similarly, NMO conducted a verification survey for home garden recipients in Taiz for the same purpose, i.e. verification of selection criteria.
- 27 October – 11 November 2025: During distribution monitoring in Taiz: During the distribution of home garden kits in Taiz, NMO's M&E team conducted during-distribution monitoring (DDM) to verify that all 828 households received inputs of the specified quality and quantity.
- 11 November 2025: Monitoring of livestock input distribution in Lahj: Field teams in Lahj monitored the distribution of livestock inputs to 322 recipients, ensuring the items delivered matched technical specifications.
- 1– 2 December 2025: Post Distribution Monitoring (PDM) in Taiz: The first round of post-distribution monitoring (PDM) was completed in Taiz to assess householder satisfaction and the early performance of agricultural inputs three weeks after delivery. This process serves as a critical feedback loop for project quality.

- **Accountability and Grievance Mechanism (GRM):** To ensure a functional complaints and feedback mechanism, the RPs conducted 62 house-to-house interviews and 16 focus group discussions (FGDs) during the project startup phase. This established a baseline for community-preferred communication channels, ensuring all project recipients have a safe and transparent way to report issues.

7.4 Monitoring of ESMF and ESMPs implementation

During the reporting period, package 1 activities in Al-Mosaymer and Tuban districts (Lahj Governorate) and Al-Mawaset and Al-Selw districts (Taiz Governorate) were implemented in full accordance with the approved district-specific Environmental and Social Management Plans (ESMPs) developed under the project's ESMF. Simultaneously, activities under the Sub-package in Al-Selw district were similarly carried out in compliance with a dedicated stand-alone ESMP prepared specifically for that sub-package.

Overall, Environmental, Social, Health, and Safety (ESHS) performance across all locations of Package 1 in the four districts and the Sub-package in Al-Selw district was satisfactory and aligned with UNDP Social and Environmental Standards (SES), with no major incidents or accidents reported. Continuous monitoring, prompt closure of identified anomalies, and regular coordination with contractors ensured ongoing compliance with ESMP requirements and maintained safe working conditions. Emergency preparedness activities demonstrated active participation in drills, reflecting a general commitment to site safety protocols.

However, some gaps were noted, including the absence of a standby vehicle and limited presence of qualified First Aiders and OHS officers at certain sites. These gaps were formally communicated to contractors with clear corrective measures and deadlines. Despite logistical challenges related to the remoteness and scale of project sites, UNDP consistently enforced minimum compliance standards to uphold worker safety and operational accountability.

Occupational health and safety (OHS)

Performance of OHS across the implementation areas was robust, with works conducted over 710 working days, totalling 133,120 man-hours. The workforce comprised 18,515 workers, with the highest concentrations in Al-Mawaset and Tuban, reflecting the scale of activities in these districts. The Permit to Work (PTW) system was consistently applied across all package 1 districts and the Al-Selw sub-package, with 831 PTWs issued for controlled and high-risk activities, including stone supply to work sites, excavation for gabion foundations, gabion construction (walls and spurs), and backfilling operations.

Nevertheless, 650 anomalies and near-miss observations were recorded and addressed through corrective and preventive actions, demonstrating proactive risk management and effective site supervision.

Additionally, minor non-conformities, primarily related to Personal Protective Equipment (PPE) use and site housekeeping, were systematically recorded, prioritised, and resolved through targeted corrective measures, including the provision of appropriately sized PPE, focused Toolbox Talks (TBTs), reinforced supervision, and follow-up inspections to ensure timely closure.



PPE compliance by workers during Package 1 implementation-
Tuban | Photo credit: UNDP

Environmental performance

Environmental mitigation measures outlined in the package 1 district-specific ESMPs and the Sub-package Al-Selw ESMP were implemented and monitored throughout the reporting period. Overall environmental performance remained satisfactory, with no major environmental incidents reported. Tuban and Al-Mosaymer demonstrated compliance with ESMP requirements related to waste management, record-keeping, and site housekeeping.



Oil spill in Al-Mawaset district was observed during Package 1 monitoring! Photo credit: UNDP

However, one minor environmental incident was reported in Al-Mosaymer, where excavation works for gabion foundations temporarily affected surrounding trees. In Al-Mawaset, minor oil spills and gaps in construction waste management and documentation were observed. All identified issues were formally addressed through non-compliance notices issued by UNDP's safeguarding team, requiring timely corrective actions, adherence to approved waste management plans, and use of designated disposal facilities. Follow-up inspections verified implementation of corrective measures and restored full compliance.

Health, safety, social and environmental (training and capacity building)

In line with ESMP requirements, contractors implemented structured health, safety, social and environmental (HSSE) capacity-building programmes across all districts. These programmes included site inductions for new and rotated workers, Toolbox Talks, and focused training sessions on PPE use, manual handling, heat stress, first aid, safety precautions, housekeeping, emergency response, and social and environmental measures. A total of 106 HSSE training sessions were delivered, reaching 1,897 workers. Training coverage was highest in Al-Mawaset, Tuban, and Al-Mosaymer, while lower figures in package 1 Al-Selw and the Sub-package Al-Selw were mainly due to shorter work durations and smaller workforce deployment. Daily safety communication was reinforced through 639 Toolbox Talks, and 7,584 workers received HSSE induction prior to commencing work, ensuring awareness of site-specific risks, codes of conduct, and GRMs as outlined in the respective ESMPs.

Social safeguarding

Social safeguarding measures were effectively maintained throughout the reporting period with GBV and SEA awareness sessions integrated into regular Toolbox Talks and continued provision of worker welfare measures, reinforcing adherence to project social safeguards requirements.

Overall, the implementation of ESMF and ESMPs across all locations of package 1 and the Sub-package in Al-Selw district was effective, with satisfactory environmental, social, health, and safety performance. Preventive and corrective measures, structured capacity-building programmes, and proactive supervision ensured compliance with UNDP social and environmental standards, minimised risks, and promoted safe and responsible site operations. Minor non-conformities and environmental incidents were promptly addressed, demonstrating a strong commitment to continuous improvement and operational accountability. Ongoing efforts will focus on sustaining compliance, enhancing training coverage in lower-activity sites, and maintaining effective monitoring throughout the remaining implementation period.

7.5 Grievance redress mechanism

To ensure high level of transparency and accountability, the GRM is an integrated component of the project structure, with GRM managed through dedicated channels established by the contractors, RPs, and UNDP. This GRM provided recipients and stakeholders with accessible, confidential, and effective channels to raise concerns, complaints, feedback, or suggestions.

During this reporting cycle, a total of 338 documented cases of complaints and feedback were received, primarily via phone calls and WhatsApp messages. 314 of these cases were handled by RPs, 23 were received directly by UNDP project team.

Those handled through UNDP team covered several issues including labour payment delays (two cases), unfair distribution of interventions (four cases), requests to include additional villages (four cases), land impacts due to project encroachment (one case), concerns related to intervention site selection and work quality (two cases), non-performance of WUAs (five cases), mistreatment of workers (one case), unpaid suppliers by contractors (three cases), use of explosives during quarrying (one case). The majority of these cases was resolved. A limited number of cases (two) related to disputes regarding payments remain under ongoing discussions.

On the other hand, complaints received through RPs related to 'quality-of-item/service delivery' (24 cases), 'householder selection and targeting' (203 cases) and nine other cases. Moreover, RPs also recorded 58 cases of 'suggestions for improvement' and 20 cases of 'appreciation message'.

What these issues looked like and how they were handled

The cases that were recorded under the category of 'householder selection and targeting' included complaints related to removal from householder lists and concerns over eligibility requirements. Responses consistently focused on transparent clarification of targeting criteria and quota limitations, supported by field verification and consultation with WUAs and relevant community leaders. Complainants were informed of the eligibility criteria applied, including land availability, access to irrigation water, household vulnerability levels, avoidance of duplication of assistance, geographic scope of interventions, and any prior support received from other actors.

In several cases, it was clarified that although households met eligibility criteria, limited quotas, budget ceilings, technical constraints, or prioritisation of more vulnerable households prevented their inclusion in the current phase, with assurances provided for potential prioritisation in future interventions where feasible. All 203 cases were closed with complainants confirming satisfaction, demonstrating effective resolution and acceptance of the explanations through the GRM process.

The 'quality-of-item/service delivery' complaints related mainly to plastic water tanks, irrigation components, and training arrangements. Responses included field inspections, coordination with suppliers, clarification of technical specifications, repair or replacement guidance, and confirmation of quality standards, resulting in reasonable satisfaction and closure.

7.6 Third-party monitoring

Following the development and refinement of data collection tools, the first round of third-party monitoring was launched in August 2025 by the third-party monitoring (TPM) agent, Interaction company. This round focused on package 1, which relates to flood control and soil protection interventions. Out of 199 sites, a sample of 67 sites was selected across the four districts. The main objectives for this monitoring round included:

- Technical verification: To physically inspect project sites and verify that the quantity and quality of completed works align with the contracted BoQs and technical specifications.
- Progress assessment: To evaluate the actual on-the-ground implementation status of subprojects against the progress reported by UNDP.
- Environmental and Social (E&S) Compliance: To monitor and verify adherence to environmental and social safeguards, including OHS standards

Data collection was completed during August and October 2025 and was followed by data processing, analysis and reporting.

The draft TPM report was submitted to both UNDP and KfW in November 2025 (see Annex E). Key findings included:

Weather impact: Adverse weather, specifically heavy rain and flash floods during the rainy season, was the primary driver for project delays and work stoppages.

Quantity compliance: Physical verification confirmed that 85 percent (56 out of 66 applicable sites) adhered to the contracted Bill of Quantities (BOQs).

Quality standards: 79 percent (52 out of 66 sites) met the required quality standards.

Identified defects: Six sites were found with defects as they were washed away or damaged by the unprecedented flash floods that hit the project areas during August 2025. Also, four sites did not fully match specifications due to missing expansion joint fillers in walls and around pipe penetrations.

Based on this, UNDP engaged all its technical and engineering teams in reviewing the draft TPM report and provided technical explanations and responses to all key observations. Based on that, necessary corrective actions were taken as recommended to address reported observation and carry out necessary remedies.

Following that, UNDP has requested the TPM agent to send their team again to double check and ensure that those corrective actions and remedies were done as per standards. Follow-up visits were made during the last week of December 2025 for this purpose. Report on this follow-up round of visits is expected to be shared within the first week of January 2026.

Second round of TPM visit is planned to start during quarter 1 of 2026 and will cover the interventions that witnessed advanced progress, as follows:

- Individual small initiatives in the four districts,
- Road rehabilitation in Al-Mosaymer,
- Terrace rehabilitation in Al-Selw and Al-Mawaset,
- Capacity building and trainings for WUAs and government institutions.

7.7 Mid-term evaluation

To ensure the project remains strategically aligned with its core objectives and responsive to evolving field realities, UNDP commissioned a Mid-Term Evaluation (MTE) during the first half of 2025. Conducted by a joint team of international and national experts between April and May, the evaluation provided a rigorous assessment of the project's progress, operational challenges, and strategic direction. The final MTE report was submitted in June and formally shared with KfW on 20 June 2025 (see Annex F).

Key findings and lessons learnt

The evaluation recognized several institutional strengths that have characterized the project's implementation to date:

- Evidence-based programming: The MTE commended the project's substantial investment in early technical assessments and hydrological studies. This robust evidence base was cited as a critical factor in ensuring that infrastructure interventions are technically sound and contextually relevant.
- Stakeholder engagement: The report highlighted the project's inclusive engagement strategy with local authorities and communities as a "best practice," noting that these high levels of trust and coordination have been vital to maintaining implementation momentum despite contextual complexities.

Strategic recommendations and sustainability

The evaluation provided actionable recommendations designed to enhance the project's long-term impact and sustainability:

- Results framework optimization: The report suggested a refinement of the project's results framework to further strengthen SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) criteria, ensuring better tracking of qualitative and quantitative outcomes.
- Comprehensive sustainability planning: A primary recommendation focused on the development of a sustainability roadmap anchored in two pillars:
- Institutional continuity: Defining clear post-project operational and maintenance arrangements with local government and WUAs.
- Scalability: Identifying and documenting successful intervention pathways for future replication and scaling by national partners.

Chapter 8: Communication, visibility and development partner recognition

As field activities commence, the ERA Project is gaining increased public visibility. Below are links to a few local news articles covering different project activities.

- [Ministry of Agriculture discusses flood damage and Tuban project expansion with UNDP](#)
- [Deputy of Agriculture & Fisheries discusses UNDP interventions to reduce flood damage in Aden and Lahj](#)
- [Director of Al-Mawaset inaugurates women leaders workshop](#)
- [Director of Al-Musaymir District meets UNDP IWRM-ERA Project](#)
- [Launch of Soil Protection Project – Tuban & Al-Mosaymer, Lahj](#)
- [Yemen Aid - والتشارك... لا شيء ينجح بدون الاستماع لأهل الأرض، والتشارك | Facebook](#)
- [Instagram](#)

UNDP has published six stories and articles showcasing the project's activities and impact. Below are the links to the stories, available in both Arabic and English.

- [Integrated water resource management towards increased food security in Yemen | United Nations Deve...](#)
- [Shared crisis, different impact | United Nations Development Programme](#)
- [Youth are driving climate action in Yemen, advancing lasting solutions | United Nations Development Programme](#)
- [Youth are the future in Yemen | United Nations Development Programme](#)
- [When water is hard to reach and climate change intensifies by UNDP Yemen - Exposure](#)
- [How climate change undermines every aspect of childhood in Yemen by UNDP Yemen - Exposure](#)

During the reporting period, 56 social media posts across UNDP Yemen's platforms were published to highlight project activities, showcase progress and impact, and mark various international days. In addition, the project's [webpage](#) hosted under UNDP Yemen's website was updated to reflect recent developments. A project fact-sheet and brochure were also developed to support outreach and stakeholder engagement efforts.

The project team continues to work closely with the RPs to produce communication products aligned with the project's priorities and to identify emerging opportunities for strategic visibility and engagement.

Chapter 9: Challenges and mitigation measures

The following challenges and mitigation measures were identified during this reporting period:

Challenge	Mitigation measures
The flood season caused delays in the implementation of field works under package 1 and resulted in damage to agricultural lands and irrigation infrastructure.	• The project team maintained close coordination and follow-up with stakeholders, the contractor, and the consultancy firm to commence construction work in less-affected areas. • UNDP instructed the contractor to mobilize additional personnel to accelerate progress and compensate for the disruptions in the implementation schedule.
Changes in the priority needs on the ground and increasing demands from communities and stakeholders for additional interventions after the flood.	• A joint field inspection visit was conducted with MoAIF-Lahj to Wadi Tuban to assess flood damage. • The project developed new package of interventions for flood-affected areas. • The supervision consultancy firm was instructed to carry out an on-the-ground assessment to re-evaluate the priority of intervention sites.

Community expectations are exceeding project scope, resulting in pressure on field teams and dissatisfaction.	• Maintaining transparent communication on budget and scope. • Building the capacity of WUAs in conflict management and resolution skills. • Community and WUAs leaders are being engaged to mediate and manage expectations.
Delayed and limited feedback from stakeholders on the deliverables of the hydrological study.	• Two academics from Taiz and Aden Universities were engaged to conduct peer reviews. • Comments from the peer reviews were compiled, and a stakeholder meeting was arranged to present the findings.
Low financial delivery compared to the 2025 work plan.	• An Acceleration Plan was prepared to include all possible alternative solutions for each project activity, with particular emphasis on Activities 1.1.4 and 1.1.5, which pertain to the assessment and rehabilitation of water infrastructure. • Redistributed package responsibilities to capable partners.
Subcontracting from outside communities might reduce community engagement.	• Reiterated ESMF requirements to contractors. • Increased monitoring of labour composition. • Engaging WUAs in reporting non-local subcontractors.

Chapter 10: Financial data

Cost and financing of the Project	
Please provide narrative to the cost and financing annex here. Describe if there were any deviations ¹⁵ from the agreed plan, also with regard to infrastructure (unit) costs.	The project was implemented in line with the approved financial plan, with no output-level deviations exceeding the ± 10 percent threshold. Variances occurred at the activity level—mainly due to post-flood scope adjustments, localized increases in construction and logistics costs, and contractor-related delays—but these were absorbed within existing output allocations and did not require any budget reallocation or restructuring. Despite local currency inflation at the beginning of 2025, the overall financial impact on the project was limited and resulted only in the termination of one contract, while the remaining scope was maintained.
Do you project major deviations (more than 10 percent at output level and any changes of cross-sectoral costs) in the future? If yes,	No

¹⁵ Deviations above ± 10 percent on the output level of the total budget require prior consultation and agreement between KfW and UNDP, please refer to the List of Triggers.

please describe including possible consequences. ¹⁶	
Please provide narrative to the time schedule here. Describe if there were any deviations from the agreed plan. ¹⁷	No deviation from the agreed plan.
Do you expect any deviations from the agreed time schedule and what would be the consequences? ¹⁸	No

Below is the financial data as of the end of December 2025:

Budget: EUR 19,000,000

Actual disbursement: In USD: 5,790,325.33

In EUR: 5,396,590.12

Commitments: Signed agreements with RPs to date: USD: \$1,353,788.00 in EUR:1,253,971.84

Contract Purchase Orders: USD: \$3,273,011.55 in EUR: 3,050,450.67

Amounts remaining: EUR 13,603,409.88

¹⁶ Deviations above +/-10 percent on the output level of the total budget require prior consultation and agreement between KfW and UNDP, please refer to the List of Triggers.

¹⁷ Deviations might require prior consultation and agreement between KfW and UNDP, please refer to the List of Triggers.

¹⁸ Deviations above +/-10 percent on the output level of the total budget require prior consultation and agreement between KfW and UNDP, please refer to the List of Triggers.

Chapter 11: Lessons learnt & upcoming activities

Lessons learnt

The following lessons learnt have been identified so far:

- Adaptive management is critical in flood-prone areas: Flood events required quick redesigns, variation orders, and extensions; introducing a flood-response sub-package ensured continued delivery.
- Layered monitoring and safeguards enhance quality and compliance: Combined oversight (internal, engineering firms, TPM, HSSE/ESMF) enabled early issue detection and corrective action.
- Women's leadership structures increase inclusion and impact: WWLGs strengthened women's participation, community mobilization, and gender-responsive outcomes.
- Community engagement through WUAs promotes transparency: Involving WUAs in validation and grievance processes reduced community tensions and improved trust.
- Phased contracting and flexible modalities speed up delivery: Use of LTAs, community contracting, and staged supervision allowed faster mobilization while ensuring oversight.

Chapter 12: Annexes:

Annex A: Results Matrix

Annex B: Summary of stakeholder engagement and public consultations by RPs

Annex C: Hydrological Study of Tuban Basin

Annex D: Institutional Needs Assessment of Government Water Management Structures

Annex E: Third Party Monitoring Report

Annex F: Mid-term Evaluation Report