

**PROJECT DOCUMENT****[Yemen]****Project Title: Integrated Water Resources Management to Enhance Resilience of Agriculture (ERA) and Food Security****Project Number:****Implementing Partner: UNDP****Start Date: 19.10.2023****End Date: 19.10.2026****LPAC Meeting date: 5 September 2023****Brief Description**

The overall development challenge in this project is increased risk of food insecurity, disasters, water scarcity and water-induced conflict exacerbated by the lasting war.

The overall objective of the project is for Poor Yemenis whose livelihoods depend on primary water sources for productive uses to be able to enhance their livelihood resilience through the development and rehabilitation of water infrastructure enhancing water availability in support of sustainable agriculture, implemented at key priority areas within a catchment.

This objective of this 3 year-project will be achieved by investing in new water harvesting infrastructure aimed to augment existing supplies to efficiently capture surface water as well as sustainable groundwater such as small to medium surface and subsurface dams, dykes, weirs, etc. The objective will also be achieved by rehabilitating existing damaged or unmaintained infrastructure which could include community cisterns, shallow wells, canals, soil erosion control measures, bank protection, low-tech agricultural infrastructure, flood protection structures (gabions, terraces, and embankments).

Sustainability of water resources made available from this project will be ensured by adopting Integrated Water Resources Management (IWRM) strategies such as treating water resources as a single discounted resource (surface and groundwater) managed within their naturally occurring catchments in a coordinated manner between various sectors and levels of administrations or jurisdictions while ensuring that women are an important shareholder as a user and decision maker. New infrastructure planned will be based on catchment natural water availability assessed to ensure sustainability. It will also seek to alleviate poverty by creating additional income generating opportunities achieved by initiating small value adding activities to agricultural products in the various locations such as fruits and vegetables, milk products, edible oil seeds, milled rice, flour, tea, coffee, pulses, spices, honey; respectively, as well as enhancing market accessibility equitably to local communities. The participatory nature of project implementation such as in the prioritisations for rehabilitation sites, site selection for new infrastructure, participatory catchment planning, 3D modelling, etc that will contribute to empowerment of stakeholders specially women, trust building, and social cohesion. Sustaining the infrastructure is an integral aim for sustainable agriculture and will be fulfilled by creating the enabling environment for local management of assets including institutional strengthening of both public national, provincial and district partners as well as local water related community-based structures such as Water User Associations, Water and Village Committees. The total number of beneficiaries can reach up to 70,569 individuals; 37,123 of whom will be women in 4 provinces located within the Tuban catchment equally shared between the two governorates of Taiz and Lahj. The project will also contribute to generating new knowledge of the Tuban catchment as a whole and provide understanding of its water resources importance in regional and local planning in the respective governorates; Ibb, Taiz and Lahj for sustainable development and stability in Yemen.

The project will be implemented in Taiz and Lahj governorates with two districts each: Al-Mawaset and Al-Selw districts in Taiz and Al-Mosaymer and Tuban districts in Lahj. The project will be implemented in partnership with the Ministry of Agriculture, Irrigation and Fisheries, the Ministry of Water and Environment represented by NWRA, Water Users Associations, other water related community and village committees, and UNDP responsible parties (NGOs).

The project aims to achieve two key outcomes: Outcome 1: Enhanced livelihood resilience and agricultural production, and Outcome 2: Enhanced water governance with active involvement of local communities in decision-making processes.

Accordingly, two outputs will contribute to the first outcome:

Output 1.1: Increased water availability for agricultural production

Proposed Activities:

1. Data collection on water resources and existing water infrastructure,

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2. Hydrological water balance assessments for Tuban and 4 sub-catchments, terraces flood mitigation potential and water retention, water allocation,
3. Workshops to identify potential water infrastructure works for interventions,
4. Assessment of water infrastructure and use,
5. Construction, procurement and installation of water works.

Output 2.1: Improved income from better markets and enhanced agricultural value chain

Proposed Activities:

1. Socio economic analyses around agricultural value add options in identified sub-catchments,
2. Community mobilisation, prioritisation of small farmers and women food gardens and local government planning support of small initiatives,
3. Implementation of selected food processing support and initiatives to enhance markets accessibility.

Outcome two of the project has one output as follows:

Output 2.1: Improved water governance

Proposed Activities:

1. Institutional needs assessment and strengthening of NWRA, WUAs and water committees,
2. Training and capacity building on building and sustaining an organisation, equity in allocations, water monitoring, compliance and enforcement of water management, food processing, marketing, etc,
3. Women custom made trainings on technical and soft skills, public speaking, and women targeted initiatives.

Contributing Outcome (UNSDCF, CPD, RPD):
(UNSDCF¹) Outcome 1; “By 2024, people in Yemen, especially women, adolescents and girls and those in the most vulnerable and marginalized communities benefit from better, equal and inclusive access to nutritious food, sustainable and resilient livelihoods and environmental stability.”
UNDP Strategic Objective:
Structural transformation accelerated, particularly green, inclusive and digital transitions.²
GEN2

Total resources required:	³USD 16,094,420	
Total resources allocated:	UNDP TRAC:	
	Donor:	USD 16,094,420
	Government:	
	In-Kind:	
Unfunded:	USD 0	

Agreed by United Nations Development Programme (UNDP)

	<p>DocuSigned by: <i>Zena Ali Ahmad</i> A9BC21BC549E43F...</p> <p>Zena Ali Ahmad Resident Representative</p>	
	Date: 6 September 2023	

¹ https://unsdg.un.org/sites/default/files/2022-06/Yemen-Cooperation_Framework-2022-2024.pdf

² <https://www.undp.org/yemen/publications/country-programme-document-cpd-2023-2024> (accessed 17 May 2023).

³ UN prevailing rate of exchange as of 1 June 2023 USD 1.00 equivalent Euro 0.932 (Equivalent to the 15 million Euros)

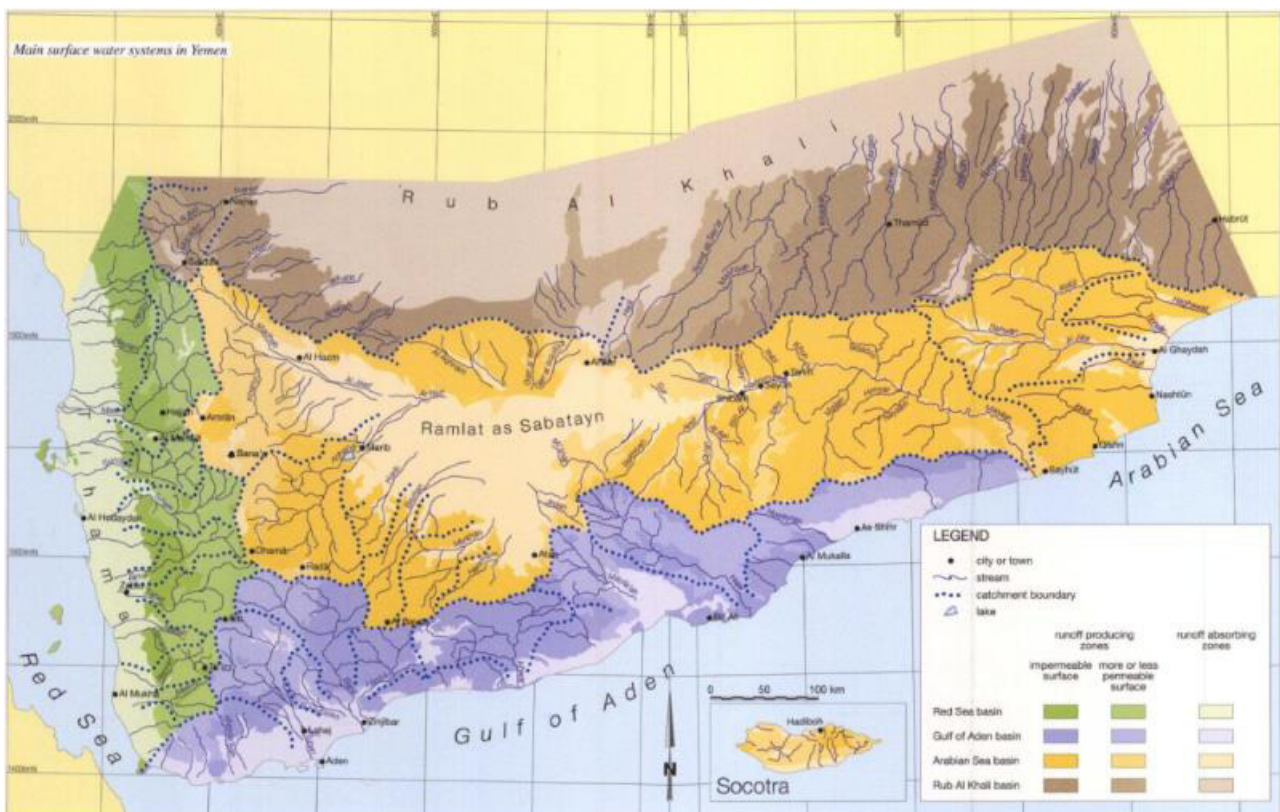
I. ACRONYMS

Acronym	Term
CPD	Country Programme Document
CSO	Civil Society Organisation
DIM	Direct Implementation Modality
ERA	Enhancing Resilience of Agriculture
ERRY	Enhanced Rural Resilience in Yemen
ESMF	Environmental and Social Management Framework
GEN2	Gender Marker 2
IRG	Internationally Recognised Government
IWRM	Integrated Water Resources Management
MoAIF	Ministry of Agriculture, Irrigation, and Fisheries
NGO	Non-Governmental Organisation
NWRA	National Water Resources Authority
NWSSIP	National Water Sector Strategy and Investment Programme
OAI	Office of Audit and Investigations
OHS	Occupational Health and Safety
PAC	Project Assessment Committee
RPD	Regional Programme Division
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
SIERY	Strengthening Institutional and Economic Resilience in Yemen
ToTs	Training of Trainers
TPM	Third-Party Monitoring
UNDP	United Nations Development Programme
UNDSS	United Nations Department for Safety and Security
UNSDCF	United Nations Sustainable Development Cooperation Framework
UNSMS	United Nations Security Management System
UXO	Unexploded Ordnance
WAPOR	Water Productivity Open-access Portal
WMIs	Water Management Institutions
WSSP	Water Sector Support Programme
WUAs	Water User Associations

II. DEVELOPMENT CHALLENGE

The ongoing humanitarian crisis in Yemen, conflict, severe economic decline, and collapsing essential public services have taken an enormous toll on the Yemeni population, exacerbating existing vulnerabilities. By the end of 2022, more than two-thirds of Yemen's population (21.6 million people, including 12.9 million children) required humanitarian assistance, whilst an estimated 4.5 million people were internally displaced.⁴ The loss of livelihoods, displacement, and increased water and food insecurity are only some of the negative impacts related to water scarcity in the country.

Water scarcity in Yemen has been a long-lasting and ever-accelerating issue with a multitude of social and economic effects. Two-thirds of the country is classified as hyper-arid with less than 50 mm rainfall per year, and most of the rest is classified as arid with less than 200 mm rainfall.



Topographic map of Yemen, Van der Gun, & Ahmed A., (1995). "The water resources of Yemen", Report WRY35, TNO, Delft.

Average annual rainfall above 250 mm is only found in the western mountainous regions, where most of the population is concentrated, with some areas receiving 800 mm. The population of Yemen is estimated at 30 million, of whom 74% live in rural areas. Yemen's population grew almost five times in half a century (~6 million in 1970 to almost 30 million in 2020). With climate change, the amplifications and recurrence of droughts and floods are predicted to be increasing with overall inconclusive rainfall projections, with some models projecting increases in rainfall while other models project decreases.⁵ Because the terraces on the slopes fall into disrepair, or are abandoned, runoff is increased, which not only erodes the slopes but leads to destructive floods to the wadi bed.⁶ Due to the lack of adequate water harvesting and storing

⁴ UN Country Results Report, 2022.

⁵ Haidera, et al. 2011. Water scarcity and climate change adaptation for Yemen's vulnerable communities. Local Environment.

⁶ Mohamed A. Al-Hebshi, undated. The Role of Terraces on Land and Water Conservation in Yemen.

infrastructure most farmers lost their first planting season in the first half of 2022, with one-third of households reporting reduced planted area.⁷

Past hydrological assessments revealed that the total water yield for Yemen was 2.1-2.4 billion m³ in the 1980s.⁸ Demand estimates in the 2000 base year are as high as 3.4 billion m³ per year, showing increased demand that significantly exceeds supply in many catchments.⁹ Approximately 30% of Yemen's total freshwater withdrawal is derived from surface water, and about 70% is derived from groundwater, 90% of which are used for agriculture. Nationwide, irrigated areas have expanded from 37,000 ha to more than 1,000,000 ha between 1970 to 2004 which depend on groundwater.¹⁰

With the war and past institutional failures, Yemen's ability to combat water and food insecurity faces five major challenges:

- over exploitation of groundwater and the lack of investments in renewable water harvesting,
- neglecting traditional terraces,
- limited coordinated planning and water allocations,
- lack of investment in agricultural value adds and market accessibility,
- inadequate water governance for managing water and related infrastructure and unsatisfactory women participation.

Due to historically limited investments in harvesting surface water and the destructive war, Yemen has overexploited its groundwater sources considerably over the last 50 years.¹¹ Agriculture, as the main livelihood mode for more than 80% of Yemini, uses 90% of overall water use;¹² 40% of which is sourced from groundwater, 50% is rainfed and 10% from surface sources. As a result, the deep non-renewable water resources created by nature over 10,000 years have been largely depleted while 20-25% of the arable land is in mountain terraces.

The UNDP Strategic Framework, 2022 clearly shows that Yemen is rapidly approaching an era where only renewable water resources will be accessible and accordingly surface water harvesting infrastructure should be prioritised over those dedicated to further exploitation of deep groundwater. The harvesting of renewable surface water resources has several benefits. Firstly, it can increase the availability and accessibility of water resources, particularly in areas where groundwater sources have been depleted or are not easily accessible. This can help meet the increasing agricultural water demand and allow groundwater sources to be dedicated to supplementing irrigation and domestic needs. Secondly, interventions like rehabilitating wadi banks and traditional terraces can increase resilience to climate change and variability by reducing the vulnerability to droughts and floods and improving water security in the long term. Thirdly, these interventions can generate employment opportunities and contribute to the local economy, particularly in rural areas. Finally, renewable water harvesting interventions can also promote environmental sustainability by conserving water resources, reducing land degradation, and maintaining ecosystem services.

The terrace cultivation in Yemen is considered an important national heritage. From a technical point of view, terrace cultivation is an advanced nature-based farming system for soil and water harvesting and conservation confined in mountainous areas of Yemen. During the last sixty years, the Yemeni society has faced many social and economic changes and evolution, which negatively affected terrace cultivation such

⁷ *ibid*

⁸ [Yemen country information](https://undparabic.exposure.co/qattocoffee-for-climate-resilience-and-human-security-in-yemen), Climate Change Knowledge Portal, World Bank (19 July 2020) accessed in <https://undparabic.exposure.co/qattocoffee-for-climate-resilience-and-human-security-in-yemen>

⁹ National Water Sector Strategy and Investment Program (NWSSIP), Republic of Yemen, Ministry of Water and Environment, 2004.

¹⁰ UNDP, 2021. Water Availability in Yemen.

¹¹ UNDP, 2022. A Holistic approach to addressing water resources challenges in Yemen.

¹² Noaman, A., Al-Nozaily, F.A. and Al-Mashreki, M.H. (2021). Yemen country file. Fanack Water. <https://water.fanack.com/yemen/>.

as oil discovery which made groundwater abstractions more desirable. The absence of regular maintenance is one of the most crucial factors of terraces abandonment. As the terraces on the slopes fall into disrepair or are abandoned, runoff is increased, which not only erodes the slopes but leads to destructive floods to the wadi bed.¹³



Photo: abandoned terraces, Taiz governorate, Eiman Karar, March 2023

Water allocations to surface water are different from groundwater which is usually considered as private property in the farms. The National Water Resources Authority (NWRA) in consultation with the Ministry of Agriculture issue permits for drilling. Surface water allocations, on the other hand are largely governed by traditional water rights that are embedded in the current water law of 2002. Although, the main rule, which is 'allala fa allala' excessively favours the elite owners upstream, disenfranchising the more modest farmers downstream and resulting in the impoverishment of rural farmers.¹⁴ Coordinating water use and planning across levels of jurisdiction is well articulated in the water law of 2002, which includes provisions for licensing and registration requirements for wells and rigs with more strict controls on stressed catchments. Sectoral water demands are all included in the National Water Sector Strategy and Investment Program (NWSSIP) which has been revised twice thus far in 2004 and 2007. The Water Sector Support Programme (WSSP), headed by the Minister of Water and Environment, coordinates water demands at a national level and includes all such allocation decisions. Water demands are collated from every sector at each governorate, either through water groups or water users and basin committees.

The law also supports decentralization through the establishment of basin committees that work closely with local Councils in implementing water resource management plans. Nonetheless, the basin management approach is hardly fully implemented in any of the water catchments mainly due to NWRA's weak coordination with local councils that have strong links with local management organizations such as Water Users Association (WUA) which could potentially be delegated many of the water management functions.

¹³ Mohamed A. Al-Hebshi, undated. The Role of Terraces on Land and Water Conservation in Yemen.

¹⁴ UNDP, 2022. A Holistic approach to addressing water resources challenges in Yemen.

In the efforts to enhancing livelihoods resilience, positive lessons are learnt from the Enhanced Rural Resilience in Yemen (ERRY) on adoption of various agricultural value add initiatives combining the traditional role of WUAs in water resources management to agricultural production domain. Hence, farmers will be more motivated to become closely involved in the operations of the WUAs as it will not only monitor the water resources management to reduce depletion within the project area but the WUAs will also act on behalf of farmers to improve their crop production system and directly affect their net farming revenue.

Participation of women in water resources and in the activities of WUAs in general has been a concern for some time. This could be attributed to the fact that less than 1% of agricultural landholders are women in Yemen.¹⁵ Despite this, rural women account for about 80% of the labour force.¹⁶ Because agricultural gender inequalities remain strong, women farmers are particularly at risk of hunger, especially when a crisis strikes. Women have a major role in agriculture, providing 60% of labour in crop farming, 90% in livestock rearing and 10% of wage labour.¹⁷ Despite their crucial roles in household food security, they face discrimination and limited bargaining power. Patriarchal norms create disadvantages for women farmers, specifically in land rights (small plots, difficulties attaining ownership, discriminatory inheritance rights), productive resources (no access to credit, extension services or inputs), unpaid work, insecure employment and exclusion from decision making and political representation.¹⁸

III. STRATEGY

The proposed “Integrated Water Resources Management to Enhance Resilience of Agriculture (ERA) and Food Security is a three-year project of the UNDP which seeks to build on the contemporary water knowledge accumulated from the last two most recent water assessments: [Water Availability in Yemen](#) and the [UNDP Strategic Water Framework](#) to start a fundamental shift in water projects focusing on developing and augmenting the water infrastructure for enhancing food security through the sustainable harvesting of renewable water resources and allowing groundwater sources to regenerate.

The project is informed by the UNDP Country Strategy Note 2021 to 2023, which has an overarching focus on food security. It will directly contribute to achieving the 2022-2024 United Nations Sustainable Development Cooperation Framework (UNSDCF) Outcome 1: “By 2024, people in Yemen, especially women, adolescents and girls and those in the most vulnerable and marginalized communities benefit from better, equal and inclusive access to nutritious food, sustainable and resilient livelihoods and environmental stability”. This is also confirmed by a recent report of the Conflict and Environment Observatory, 2020¹⁹ that the key conflict-related distress to agriculture includes: direct attacks on farms and agricultural infrastructure, the economic war and war economy reducing access to water, agricultural inputs and markets, and the collapse of governance.

The project will respond to the above challenge by enhancing water availability/accessibility and increasing food security to highly vulnerable families identified in selected sub-catchments based on hydrological assessments within the Tuban watershed by implementing water harvesting infrastructure as well as rehabilitating water distribution and groundwater recharge potential to benefit the most vulnerable

¹⁵ OCHA, undated. Gender considerations in the Humanitarian Response in Yemen. <https://response.reliefweb.int/yemen/gender-considerations-humanitarian-response-yemen>

¹⁶ Women National Committee, The Supreme Council for Women, Republic of Yemen; Report on Status of Women in Yemen, 2022.

¹⁷ UNDP, 2021. Yemen Food Security Response and Resilience Project (FSRRP).

¹⁸ ibid

¹⁹ Conflict and Environment Observatory (CEO), 2020. “Yemen’s agriculture in distress”. <https://ceobs.org/yemens-agriculture-in-distress/>

households in the targeted areas. Rehabilitating traditional water harvesting terraces may seem backward looking but are actually an example of a nature-based solution to climatic change. (Output 1.1).

Additional agricultural product value chains will be identified and improved for better income generation for the most vulnerable, including newly displaced and host community households (Output 1.2). The economically and politically deprived Yemenis whose livelihoods are dependent on primary water sources have better access to the resource, actively participating in decision-making platforms through tailor-made trainings and capacity building to ensure that all investments are sustained, managed and operated while ensuring that no conflicts will result from such support because of the participatory nature of the selection processes and planning of activities; special focus will be awarded to women enhanced skills for active participation in technical and soft skills (Output 2.1).

By combining efforts between water and agriculture administrations from the onset, the project will be able to enhance the multi-sectoral nature of the planned intervention and build on existing experience and practices to reach those most in need in this sector in an integrated manner. Selected sub-national levels will be actively engaged in defining project activities and prioritization of interventions.

Many organizations that work in Taiz and Lahj governorates to address the water insecurity issue are mostly focused on emergency supplies and drinking water and sanitation.²⁰ The project strategy lays the foundations for achieving sustainable livelihood, economic opportunities, social cohesion, promoting gender equity and women's empowerment based on the assumptions contained in the Theory of Change (Annex 1).

Project Target Groups

The total number of the direct beneficiaries will be 70,569 individuals; 37,123 of whom will be women in four provinces located within the Tuban catchment equally shared between the two governorates of Taiz and Lahj. The indirect beneficiaries will be the total population of the four districts, namely Al-Mawaset and Al-Selw districts in Taiz, and Al-Musaymer and Tuban districts in Lahj, reaching to 369,337.

Integration of Water Resources; Sustainability=Renewable

Most projects in the last 20 years were based on groundwater assessments with limited integration with surface water. The UNDP water availability study of 2021 probably provides the most relevant account of the situation of catchment dynamics even though it was broad and relied on literature review. Even more, the Water Resources Plans developed in efforts to operationalize the IWRM dimensions of the 2002 water law, predominantly focused on detailed accounts of groundwater potentials with little details of surface water hydrology.²¹

Based on good practice, water resources are public held in trust by government. One of the main principles of Integrated Water Resources Management (IWRM) is the unity of water resources regardless of whether they reside in rivers, wadis, streams, or groundwater; they are all one system which runs in catchments or within hydrologically delineated boundaries. The project will include hydrological assessments for water

²⁰ Many organizations are working Taiz and Lahj governorates to address this water insecurity from various aspects such as; UNICEF improving access to safe and clean drinking water for children and families in by rehabilitating and constructing water supply systems, providing water trucking services, and promoting hygiene and sanitation practices, Oxfam is working to improve access to water resources in by repairing and constructing water supply systems, providing water trucking services, and promoting sustainable water management practices, Mercy Corps is working to improve access to water resources by rehabilitating and constructing water supply systems, providing water trucking services, and promoting sustainable water management practices, CARE International is working to improve access to water resources in by rehabilitating and constructing water supply systems, providing water trucking services, and promoting sustainable water management practices, The Yemen Humanitarian Fund is providing funding to organizations working to improve access to water resources by supporting projects that provide emergency water supply, rehabilitate water infrastructure, and promote sustainable water management practices, etc.

²¹ JICA, 2007. THE STUDY FOR THE WATER RESOURCES MANAGEMENT AND RURAL WATER SUPPLY IMPROVEMENT IN THE REPUBLIC OF YEMEN WATER RESOURCES MANAGEMENT ACTION PLAN FOR SANA'A BASIN

resources of Tuban primary catchment at a reconnaissance level and detailed assessments for the two selected sub catchments of Warazan and Tuban Delta located in Taiz and Lahj governorates respectively.²²

The importance of these envisaged assessments is to ensure sustainability of interventions and to monitor impact related to enhanced water sources, improvement in groundwater recharge, reduced sectoral conflicts between upstream and downstream governorates, demonstrated coordinated planning between districts (Al-Mawaset and Al-Selw- upstream and Al-Mosaymer and Tuban downstream) and enhance social cohesion from demonstrated co-dependency of beneficiaries through participatory planning (refer to Results framework).

The project is engaging with the NWRA and MoAIF branches in Taiz and Lahj that are responsible for water resource planning and monitoring, legislation (registrations of water rights and licensing of water wells) and public awareness. They were also part of the development of this document. Advocacy at the local level can create the enabling environment for adequate local support to understand and make the connection between the groundwater-surface water continuum and how decisions upstream can affect water availability downstream. Further positive impact will invariably be witnessed in more water reaching the Delta and more available water for other sectors such as drinking, industry and mining.

Although an increase of 29% in total annual precipitation over the last 30 years was observed,²³ global rainfall projections in Yemen are inconclusive. It seems that due to insufficient daily precipitation data; some models are projecting increases in rainfall²⁴ while others project decreases.²⁵ What is undebated is that Yemen's temperatures have been increasing at an approximate rate of 0.39°C per decade and is predicted to increase by 3.3°C by 2060.²⁶ Without getting into the precipitation debate, scientists most recent confirmations are that the worldwide intensity of extreme wet and dry events – a metric that combines extent, duration, and severity – is closely linked to global warming and increases in temperatures.²⁷ This information is more relevant to this project since the recurrence of floods and drought cycles is the most impactful on people's livelihoods due to damaging of crops, water, and roads infrastructure apart from losses of lives, etc. The rehabilitation of traditional terraces is hence critical for facing future potential increase in flood and drought events. Terraces are important as green infrastructure capable of moderating floods and retaining moisture in drought conditions.

Equity in Water Allocations

On the back of infrastructure development, community mobilization can be triggered by engaging in participatory activities such as 'know your catchment' exercises which allow for combining remote sensed base maps of the catchment on which community members can identify local landmarks for better familiarisation of the overall catchment. It is then easier to see how water connects upstream and downstream users as well can help visualize landuses and how water is used/allocated. At a small scale, this can be used to arrive at a socially acceptable negotiated water distribution/allocations specially to those who normally are not formally recognized or legally protected such as small seasonal farmers, women farmers and IDPs. With the necessary capacity building and reducing water complexity, the knowledge playing field can be levelled allowing for empowered participation of all sectors of society. As a result of these participatory planning 'know your catchment' interventions, social cohesion and cooperation will materialize diffusing any tensions arising from old water competitions or inequities. Where possible, the project will capitalize on the existing Water Users Associations in the 4 districts established in similar current or old

²² UNDP, 2023. Workshop Report on prioritising ERA catchments. 14 May 2023

²³ Climate Service Center Germany (2015). Climate-fact-sheet. Yemen, updated version 2015.

²⁴ Climate Center, 2022. <https://www.climatecentre.org/wp-content/uploads/RCCC-ICRC-Country-profiles-Yemen.pdf>

²⁵ Wiebelt, M.; Breisinger, C.; Ecker, O.; Al-Riffai, P.; Robertson, R.; Thiele, R., (2011): *Climate Change and Floods in Yemen: Impacts on Food Security and Options for Adaptation* (IFPRI Discussion Paper 01139)

<http://cdm15738.contentdm.oclc.org/utils/getfile/collection/p15738coll2/id/126748/filename/126959.pdf>

²⁶ Netherlands Ministry of Foreign Affairs, 2018. Yemen Climate change profile

²⁷ Mathew Ridell and Bailing, Li, 2023. Nature Water | Volume 1 | March 2023 | 241–248.

projects with the provision for the review of the respective memberships to include all stakeholders having interest, influence or influenced by the resource within the defined hydrological boundaries.

At the larger Wadi Tuban catchment level, the main rule which is 'allala fa allala' which is formally recognised in the Water Law of 2002; excessively favours the elite owners upstream, disenfranchising the more modest farmers downstream and resulting in the impoverishment of rural farmers.²⁸ This is visible in the frequent drying up of the Tuban Delta down in Lahj governorate. Politically, this might not be the right time to challenge these rules specially that Ibb governorate is at the headwaters of the Tuban catchment. Yet, similar to the local participatory 'know your catchment' approach, it can be adopted at a large scale in a more top-down manner powered with scientific knowledge and visual GIS aid. The produced e-catchment map can be the basis of a governorates water technical workshop to visualise and acknowledge how upstream landuse practices can affect how much water ends up in the Tuban Delta. Providing the space for engaging this issue between the governorates (Ibb, Taiz and Lahj), technical public agency staff in both IRG and DFA and potentially research institutions as well (maybe with media presence), can result in valuable technical discussions and awareness raising potentially gearing towards a review for alternative water distribution/allocation system between governorates or even better, a review of the inequities in the Water Law. The presence of research institutions/universities could also trigger the right kind of research that can further change thought processes. Valuable lessons can be learnt from this activity and can help addressing water issues in other parts of the country. This exercise is scale dependent and must be timed well when the new infrastructure is being discussed. It is critical that these steps at the local and catchment wide levels precedes infrastructure development. Similar exercises for securing water resources for small farmers were successful in fostering cooperation between conflicting parties/tribes such as sedentary agriculturalists and nomadic pastoralists in Darfur, Sudan.²⁹

Enhancing Agricultural Value Add

The planned interventions will ensure that agricultural products from the small producers are better received by the consumers for better income generation. Fresh produce such as vegetables, herbs and dairy products have short shelf life and can easily spoil if not met with close and accessible markets and good storage facilities. The project will adopt good practices learnt on enhancing agricultural value add from ERRY³⁰ and SIERY³¹ in supporting simple food processing such as drying, canning, pickling, cheese making, etc. through provision of simple equipment and training. Small farmers will be the most to benefit from this activity reducing their risks and increase potential income derived including women home-based gardens.

Market Accessibility

Related to the value add is removing the next obstacle which is availability and accessibility of markets for small producers who face challenges in accessing markets due to limited resources, bad roads, and lack of economies of scale. There are opportunities for small producers to differentiate themselves by offering unique or value add products, local farmers markets and group transport options. In this regard, the project can contribute to improving road accessibility to markets specially rehabilitating rural roads that might have been damaged by the war potentially offering high impact to many producers especially small farms and home-based gardens. It can also engage WUAs and Water Committees to act as Cooperatives to group resources for cost effectiveness in transport or negotiating prices.

Coordinated Water Governance for Better Water Management

²⁸ UNDP, 2022. A Holistic approach to addressing water resources challenges in Yemen.

²⁹ UNEP, 2017. <https://www.unep.org/news-and-stories/story/water-catchment-project-expanded-aid-peace-and-economic-recovery-north>

³⁰ Enhancing Rural Resilience in Yemen Project

³¹ Strengthening Institutional and Economic Resilience in Yemen, UNDP lead project

Yemen might have adequate laws for water management but is mostly on paper and suffer from limited implementation due to instability. Based on the problems diagnostics, the project will enhance implementation based on three distinct interventions focusing on various levels of governance aimed at strengthening relevant governance structures through capacity building and accountability mechanisms to create the relevant sustainability potential for solutions. At the regional NWRA level, Output 2.1 will strengthen their capabilities and systems to adequately allocate water between sectors and users (as stated above). One of the major obstacles facing NWRA is their limited resources to adequately measure and monitor water availability and water use which is impacting on the sustainability of water resources and deepening inequities in access.

The project will conduct a gap analysis to establish the needed tools, equipment, water balance programming platforms and training to be able to establish a robust and transparent administrative allocations system based on real data. This output can contribute greatly to reducing potential conflicts between sectors and users as well as build trust in the administration and hence enhance compliance. The project will also identify and support the institutional evolutionary paths towards strong and sustainable decentralized Water Management Institutions (WMI)³² using the intensive interventions afforded in the 3 years to fast track and learn as well as produce the needed tools; guidelines, criteria, etc. for scaling up and replication of successful WMI establishments in the rest of the country. When balancing power play, it is also critical to establish stakeholder engagement success criteria which are regularly reported on for monitoring institutional performance based on the extent and freedom of stakeholder participation/engagement and to identify and act on any subtle power dynamics. The planned women soft skills training (in addition to the technical skills and participatory planning) will contribute in this regard to enhancing their participation in meetings. Before exiting, the project will establish exit strategies based on sustained functionality amongst the members specially the young to continue the services of the WMI beyond the project life span.

Sustainable and Evolving Water Management Institutions (WMIs)

In this project, Water Management Institutions refers to the collective of all local water-related organizations that exist in the project areas such as: Water User Associations (WUAs), Water/Village Committees or water forums/cooperatives. They could be either formal or informal, i.e., have/not legal persona. In the past, loose arrangements for stakeholder engagement were not popular. Nowadays, it is believed to be safe spaces that are less threatening to stakeholders, downplays the power struggles and operates at a high-value systems level. Such associations are usually driven by a common concern or aspiration; a common denominator that triggers the individual inertia for volunteerism or engagement (agency) or some literature refers to it as active citizenry. For institutional sustainability beyond the project life span, such would constitute a successful institutional evolution paradigm vis a vis fully top-down driven institution. For strengthening WMIs and enhancing their adaptive capacities, there is a need to explore options for the twinning of similar institutions located in different governorates or even different countries to exchange lessons and learn from each other. This is needed to lift the expectations bar of institutions evolving in challenging environments and unable to remove themselves from crippling surrounding challenges. In the project, each WMI established or strengthened will require to develop an exit strategy that will ensure sustainability beyond the project duration³³.

Empowering Women

³² Water Management Institutions is a collective term for local organisations active in the water space such as Water Users Associations, Water Committees, Village Committees, etc.

³³ One suggestion (good to have) could be to make sure that young university graduates are attracted to these spaces (through soft recognition) to document and conduct research on the effectiveness of this level of governance in implementing IWRM. Students from the global North can also be attracted to twin with local students to generate new understanding.

In the agricultural sector, women represent about 80% of the labour force.³⁴ The number of female-headed households has tripled from what it was before the war. It is estimated that 73% of the nearly 4 million displaced people in Yemen are women and children and that about 30% of the displaced families are currently headed by women compared to 9% before the war in 2015.³⁵

In the project, women's capabilities will be evaluated, and they will be provided with technical and soft skills or longer trainings if needed to be able to benefit from the economic opportunities. These opportunities provided will be gender sensitive, i.e., match women's aspirations and ideas for enhancing the value of their products. To ensure that the most vulnerable are targeted in collaboration with the Provincial and District authorities.

IV. RESULTS AND PARTNERSHIPS

The project will contribute to the UNDP Country Strategy Note 2021 to 2024, which has an overarching focus on food security. It will directly contribute to achieving the 2022-2024 United Nations Sustainable Development Cooperation Framework (UNSDCF) Outcome 1; "By 2024, people in Yemen, especially women, adolescents and girls and those in the most vulnerable and marginalized communities benefit from better, equal and inclusive access to nutritious food, sustainable and resilient livelihoods and environmental stability". The project is aimed to achieve increased agricultural production, enhanced agricultural products and improved water governance resulting in gradual economic recovery and eventually contributing to enhanced local livelihood resilience and sustainable peace in Yemen.

Water harvesting will be augmented with new infrastructure envisaged to efficiently capture surface water as well as sustainable groundwater and make it available through surface irrigation and storage. Existing damaged or unmaintained infrastructure will be maintained. Such infrastructure could include community cisterns, shallow wells, canals, soil erosion control measures, bank protection, low-tech agricultural infrastructure, flood protection structures (gabions, terraces, and embankments). Poor Yemenis whose livelihoods depend on primary water sources for productive uses are an integral part of how new or rehabilitated surface water harvesting, distribution and storage will be selected, designed, and implemented.

Small farmers, women and IDPs, mainly, will have better access to the resource through their equitable representation in local governance structures that will be enabled to sustain these investments. Public institutions are core partners engaging to effect decentralisation of water governance which is part of the Yemen legal imperative. Engaging public authorities to fulfil their respective mandates such as NWRA responsible for water resources monitoring, regulation and enforcement of water allocations for example in an equitable manner within the project through the creation of easily accessible catchment knowledge and participatory planning. WUAs and Water Committees will be capacitated to monitor and enforce water use and improved equitable access, as well as conduct small local initiatives.

Water resources management planning is meant to be a participatory, reconciliatory transformative social process that reconciles the demands for water through common values and the power of knowledge equity which ultimately contribute to social cohesion especially with IDPs. Cooperation between districts, governorates and WUAs/Water Committees is also envisaged through sharing knowledge on water use and defining water sharing and interdependencies in allocations. Identification of Gender Sensitive District Plans for prioritization and supporting agricultural value-add options for food processing to better livelihoods.

³⁴ Women National Committee, The Supreme Council for Women, Republic of Yemen; Report on Status of Women in Yemen, 2022.

³⁵ UNFPA, 2021. 2021 UNFPA Humanitarian Response in Yemen. <https://reliefweb.int/report/yemen/2021-unfpa-humanitarian-response-yemen-enar>

Market accessibility obstacles will be screened, and suitable investments can be identified to enhance income.

Cross-cutting workstream on 'mainstreaming social, environmental, economic, and technical safeguards' is applied according to the approach below.

Infrastructure Design Safety Sustainability and Compliance: Infrastructure designs will be done according to national or regional guidelines as appropriate, in consultation with relevant public agencies; compliance with such regulations will be ensured by a qualified Civil Engineer. Infrastructure sustainability from a social, environmental, technical, and financial perspectives will be secured through participation of provincial and local WUAs and Water Committees in defining the respective roles and responsibilities. Training and participatory planning will ensure social sustainability and a sense of ownership and willingness of beneficiaries to contribute to O&M costs in cash or kind. The role of WUAs also in agricultural value add initiatives and market accessibility can make this more possible. In the project's exit strategy, the issue of asset ownership would need to be engaged with the provincial government to either enter a service level contract with the respective WUAs or to formalise ownership to the WUAs as a legal entity. These options will be context specific and would need to be explored.

Mainstreaming Tools and Capacities: The proposed initiatives will provide tools to establish a social contract between users agreeing to the new water allocations at the governorates, NWRA, District and WUAs levels. Where relevant NGOs and CSOs will implement small community initiatives such as community mobilisation, monitoring, clearing of canals, establishment of nurseries for special local plants with high market value, collection of produce for long distance transport to nearby markets, etc. WUAs and Water Committees will be strengthened and capacitated to ultimately be responsible for the developed infrastructure and ensure their technical, environmental, social, and financial sustainability. As stated above, this will form part of the project's exit strategy. NWRA and MoAIF will be strengthened in conducting hydrological assessments, design and implementation of a monitoring system related to the project area as well as the necessary scenario planning tools for regulating water use and allocations between various sectors. Women technical and social skills can be mainstreamed through Training of Trainers (ToTs) to continue reinforcing the participation of women in WUAs decision-making. The development of training materials can be used on an ongoing basis. Also, UNDP Training manuals developed for training WUAs will be customised for easier use and better uptake.

Engaging and Generating Income: Agricultural value add food processing and marketing opportunities will be improved together with better access to water resulting in the expansion of agricultural activities and better access to market resulting in more income specially to women and IDPs. Good lessons can be learnt from ERRY in this regard.

Climate Change and Extreme Events: About 77% of natural disaster incidents reported in Yemen between 1900-2011 were attributed to floods.³⁶ Most recent discovery is that increases in temperatures which is predicted for Yemen, is correlated to extreme wet and dry events.³⁷ This is confirmed by observed trends in Yemen showing longer dry spells and more intense rain falling in shorter durations causing substantial damage to infrastructure, roads, etc. The project will ensure that infrastructure designs take this information into consideration for enhanced resilience. The rehabilitation of damaged agricultural terraces can contribute to reducing runoff velocity and boost green water retention and conservation.

³⁶ Source: EM-DAT: The OFDA/CRED International Disaster. Database, Université Catholique de Louvain, Brussels, Belgium Data version: v11.08

³⁷ Mathew Ridell and Bailing, Li, 2023. Nature Water | Volume 1 | March 2023 | 241–248

Integrated and Holistic Catchment Planning: To ensure environmental sustainability, sites selected for water harvesting for storage will make considerations for upstream and downstream dynamics; the cooperative management proposed in this document is designed to facilitate integrated planning at various levels; between governorates the Tuban primary catchment is shared between Ibb, Taiz and Lahj, at the provincial level sharing the Warazan and lower Tuban Delta areas between Al-Mawaset, Al-Selw and Al-Mosaymer and Tuban; at a more local scale, interdependencies between the various districts will also be engaged. The approach is based on community enhanced awareness of the need for an integrated approach to improve shared responsibility and agency based on IWRM principles. The importance of utilizing participatory planning as a societal process aims to make the process engaging and meaningful. It can demonstrate the benefits of an iterative and adaptive process in which planning at the catchment or sub-catchment level informs, and is informed by, work at the local level. This process is an anchor or integrator of the various project outputs viz. local infrastructure development for food security and income generation. The envisaged 3D catchment model developed based on the scientific analysis and community design and inputs will be a powerful awareness raising process which helps in levelling the knowledge playing field including illiterate small farmers and empowers them to participate and contribute to building trust, social cohesion and ultimately result in reduced conflicts.

Women Empowerment: Good governance entails, amongst others, participation in decision-making of representatives of the benefiting community. Empowering women to participate in decision-making, providing access to resources, and recognizing their role in water management can lead to better outcomes for both women and their communities. Women taking part in agricultural activities and providing around 60% of labour in crop farming, 90% in livestock rearing and 10% of wage labour are becoming the most influential and affected by climate change.³⁸ Women-headed households are more at risk of food insecurity due to their limited work opportunities and reduced access to productive resources, services, and rural institutions. More than a third of the opportunities afforded by the project in benefiting from enhanced water availability and income generation (wages) from partaking in implementation of small infrastructure rehabilitation works will be dedicated to women. Also secured water allocations made possible by the water harvesting infrastructure will be dedicated predominantly to women and small farmers as identified in the respective locations. To be able to secure a sustainable access to water resources beyond the project will entail formal register of new water allocations by the responsible agency NWRA and district authorities. Women farmers or producers will also benefit from the micro financing for agricultural value add activities and related trainings for enhanced participation in decision making as well as for successful ventures of products value-add initiatives such as drying, canning, cheese making, etc. UNDP has experience in this regard gained in the ERRY project which affords longer term income generating activities. Also, training in technical skills such as water assessments, monitoring, local water harvesting, etc will be complemented with targeted soft skills for enhanced participation of women in decision making. Other opportunities of learning will be afforded within the implementation of participatory catchment planning.

Child malnutrition

UNICEF Yemen Country Office (YCO) has prioritized investment in addressing malnutrition (wasting, stunting and micronutrient deficiencies) across the lifecycle for both the current generation of children under five years and the next generation by placing greater emphasis on adolescents and women. One of the drivers identified in the UNICEF Yemen malnutrition Programme 2023/24 is food insecurity. At the project level synergies can be created with UNICEF Yemen nutrition programme through their Community-based Management of Acute Malnutrition (CMAM) specially in Taiz which is one of the identified areas with severe malnutrition. As the Taiz nexus approach kicks off, this can be better structured for systemic coordination of outputs specially related to addressing one of the key drivers identified in their document which is food security. The same applies with the WFP leading role on humanitarian food distribution, addressing some of

³⁸ UNDP, 2021. Yemen Food Security Response and Resilience Project (FSRRP).

the urgent food assistance issues faced by families in addition to safety net interventions that ensure the most vulnerable communities have access to food or cash support.

Expected Results

The main objectives of the project are to improve agricultural production through sustainable water supply and management based on IWRM principles, enhance food security and livelihood opportunities by creating economic opportunities and strengthening capacities of community and public organisations to address water supply and food security challenges. This will be achieved through the activities in the following outputs:

Output 1.1 focuses on enhancing water availability through infrastructure development and rehabilitation for water harvesting while adopting Integrated Water Resources Management (IWRM) as one of its strategies. The implementation modality of large-scale infrastructure development and rehabilitation will be through public tenders which will be carried out and managed directly by UNDP civil engineers. As for small-scale infrastructure development and rehabilitation, UNDP's Responsible Parties (NGOs) or CBOs will manage these interventions. The improved water sources will increase agricultural production for the target groups. This will be achieved by enhancing water storage, improved distribution/allocations and demand managed access through infrastructure development. Sub-catchment priority locations will be identified within the Tuban catchment based on criteria developed together with the responsible public agencies and Ministries of Agriculture and Water. Some of the criteria for sub-catchment selection are: the greatest positive impact, especially in vulnerable societal segments such as low-income people, women, displaced persons, youth, etc., within the borders of the governorates of Taiz and Lahj and their respective selected districts/villages. Other criteria include scarcity of infrastructure investments and scarcity of water available for use, evidence of availability and Importance of Integrated Water Resources Management Plans, the existence of competition between agriculture and the emergency water supplies, relatively stable government structures ready for collaboration, compatibility of choice with the priorities of government plans for reconstruction. Preferably also the selection of districts in which other United Nations programs operate, such as the ERRY Project sites in Lahj. The infrastructure related activities would include rehabilitation and maintenance of small dams, on-farm water harvesting facilities (underground cisterns and open wadi pits), watershed management/rainwater harvesting structures in mountainous areas (check dikes and gabions/retaining walls in wadi beds), water distribution, irrigation canals with control gates, cleaning of irrigation canals of sediments, shallow wells, and springs with groundwater recharge potential).

A high-level water balance assessment will be needed for Wadi Tuban to produce the needed knowledge spatially defined to demonstrate the upstream/downstream dependencies between the governorates sharing the Wadi; viz, Ibb, Taiz and Lahj. A knowledge sharing workshop will be organised to demonstrate the implications of land and water use in upstream Ibb on the water received in the Tuban Delta. The information produced should be packaged for decision makers based on the scientific reports produced. At the sub-catchment level, four detailed hydrological analyses and future water allocation trends/options will also be produced to allow for the participatory prioritization of interventions. Four sub-catchment level 3D models can be built in a participatory manner based on the water balance analyses. A series of workshops can function as awareness raising and levelling the knowledge playing fields by clearly demonstrating how managing surface water resources can have positive impacts on groundwater levels. Based on this, four water allocation plans will be developed in the selected sub-catchments also in a participatory manner and implemented clearly indicating the number of small farmers benefiting from the new and rehabilitated infrastructure for storage and hence from the increase in water accessibility.

For maintaining and rehabilitating traditional terraces, the project will first map and assess the condition of terraces in the selected sub-catchments to prioritize those most impacted by floods and other adverse events. The potential of reducing flooding downstream as well as enhancing agricultural production and the numbers of beneficiaries will be some of the indicators sought.

Output 1.2 deals with improving income opportunities along the value chain for the most vulnerable, women-headed households and IDPs. Women-headed households are more at risk of food insecurity due to their limited work opportunities and reduced access to productive resources, economic transactions in the local markets and decision-making in rural institutions. A socio-economic analysis of household income generation from agriculture in the identified sub-catchments will be conducted. Together with the local development plans (mainly the gender sensitive District Plans). The selection and prioritization of most deserving farmers together with local government and WUAs/Water Committees in selected sub-catchments will be established, maximising on the number of households benefiting from new opportunities for income generation.

For enhancing income generation, this output will support potential value-added processed food such as processed fruits and vegetables, juices, jams, pickles, squashes, concentrate, processed dairy products (ghee, paneer, cheese, butter), honey, etc. WUAs/Water Committees will be empowered to implement some of these small initiatives. The project will build capacity through training and skills development before providing small financial grants to kick start micro businesses. Three main responsibilities such as training courses are envisaged on: accounting, sales & marketing, microbusiness, and cash management. Beneficiaries will be able to select business initiatives that suit their interests and capabilities while considering local market realities. Training materials produced in ERRY and possibly SIERY can be used as well as identifying Village Agriculture Producers Groups established in Lahj and identify similar structures in Taiz. Indicators used will be the number of households benefiting from these opportunities as well as the number of women, small farmers and IDPs, target of 40%. A market assessment will provide necessary market information for informed prioritization of interventions in improving market accessibility. Number of trainings received and percentage of women participants. Also, the number of women with increased market accessibility specially for home-based garden produce is one of the indicators for this output.

Output 2.1 is about improving water governance with three aims; the first one is the institutional strengthening and support of WUAs/Water Committees and Regional NWRA in both Taiz and Lahj to ensure ownership, operation and maintenance of infrastructure and accountability. This will be achieved first by analysing their institutional capabilities in general based on a needs analysis to fulfil their mandate as well as through specific support for ensuring sustainable infrastructure, identifying the gaps, and addressing those gaps including mechanisms for operational sustainability; financial, technical, social, environmental, and institutional sustainability. The institutional capacity gaps assessment will look for all possible community organized institutions including Village Water Committees and other constellations. Other aspects to be strengthened would be respective accountability, service level contracts, etc with respective higher tier responsible public agencies for sustained performance. The project will ensure that locally based strengthened institutions such as WUAs and Water Committees have exit strategies that ensure sustainable structures and continued functioning after the end of the project.

The second aim is to build the water institutions' capacities with trainings on water management including water resources monitoring, conflict management (prevention and resolution), infrastructure maintenance, etc depending on the gap analysis. A maximum of 38 trainings will be designed for each sub-catchment. Where relevant UNDP WUAs training material developed will be customized and made available for subsequent trainings organized for WUAs, water committees, etc. One of the targets is 30% of recipients of training will be women.

The third aim is specifically designed to customized training targeting women taking into consideration technical and soft skills such as public speaking, assertiveness and gender equity aimed to address impediments to their broader participation as well as developing needed regulatory tools to monitor functioning and performance of these water-related structures.

Resources Required to Achieve the Expected Results

ERA is estimated to require a total of 15 million Euros over a three-year period to meet its ambitious scope and to maximize impact on the lives of targeted populations. Managerial capacity, as well as technical expertise will be needed to ensure programming quality.

Partnerships

This project has been conceptualized and designed together with the local public agencies; Ministry of Agriculture, Irrigation and Fisheries (MoAIF) and the Ministry of Water and Environment (MoWE) represented by NWRA as well as regional NWRA. Other partnerships will include Responsible Parties in target districts. Furthermore, partnerships will be secured with Provincial and District authorities, local WUAs, Water Committees, Village Committees established under the UNDP, FAO, WFP, and ILO project “Supporting Resilient Livelihoods and Food Security in Yemen (ERRY II)” mainly in Lahj. In Taiz, the project will contribute to the HDP nexus area-based interventions. The project will cooperate with these responsible public agencies and local implementing partners for selected community mobilisation activities. UNDP will also coordinate with other KfW-funded projects in the water/irrigation sectors such as the running FAO’s project, (BMZ number 2020.4104.4), titled “Resilience Programme in the Irrigation and Agricultural Sector” and IOM’s project, (BMZ no. 2022.4054.7), titled “Addressing Water-based Conflicts through Enhanced Infrastructure and Resource Management in IDP Communities”. Furthermore, UNDP will aim to coordinate with the BMZ-funded and GIZ-implemented project titled “Improving food security for resilience in Yemen (IFSR)” which is part of the transitional aid and starts with a resilience-enhancing and multisectoral approach, in order to reduce the increasing dependence on humanitarian aid. UNDP will coordinate closely with the GIZ project to ensure building on each other’s efforts and achievements taking into consideration that both projects aim to improve food security through enhancing resilience at the local community and institutional level.

Risks and Assumptions

Political Risks: The political crisis and protracted conflict in Yemen, is still far from being resolved and has continued to cause inaccessibility to some sites and delays in delivery in many others. The risks of being impacted by the political fragmentation induced by the war are mitigated by the close collaborations with public institutions at the national as well as local levels. Limitations in responding to the scale of needs are mitigated by the early engagement of public institutions in the development of this document and the design of transparent approaches for implementation. The UN maintains its operational integrity through adherence to principles of impartiality, human rights and inclusive humanitarian/civilian assistance and engages stakeholders clearly communicating these principles.

Operational Risks: Potential disruption in UNDP’s business processes and project implementation. UNDP has developed a Business Continuity Plan which ensures that the critical office functions can be performed from other locations if necessary. Outside Sana’a, UNDP has staff presence in Aden, Ibb (also covering Taiz), Hodeidah, and Sa’ada to interact. UNDP also relies on a contracted Third-Party Monitoring (TPM) Agent to perform monitoring of the project, reporting in parallel to UNDP and KfW.

Financial/fiduciary Risks: UNDP’s anti-fraud policy, the annual audits, regular spot-checking by UNDP staff, and the TPM in case of NGOs being contracted to perform community awareness and training. Direct contracting modality also ensures that this risk will be minimal.

Programmatic Risks: The programmatic risk for NGOs is not significant since they will be engaged in concretely defined tasks based on established capabilities. The selected provinces are relatively stable and accessible. The potential inability to verify results on the ground in a timely manner, potential inability to recruit staff in a timely fashion to support project implementation, and potential inability (or significant delays) to meet delivery expectation/targets will be addressed through the contracting of TPM as well as UNDP will closely review the quarterly expenditure reports of the responsible contractors to monitor financial delivery of the project.

Security Risks: These include crime, air strikes, landmines, and unexploded ordnance (UXO), terrorist attacks, and ground combat, arbitrary arrests, and detentions. UNDP mitigates these risks through close collaboration and coordination with the UN Department for Safety and Security (UNDSS), including the de-

confliction protocols and strict adherence to UN security procedures. A TPM Agent will conduct the monitoring of the implementation of the project in hard-to-reach areas. UNDP has a national wide project working on mine action clearance, from which the project will benefit in order to minimize mine risks within the vicinities of this project.

Reputational Risks: The risks related to raised expectations, competition between public agencies and/or between users in accessing benefits from this project are minimal because of the participatory and inclusive manner in which the development of the project document as well as the planned approaches to implementation. The project will also have a strategic communications strategy and UNDP will strengthen project oversight and quality assurance with documentation of issues and working closely with the responsible parties. In the interest of transparency and empowerment, the project governance structure includes the main public institutions partners.

Environmental: Although environmental risks and impacts are expected to be site-specific, reversible and generally of low magnitude that can be mitigated following appropriate measures, such as related to civil works; dust and noise.

Social (including safeguards)

The project is expected to have numerous social benefits for the target communities and vulnerable population. Any potential conflicts from competition over natural resources will be mitigated by adopting participatory planning and close collaboration with regional and local public institutions. Women participation will be enhanced by earmarking some interventions such as training in soft skills and targeted initiatives.

Overall, Social and Environmental Safeguards will be defined in the Grant Agreement between UNDP and KfW. Detailed guidelines for UNDP will be provided in the ESCP annex of the Grant Agreement.

Stakeholder Engagement

The key stakeholders of this project from the public sector institutions will be Ministry of Agriculture, Irrigation, and Fisheries (Aden and Taiz) and Ministry of Water and Environment represented by NWRA in Taz and Lahj. Also, the respective provinces of Al-Mawasat, Al-Selw (Taiz governorate) and Al-Mosaymer and Tuban (Lahj governorate). MoAIF and NWRA have been closely engaged in the development of this project document and were instrumental in the selection of provinces to be involved in the project. They will continue to be involved in the project implementation including in the governance of the project. In the project, they will be strengthened to ensure that they fulfil their responsibilities based on their respective mandates.

Provincial level authorities will be closely linked to the project implementation especially when defining beneficiaries together with District and village levels. Under their guidance and participation, the project can be anchored in the respective areas.

Hydrological analyses will identify potential water harvesting sites based on hydrology, geomorphology, and soil profiling. If there are many sites identified, prioritisation will take place together with the provinces, districts, and village levels. Various activities in the project as defined in the log frame will need their close participation specially when identifying and selecting beneficiaries for the various interventions, terrace rehabilitation, irrigation system rehabilitation, marketing opportunities, food processing opportunities, etc. Water User Associations and/or Water Committees in the specified sites will be another group of important stakeholders. The project will best build on existing community structures rather than build new ones. These will be strengthened to play the roles as described in this document.

For many of the community mobilisation together with district and village levels, local NGOs/CSOs will be contracted to perform some of these tasks.

Women-headed households and women in general will be encouraged to work on the various interventions and will have their own small initiatives in food processing or marketing ventures after having received the trainings.

Digital Solutions

The project will conduct a catchment water balance assessment for Tuban catchment. This is further explained below. It will be based on spatial satellite images for conducting the analyses. The project might not be able to ground truth, but it remains to be valuable and needed. GIS enables the visualization of water balance components through maps, graphs, and charts. By visually representing the spatial distribution of water inputs and outputs, decision-makers can gain valuable insights into the catchment's hydrological characteristics and identify areas of concern. In the institutional strengthening part, training in scenario planning is one of the Digital water decision support, that can help in reviewing water allocations by running what if scenarios, climate change responses, water quality aspects as well as simulating groundwater recharge and Tuban Delta hydrology.

Knowledge

Knowledge products produced in the project will be the water balance report for the main Tuban Catchment which can be useful for many other projects to follow as well. When packaged as indicated above, the information can be immensely powerful to raise awareness about the whole catchment concept (IWRM) in catchment planning. Ibb and Taiz land use and water use decisions need to take the demands for water downstream in Lahj for example because the Tuban Delta receives little water in some years. A technical workshop between all governorates falling within the Tuban catchment will be organised in this project which can produce valuable scientific knowledge. The knowledge produced can be a strong advocacy tool. Also, the four detailed sub-catchment hydrology and water balance can function as inputs into a participatory development of a 3D model in which communities define, the map key and the landmarks in the areas for bench marking based on their knowledge. This is a powerful awareness raising process which helps in levelling the knowledge playing field including illiterate small farmers and empowers them to participate. The duration for developing this model can create trust and social cohesion as well as empathy towards the landless. The model can form a good landmark within the district offices for future references to this project and others. The project will also establish an effective water resource monitoring programme that can support planning and decision making on an ongoing basis. Other visibility and lesson sharing publications are envisaged as outlined in the relevant section.

Visibility

To ensure regular and 'on-message' public visibility for ERA, a communication and visibility plan will be developed to well position this partnership and provide a set of proposed gender sensitive communication products, specific media pieces, and advocacy tasks. Communication and knowledge materials on gender equality and women's empowerment will be produced as well as 15% of the project's visibility activities will focus on gender equality and women's empowerment messages in social media.

This plan will utilize UNDP's Deputy Chairmanship of the Water Sector Coordinating Group membership to disseminate project information and coordination with other projects in the selected locations. Use of local agencies and NGOs online platforms to share human interest/impact stories, articles, exposure stories, blogs, op-eds, press releases, Facebook/Twitter/Instagram posts, video stories, factsheets, visual presentations, etc with a particular focus on success stories of women. Additionally, forward looking products and evidence-based studies such as policy briefs and impact reports will also be developed and disseminated to capture high impact of the project including on gender equity and women's empowerment.

V. RESULTS FRAMEWORK ³⁹									
Intended Outcome as stated in the UNSDCF Programme Results and Resource Framework: Outcome 1: “By 2024, people in Yemen, especially women, adolescents and girls and those in the most vulnerable and marginalized communities benefit from better, equal and inclusive access to nutritious food, sustainable and resilient livelihoods and environmental stability”.									
UNSDCF Outcome indicators as stated in the Country Programme Results and Resources Framework, including baseline and targets: Indicator 1.1 Proportion of the population experiencing moderate to severe food insecurity (modified Sustainable Development Goal) (SDG) 2.1.2) Baseline (2021):16.2 million (54%) Target (2024): 13 million (43%)									
Applicable Output(s) from the UNDP Strategic Plan: Structural transformation accelerated, particularly green, inclusive and digital transitions									
Project title and Quantum Project Number and BMZ Number: Integrated Water Resources Management to Enhance Resilience of Agriculture (ERA) and Food Security BMZ Number: 2023.1805.3									
EXPECTED OUTCOMES & OUTPUTS	OUTCOMES & OUTPUTS INDICATOES	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)				DATA COLLECTION METHODS & RISKS
			Value	Year	Year 1	Year 2	Year 3	FINAL	
OUTCOME 1: Enhanced livelihood resilience and agricultural production (BMZ-related).	# of famers benefiting from improved water and irrigation facilitation	Endline Survey	0	2023	0	8,468	12,702	21,170	METHOD: Survey and onsite observations will be conducted at the end of the project. RISKS: - Spreading of violent conflict in Yemen. - District local authorities do not support the project. - Staff deployments and mobility, including face-to-face consultations with stakeholders impeded due to insecurity.
	# of new jobs created	Endline Survey	0	2023	0	3,175	3,175	6,350	
Output 1.1: Increased water availability for agricultural production	Indicator 1.1.1 # of new and rehabilitated water infrastructure works	Progress Reports	0	2023	0	40%	60%	100%	Note: The total number of new and rehabilitated water infrastructure works will be identified following the implementation of assessment reports of water infrastructure and use. METHOD: The assessment reports of water infrastructure and use. RISKS: same as above
	Indicator 1.1.2 % volume of new water from infrastructure	Progress and monitoring reports	0	2023	0	10%	30%	40%	

³⁹ UNDP publishes its project information (indicators, baselines, targets and results) to meet the International Aid Transparency Initiative (IATI) standards. Make sure that indicators are S.M.A.R.T. (Specific, Measurable, Attainable, Relevant and Time-bound), provide accurate baselines and targets underpinned by reliable evidence and data, and avoid acronyms so that external audience clearly understand the results of the project.

Activities Output 1.1	<i>Activity 1. Data collection on water resources and existing water infrastructure</i>	<i>Governorate-level workshops</i>	0	2023	2	0	0	2	
	<i>Activity 2. Hydrological water balance assessments for Tuban and 4 sub-catchments, terraces flood mitigation potential and water retention, water allocation</i>	<i>Assessments reports</i>	0	2023	4	0	0	4	
	<i>Activity 3. Workshops to identify potential water infrastructure works for interventions</i>	<i>Meeting minutes</i>	0	2023	4	0	0	4	
	<i>Activity 4. Assessment of water infrastructure and use</i>	<i>Assessments reports</i>	0	2023	4	0	0	4	
	<i>Activity 5. Construction, procurement and installation of water works</i>	<i>Progress and monitoring reports</i>	0	2023	0	3	1	4 ⁴⁰	
Output 1.2: Improved income from better markets and enhanced agricultural value chain	<i>Indicator 1.2.1 # of beneficiaries; small farmers, women and IDPs accessing new opportunities for income generation (Baseline = 0; Target = 40% of targeted households)</i>	<i>Endline survey</i>	0	2023	0	10%	30%	40%	<i>Targeted households are those of small farmers, women (30% of total beneficiaries under this output) and IDP farmers. Numbers will be determined following the socio-economic analysis.</i>
Activities output 1.2	<i>Activity 1. Socio economic analyses around agricultural value add options in identified sub-catchments</i>	<i>Socio-economic reports</i>	0	2023	2	0	0	2	Note: Two reports covering four districts.
	<i>Activity 2. Community mobilisation, prioritisation of small farmers and women</i>	<i>Consultation meeting reports</i>	0	2023	6	6	0	12	

⁴⁰ 4 target districts; exact number of construction works will be identified following the assessment.

	<i>food gardens and local government planning support of small initiatives</i>	<i>& meeting minutes</i>							
	<i>Activity 3. Implementation of selected food processing and support to enhancing markets</i>	<i>Progress and monitoring reports</i>	0	2023	20%	40%	40%	100%	Note: Implementation will be in the four target districts and will be launched in Y2 and continue to Y3.
OUTCOME.2: Enhanced water governance and local communities are actively engaged in WRM decision-making processes (BMZ-related)	<i># of rural community members involved in water governance committees or other decision-making bodies at the local level.</i>	<i>Endline Survey</i>	0	2023	184	828	828	1,840	METHOD: Survey and onsite observations will be conducted at the end of the project. RISKS: same as above
Output 2.1: Improved water governance	<i>Indicator 2.1.1 # of catchment participatory planning workshops completed for each sub-catchment</i>	<i>Workshops reports</i>	0	2023	4	8	0	12	Note: Four IWRM plans for the four sub-catchments, including four 3-D models and four sub-catchment allocation plans METHOD: Project technical personnel provide figures on the Number of catchment participatory planning completed for each sub-catchment based on information from data source. RISKS: Same as above
	<i>Indicator 2.1.2 # of female members in WUA</i>	<i>Lists of WUAs board members</i>	0	2023	7	32	33	72	
	<i>Indicator 2.1.3 # of women (members of WUA & Water Committees) trained</i>	<i>Attendance lists, End of Training Reports</i>	0	2023	0	513	627	1,140	
Activities output 2.1	<i>Activity 1. Institutional needs assessment and strengthening of NWRA, WUAs and water committees</i>	<i>Attendance lists, End of training reports</i>	0	2023	0	2	2	4	Four districts
	<i>Activity 2. Training and capacity building on building and sustaining an organisation, equity in allocations, water monitoring, compliance and enforcement</i>	<i>Attendance lists, End of Training Reports</i>	0	2023	0	50	70	120	

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	<i>of water management, food processing, marketing, etc</i>								
	<i>Activity 3. women custom made trainings on technical and soft skills; public speaking and women targeted initiatives</i>	<i>Attendance lists, End of Training Reports</i>	<i>0</i>	<i>2023</i>	<i>0</i>	<i>16</i>	<i>16</i>	<i>32</i>	

VI. MONITORING AND EVALUATION

In accordance with UNDP's programming policies and procedures, the project will be monitored through the following monitoring and evaluation plans:

Monitoring Plan

Monitoring Activity	Purpose	Frequency	Expected Action	Partners (if joint)	Cost (if any)
Track results progress	Progress data against the results indicators in the RRF will be collected and analysed to assess the progress of the project in achieving the agreed outputs.	Quarterly, or in the frequency required for each indicator.	Slower than expected progress will be addressed by project management.		
Monitor and Manage Risk	Identify specific risks that may threaten achievement of intended results. Identify and monitor risk management actions using a risk log. This includes monitoring measures and plans that may have been required as per UNDP's Social and Environmental Standards. Audits will be conducted in accordance with UNDP's audit policy to manage financial risk.	Quarterly	Risks are identified by project management and actions are taken to manage risk. The risk log is actively maintained to keep track of identified risks and actions taken.		
Learn	Knowledge, good practices and lessons will be captured regularly, as well as actively sourced from other projects and partners and integrated back into the project.	At least annually	Relevant lessons are captured by the project team and used to inform management decisions.		
Annual Project Quality Assurance	The quality of the project will be assessed against UNDP's quality standards to identify project strengths and weaknesses and to inform management decision making to improve the project.	Annually	Areas of strength and weakness will be reviewed by project management and used to inform decisions to improve project performance.		
Review and Make Course Corrections	Internal review of data and evidence from all monitoring actions to inform decision making.	At least annually	Performance data, risks, lessons and quality will be discussed by the project board and used to make course corrections.		
Project Report	A progress report will be presented to the Project Board and key stakeholders, consisting of progress data showing the results achieved against pre-defined annual targets at the output level, the annual project quality rating summary, an updated risk log with mitigation measures, and any evaluation or review reports prepared over the period.	Annually, and at the end of the project (final report)			
Project Review (Project Board)	The project's governance mechanism (i.e., project board) will hold regular project reviews to assess the performance of the project and review the Multi-Year	Specify frequency (i.e., at least annually)	Any quality concerns or slower than expected progress should be discussed by the project board and		

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Monitoring Activity	Purpose	Frequency	Expected Action	Partners (if joint)	Cost (if any)
	Work Plan to ensure realistic budgeting over the life of the project. In the project's final year, the Project Board shall hold an end-of project review to capture lessons learned and discuss opportunities for scaling up and to socialize project results and lessons learned with relevant audiences.		management actions agreed to address the issues identified.		

Evaluation Plan⁴¹

Evaluation Title	Partners (if joint)	Related Strategic Plan Output	UNSDCF/CPD Outcome	Planned Completion Date	Key Evaluation Stakeholders	Cost and Source of Funding
Mid-Term Evaluation				December 2024		USD 30k – Project (KFW)
Terminal Evaluation				March 2026		USD 30K – Project (KFW)

⁴¹ Optional, if needed

VII. MULTI-YEAR WORK PLAN ^{42,43}

All anticipated programmatic and operational costs to support the project, including development effectiveness and implementation support arrangements, need to be identified, estimated and fully costed in the project budget under the relevant output(s). This includes activities that directly support the project, such as communication, human resources, procurement, finance, audit, policy advisory, quality assurance, reporting, management, etc. All services which are directly related to the project need to be disclosed transparently in the project document.⁴⁴

Euro 1.00 Equivalent to USD 1.07296

Euro 15,000,000 = USD 16,094,420

EXPECTED OUTPUTS	PLANNED ACTIVITIES	PLANNED BUDGET \$			PLANNED BUDGET	
		Y1	Y2	Y3	Budget Description	Amount \$
OUTCOME 1: Enhanced livelihood resilience and agricultural production						
Output 1.1: Increased water availability for agricultural production	Activity 1. Data collection on water resources and existing water infrastructure	150,000.00	0.00	0.00	Operating Expenses and Consulting Services	150,000.00
	Activity 2. Hydrological water balance assessments for Tuban and 4 sub-catchments, terraces flood mitigation potential and water retention, water allocation	800,000.00	0.00	0.00	Consultancy services	800,000.00
	Activity 3. Workshops to identify potential water infrastructure works for interventions (large and small scale)	200,000.00	0.00	0.00	Operating Expenses	200,000.00
	Activity 4. Assessment of water infrastructure and use	1,100,000.00	0.00	0.00	Contractual Services	1,100,000.00
	Activity 5. Construction, procurement and installation of water works	0.00	3,800,000.00	2,650,000.00	Equipment and/or civil works	6,450,000.00
	8% GMS	180,000.00	304,000.00	212,000.00		696,000.00
Annual totals for Output 1.1		2,430,000.00	4,104,000.00	2,862,000.00		9,396,000.00

⁴² Cost definitions and classifications for programme and development effectiveness costs to be charged to the project are defined in the Executive Board decision DP/2010/32

⁴³ Changes to a project budget affecting the scope (outputs), completion date, or total estimated project costs require a formal budget revision that must be signed by the project board. In other cases, the UNDP programme manager alone may sign the revision provided the other signatories have no objection. This procedure may be applied for example when the purpose of the revision is only to re-phase activities among years.

⁴⁴ Further explanations on UNDP's costs are provided on the page following the Multi-Year Work Plan.

Total for Output 1.1						
EXPECTED OUTPUTS	PLANNED ACTIVITIES	PLANNED BUDGET			PLANNED BUDGET	
		Y1	Y2	Y3	Budget Description	Amount
Output 1.2: Improved income from better markets and enhanced agricultural value chain	Activity 1. Socio economic analyses around agricultural value add options in identified sub-catchments	70,000.00	0.00	0.00	Local consulting services	70,000.00
	Activity 2. Community mobilisation, prioritisation of small farmers and women food gardens and local government planning support of small initiatives	400,000.00	400,000.00	0.00	Direct contracting	800,000.00
	Activity 3. Implementation of selected food processing and support to enhancing markets	150,000.00	300,000.00	300,000.00	Equipment and/or civic works	750,000.00
	8% GMS	49,600.00	56,000.00	24,000.00		129,600.00
Annual totals Output 1.2		669,600.00	756,000.00	324,000.00		1,749,600.00
Output 1.2 Total budget						
EXPECTED OUTPUTS	PLANNED ACTIVITIES	PLANNED BUDGET			PLANNED BUDGET	
		Y1	Y2	Y3	Budget Description	Amount
OUTCOME.2: Enhanced water governance and local communities are actively engaged in WRM decision-making processes						
Output 2.1: Improved water governance	Activity 1. Institutional needs assessment and strengthening of NWRA, WUAs and water committees	0.00	281,000.00	281,000.00	consulting services	562,000.00
	Activity 2. Training and capacity building on building and sustaining an organisation, equity in allocations, water monitoring, compliance and enforcement of water management, food processing, marketing, etc	0.00	176,000.00	264,000.00	contracted trainers and operational tools for NWRA	440,000.00
	Activity 3. women custom made trainings on technical and soft skills; public speaking and women targeted initiatives	0.00	125,000.00	125,000.00	contracted trainers and business coaching	250,000.00
	8% GMS	0.00	46,560.00	53,600.00		100,160.00

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Annual total for Output 2.1		0.00	628,560.00	723,600.00		1,352,160.00
Output 2.1 total budget						
Total programmable Budget		3,099,600.00	5,488,560.00	3,909,600.00		12,497,760.00
PROJECT MANAGEMENT	Project Manager (P3)	252,800.00	252,800.00	192,110.00		697,710.00
	UNV - Water Specialist	70,000.00	70,000.00	70,000.00		210,000.00
	National Coordinator for Lahj	60,000.00	60,000.00	60,000.00		180,000.00
	National Coordinator for Taiz	60,000.00	60,000.00	60,000.00		180,000.00
	Reporting & M&E Specialist (IUNV)	60,000.00	60,000.00	60,000.00		180,000.00
	Admin & Finance	60,000.00	60,000.00	60,000.00		180,000.00
	Engineer	60,000.00	60,000.00	60,000.00		180,000.00
	Travel	12,000.00	15,000.00	15,000.00		42,000.00
	Evaluation		30,000.00	50,000.00		80,000.00
	Third-party Monitoring	10,000.00	10,000.00	10,000.00		30,000.00
	CO Oversight and Support to Implementation	265,600.00	265,550.00	265,358.22		796,508.22
	Common Costs Services (Accommodation, Security, Clinic, Transportation)	120,000.00	120,000.00	120,000.00		360,000.00
	Laptops & Office Equipment	20,000.00				20,000.00
	Communication and Feasibility	15,000.00	15,000.00	15,000.00		45,000.00
8% GMS	85,232.00	86,268.00	82,997.46		254,497.46	
Total PM costs		1,150,632.00	1,164,618.00	1,120,465.68		3,435,715.68
1% Levy						160,944.20
Total project allocations						16,094,419.88

Definition of Costs in UNDP Project Document

Project management costs covers the costs that are directly attributable to managing the implementation of the project and includes a contribution towards the salaries of the Project Staff that work on this project. Additionally, Project Management costs include direct costs relating to communication, audit, financial spot checks, monitoring and evaluation, translation support, IT equipment and travel related to project implementation.

Delivery Enabling Services (referred to in the project document as CO Oversight and Support to Implementation) is applied to the Project for the Programme and Operations support services that are provided by the UNDP Yemen Country Office, to enable implementation of the Project. DPS are organizational costs incurred in implementation of project activities or/ and services that can be directly traced and, attributed to that activity and/ or service. These costs therefore are included in the project budget and charged directly to the project budget (For example this covers costs relating to Procurement, Finance, HR, Admin & Logistics, ICT services, Programme oversight that are provided by the Country Office Programme and Operations Units).

General Management Support (GMS): Indirect or GMS costs are necessary to run the organization and support corporate structures which provide the platform for delivering programmes and projects. Indirect costs are costs and services that cannot be traced unequivocally and cost-effectively to specific activities, projects, or programmes. These costs are recovered by charging a cost recovery rate, known as a GMS fee, on all non-core resources. GMS is budgeted in accordance with UNDP's cost recovery policy using the minimum standard GMS rates, which for third-party cost sharing is 8%.

The 1% UN Coordination Levy: UN member states introduced a 1% levy on tightly earmarked financial contributions for development-related activities. The levy is an unprecedented instrument to set actual financial incentives for more efficient, multilateralism- and development-friendly ways of funding the whole UNDS. The Levy applies to all development projects and is paid through the Financing Agreements only by those Donor Countries that have selected the Agency Administered option with the UN Secretariat.

VIII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

UNDP will establish the Project Board as oversight and advisory authority, representing the highest body for coordination, strategic guidance, oversight and quality assurance. The body will facilitate collaboration between UNDP, KfW and Ministry of Irrigation and Agriculture and NWRA (Taiz and Lahj), and other stakeholders for the implementation of the Project. The Board will review and endorse the annual work plans (AWPs), will provide strategic direction and oversight, will review implementation progress, and will review narrative and financial progress reports.

The Board will be convened by UNDP in conjunction with KfW and meet at least on a 6-monthly basis. It will include senior programme managers from UNDP and KfW. The review meetings will be chaired by UNDP Resident Representative or OIC and attended by the KfW Portfolio Manager as well as the task leaders and middle management of the two agencies.

The Project Board will ensure tracking of safeguards compliance and performance as stipulated in the ESMF. The Board will oversee and review the implementation of the Safeguards Instruments, giving details of:

- a. measures taken in furtherance of the Safeguards Instruments.
- b. conditions, if any, which interfere or threaten to interfere with the smooth implementation of the Safeguards Instruments; and
- c. remedial measures taken or required to be taken to address such conditions and to ensure the continued efficient and effective implementation of the Safeguards Instruments.

A gender specialist can either be recruited to the project or from internal UNDP staff. The main tasks are to ensure that the project does achieve its targets of women meaningfully benefiting from the opportunities afforded in the project and beyond. Awareness raising and training in assertiveness skills will be needed to enhance participation (early on in the project). Detailed TOR for a gender specialist included in Annexes.

The main tasks of the Civil Engineer will be to design new infrastructure and ensure compliance of civil works. Detailed TOR for the Civil Engineer included in Annexes.

The IWRM expert is critical for the success of the project to ensure that all catchment assessments, participatory planning and facilitation of the 3D models, modelling, monitoring system, training and regulatory tools are in place. This expert will work closely with the Civil Engineer. It might be feasible to attract a Civil Engineer who specialises in water and is well versed in Hydrology, Hydraulics, modelling and IWRM principles.

IX. LEGAL CONTEXT
Option a. Where the country has signed the [Standard Basic Assistance Agreement \(SBAA\)](#)

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of the Republic of Yemen and UNDP, signed on 11 April 1977. All references in the SBAA to “Executing Agency” shall be deemed to refer to “Implementing Partner.”

This project will be implemented by [name of entity] (“Implementing Partner”) in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

UNDP (DIM)

1. UNDP as the Implementing Partner will comply with the policies, procedures and practices of the United Nations Security Management System (UNSMS.)
2. UNDP as the Implementing Partner will undertake all reasonable efforts to ensure that none of the [project funds]⁴⁵ [UNDP funds received pursuant to the Project Document]⁴⁶ are used to provide support to individuals or entities associated with terrorism, that the recipients of any amounts provided by UNDP hereunder do not appear on the United Nations Security Council Consolidated Sanctions List, and that no UNDP funds received pursuant to the Project Document are used for money laundering activities. The United Nations Security Council Consolidated Sanctions List can be accessed via <https://www.un.org/securitycouncil/content/un-sc-consolidated-list>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.
3. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (<http://www.undp.org/ses>) and related Accountability Mechanism (<http://www.undp.org/secu-srm>).
4. UNDP as the Implementing Partner will: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.
5. In the implementation of the activities under this Project Document, UNDP as the Implementing Partner will handle any sexual exploitation and abuse (“SEA”) and sexual harassment (“SH”) allegations in accordance with its regulations, rules, policies and procedures.
6. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.
7. UNDP as the Implementing Partner will ensure that the following obligations are binding on each responsible party, subcontractor, and sub-recipient:
 - a. Consistent with the Article III of the SBAA [*or the Supplemental Provisions to the Project Document*], the responsibility for the safety and security of each responsible party, subcontractor and sub-recipient and its personnel and property, and of UNDP’s property in such responsible parties, subcontractor’s and sub-recipient’s custody, rests with such responsible party, subcontractor and sub-recipient. To this end, each responsible party, subcontractor and sub-recipient shall:
 - i. put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried.
 - ii. assume all risks and liabilities related to such responsible party’s, subcontractor’s and sub-recipient’s security, and the full implementation of the security plan.
 - b. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall

⁴⁵ To be used where UNDP is the Implementing Partner

⁴⁶ To be used where the UN, a UN fund/programme or a specialized agency is the Implementing Partner

be deemed a breach of the responsible party's, subcontractor's and sub-recipient's obligations under this Project Document.

- c. Each responsible party, subcontractor and sub-recipient (each a "sub-party" and together "sub-parties") acknowledges and agrees that UNDP will not tolerate sexual harassment and sexual exploitation and abuse of anyone by the sub-parties, and other entities involved in Project implementation, either as contractors or subcontractors and their personnel, and any individuals performing services for them under the Project Document.
 - (a) In the implementation of the activities under this Project Document, each sub-party shall comply with the standards of conduct set forth in the Secretary General's Bulletin ST/SGB/2003/13 of 9 October 2003, concerning "Special measures for protection from sexual exploitation and sexual abuse" ("SEA").
 - (b) Moreover, and without limitation to the application of other regulations, rules, policies and procedures bearing upon the performance of the activities under this Project Document, in the implementation of activities, each sub-party, shall not engage in any form of sexual harassment ("SH"). SH is defined as any unwelcome conduct of a sexual nature that might reasonably be expected or be perceived to cause offense or humiliation, when such conduct interferes with work, is made a condition of employment or creates an intimidating, hostile or offensive work environment. SH may occur in the workplace or in connection with work. While typically involving a pattern of conduct, SH may take the form of a single incident. In assessing the reasonableness of expectations or perceptions, the perspective of the person who is the target of the conduct shall be considered.
- d. In the performance of the activities under this Project Document, each sub-party shall (with respect to its own activities), and shall require from its sub-parties (with respect to their activities) that they, have minimum standards and procedures in place, or a plan to develop and/or improve such standards and procedures in order to be able to take effective preventive and investigative action. These should include: policies on sexual harassment and sexual exploitation and abuse; policies on whistleblowing/protection against retaliation; and complaints, disciplinary and investigative mechanisms. In line with this, sub-parties will and will require that their respective sub-parties will take all appropriate measures to:
 - (i) Prevent its employees, agents or any other persons engaged to perform any services under this Project Document, from engaging in SH or SEA;
 - (ii) Offer employees and associated personnel training on prevention and response to SH and SEA, where sub-parties have not put in place its own training regarding the prevention of SH and SEA, sub-parties may use the training material available at UNDP;
 - (iii) Report and monitor allegations of SH and SEA of which any of the sub-parties have been informed or have otherwise become aware, and status thereof;
 - (iv) Refer victims/survivors of SH and SEA to safe and confidential victim assistance; and
 - (v) Promptly and confidentially record and investigate any allegations credible enough to warrant an investigation of SH or SEA. Each sub-party shall advise UNDP of any such allegations received and investigations being conducted by itself or any of its sub-parties with respect to their activities under the Project Document, and shall keep UNDP informed during the investigation by it or any of such sub-parties, to the extent that such notification (i) does not jeopardize the conduct of the investigation, including but not limited to the safety or security of persons, and/or (ii) is not in contravention of any laws applicable to it. Following the investigation, the relevant sub-party shall advise UNDP of any actions taken by it or any of the other entities further to the investigation.
- e. Each sub-party shall establish that it has complied with the foregoing, to the satisfaction of UNDP, when requested by UNDP or any party acting on its behalf to provide such confirmation. Failure of the relevant sub-party to comply of the foregoing, as determined by UNDP, shall be considered grounds for suspension or termination of the Project.
- f. Each responsible party, subcontractor and sub-recipient will ensure that any project activities undertaken by them will be implemented in a manner consistent with the UNDP Social and Environmental Standards and shall ensure that any incidents or issues of non-compliance shall be reported to UNDP in accordance with UNDP Social and Environmental Standards.
- g. Each responsible party, subcontractor and sub-recipient will take appropriate steps to prevent misuse of funds, fraud, corruption or other financial irregularities, by its officials, consultants, subcontractors and sub-recipients in implementing the project or programme or using the UNDP funds. It will ensure that its financial management, anti-corruption, anti-fraud and anti money laundering and countering the financing of terrorism policies are in place and enforced for all funding received from or through UNDP.

- h. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to each responsible party, subcontractor and sub-recipient: (a) UNDP Policy on Fraud and other Corrupt Practices (b) UNDP Anti-Money Laundering and Countering the Financing of Terrorism Policy; and (c) UNDP Office of Audit and Investigations Investigation Guidelines. Each responsible party, subcontractor and sub-recipient agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.
- i. In the event that an investigation is required, UNDP will conduct investigations relating to any aspect of UNDP programmes and projects. Each responsible party, subcontractor and sub-recipient will provide its full cooperation, including making available personnel, relevant documentation, and granting access to its (and its consultants', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with it to find a solution.
- j. Each responsible party, subcontractor and sub-recipient will promptly inform UNDP as the Implementing Partner in case of any incidence of inappropriate use of funds, or credible allegation of fraud, corruption other financial irregularities with due confidentiality.

Where it becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, each responsible party, subcontractor and sub-recipient will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). It will provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

- k. *Choose one of the three following options:*

Option 1: UNDP will be entitled to a refund from the responsible party, subcontractor or sub-recipient of any funds provided that have been used inappropriately, including through fraud corruption, other financial irregularities or otherwise paid other than in accordance with the terms and conditions of this Project Document. Such amount may be deducted by UNDP from any payment due to the responsible party, subcontractor or sub-recipient under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail any responsible party's, subcontractor's or sub-recipient's obligations under this Project Document.

Option 2: Each responsible party, subcontractor or sub-recipient agrees that, where applicable, donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities which are the subject of the Project Document, may seek recourse to such responsible party, subcontractor or sub-recipient for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud corruption or other financial irregularities or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Option 3: UNDP will be entitled to a refund from the responsible party, subcontractor or sub-recipient of any funds provided that have been used inappropriately, including through fraud corruption or other financial irregularities, or otherwise paid other than in accordance with the terms and conditions of the Project Document. Such amount may be deducted by UNDP from any payment due to the responsible party, subcontractor or sub-recipient under this or any other agreement.

Where such funds have not been refunded to UNDP, the responsible party, subcontractor or sub-recipient agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to such responsible party, subcontractor or sub-recipient for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud, corruption or other financial irregularities, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

- i. Each contract issued by the responsible party, subcontractor or sub-recipient in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with

- the selection process or in contract execution, and that the recipient of funds from it shall cooperate with any and all investigations and post-payment audits.
- m. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project or programme, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.
 - n. Each responsible party, subcontractor and sub-recipient shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to its subcontractors and sub-recipients and that all the clauses under this section entitled "Risk Management Standard Clauses" are adequately reflected, *mutatis mutandis*, in all its sub-contracts or sub-agreements entered into further to this Project Document.

X. ANNEXES

- 1. Theory of Change**
- 2. ERA Multiyear Budget & Budget Breakdown**
- 3. ERA Results Matrix**
- 4. ERA Project Risk Register**
- 5. ERA FVC Matrix**
- 6. ERA Implementation Plan**
- 7. ERA Project Overview**
- 8. ERA Social and Environmental Screening**
- 9. ERA Gender Marker LNOB Analysis**
- 10. ERA ToR of main positions**

Annex 1: Theory of Change

Building upon the problem analysis presented above, and the overall development challenge of reduced livelihood resilience due to an increased risk of water scarcity and food insecurity as well as inappropriate water governance; three main areas of intervention are pursued under this project:

Increasing water availability for agricultural production
Increasing income from better markets and enhanced agricultural value chain
Improving water governance

The figure below, summarizing the ERA theory of change, visually represents the pathway towards ERA's contribution to the longer-term goal of enhanced livelihood resilience through the development and rehabilitation of water infrastructure enhancing water availability in support of sustainable agriculture, implemented at key priority areas within a catchment. To enhance the target communities' resilience, ERA asserts that the project will adopt a holistic and integrated approach which ultimately will be internalized for self-reliance and capacity to plan for and manage water scarcity.

The chain of results as envisioned in this Theory of Change helps realize the overall outcome of contributing to the achievement of the 2022-2024 United Nations Sustainable Development Cooperation Framework (UNSDCF⁴⁷) Outcome 1: "By 2024, people in Yemen, especially women, adolescents and girls and those in the most vulnerable and marginalized communities benefit from better, equal and inclusive access to nutritious food, sustainable and resilient livelihoods and environmental stability".

The ERA project will contribute to change so that agricultural production and food security will be increased through improved water storage and distribution as well as improving groundwater sustainability with the enhancement of water infrastructure and traditional flood mitigation techniques. In addition, better income will be witnessed from supporting agricultural value add initiatives and removing some of the impediments to marketing these products. Finally, water governance and management will be improved through the support to local water management institutions in effecting better governance mechanisms with emphasis on enhancing women participation in decision making. As such, the economically and politically deprived Yemenis whose livelihoods are dependent on primary water sources have better access to the resource, actively participating in decision-making platforms making informed decisions by using robust water knowledge. Water resources management is transformed into a science based participatory process that enhances equity in access to water sources specially to the small and women farmers as well as IDPs in the respective areas.

The rationale behind choosing the set of outputs for achieving the proposed outcomes is based on the main assumptions on ERA's contribution to change:

- **if** integration of water sources (surface and groundwater) in planning is improved,
- **if** renewable water resources harvesting/storage is enhanced,
- **if** existing water infrastructure are rehabilitated,
- **if** traditional agricultural terraces are functional
- **if** IWRM is implemented
- **if** water allocations decision making is improved,
- **if** agricultural value add is improved,
- **if** market accessibility obstacles are removed,
- **if** water governance is coordinated at various levels,
- **if** women farmers are empowered,
- **if** Water Management Institutions are strengthened and capacitated.
- **if** regulation and compliance of water use is improved

⁴⁷ https://unsdg.un.org/sites/default/files/2022-06/Yemen-Cooperation_Framework-2022-2024.pdf

- **then** water availability to agriculture will be enhanced,
- **then** food security and livelihood resilience will be enhanced,
- **then** water will be accessible to historically marginalised,
- **then** livelihood and income will be increased,
- **then** roles and responsibilities for water management will be better defined and implemented,
- **then** sustainability of interventions will be enhanced.

The proposed theory of change is dependent on various external factors; the partners are supportive of this project in both Governorates, buy in and cooperation from national Ministries of Water and the Environment and that of Agriculture, Irrigation and Fisheries is secured for the success of the project, sub-national NWRA and district authorities in both Lahj and Taiz are supportive, project upscaled into the HDP Nexus Area Based interventions in Taiz.

Finally, project support through technical advisory, process facilitation, capacity building and financial inputs should result into shifts in capacities and conditions for economic, institutional, and environmental enhancements.

DRAFT THEORY OF CHANGE: Integrated Water Resource Management (IWRM) to enhance Resilience of Agriculture (ERA) and food security

