Terms of Reference

For the Subcontracting of the on-site Technical Implementation of Hydro-Technologies and the Engagement of Local Actors in Morocco.

In the framework of
the "NEGLECTED AND UNDERUTILIZED SPECIES FOR WATER HARVESTING AND BUILDING CLIMATE CHANGE RESILIENCE" project
NUSTALGIC

Under:
Grant Agreement number: [2411] [NUSTALGIC] [Call 2024 Section 1 Farming in Nexus]

The NUSTALGIC project is part of the PRIMA programme supported by the European Union through the project "Neglected and Underutilized Species for waTer hArvesting and buiLdinG clImate Change resilience (NUSTALGIC)", grant agreement No. 2411.

1. Background

1.1. The "NUSTALGIC" Project

The Project is part of the PRIMA programme supported by the European Union through the project "Neglected and Underutilized Species for waTer hArvesting and buiLdinG clImate Change resilience (NUSTALGIC)", grant agreement No. 2411.

NUSTALGIC aims to transform Mediterranean dry-farming systems by reviving ancestral water-harvesting techniques and integrating drought-tolerant neglected and underutilized species (NUS), such as barley, legumes, and cacti, to respond to climate change, water scarcity, and the growing need for sustainable food production. By uniting transdisciplinary expertise across Portugal, Tunisia, Morocco, Italy, Greece, Jordan, Lebanon, and Spain, the project aims to improve water availability and efficiency by more than 20%, increase agricultural yields by 15–20%, and enhance soil health through nature-positive and circular economy approaches. Implemented through demonstration sites and integrated management of hydro-technologies and resilient crops, NUSTALGIC will stimulate the development of new NUS-based food, feed, and non-food products, value chains, and employment opportunities, particularly for women and youth. Through a multi-stakeholder engagement strategy and Dry-farming system multi-actor Innovation Platforms (DRIPS), the project will promote knowledge co-creation, farmer-to-farmer learning, policy uptake, and gender equity, ultimately supporting the adoption of innovative practices, healthier diets, and more inclusive and climate-resilient Mediterranean rural communities in line with the UN SDGs 2030 Agenda.

The project is coordinated by Universidade Católica Portuguesa (UCP) and it is composed of a consortium of eleven (11) Project Partners is total. Specifically:

- Universidade Católica Portuguesa (UCP), Portugal
- International Center for Agricultural Research in the Dry Areas (ICARDA), Morocco
- Lebanese Agricultural Research Institute (LARI), Lebanon
- American University of Beirut (AUB), Lebanon
- Lebanese American University (LAU), Lebanon
- National Institute of Agronomic Research of Tunisia (INRAT), Tunisia
- Institut National de Recherches en Génie Rural, Eaux et Forêts (INRGREF), Tunisia
- Agencia Estatal Consejo Superior de Investigaciones Científicas (CSIC), Spain
- Methods for Irrigation and Agriculture (MIRRA), Jordan
- Oxfam Italia (OIT), Italy
- Mediterranean Information Office for Environment, Culture & Sustainable Development (MIO-ECSDE) as Host Institute and legal body representing Global Water Partnership–Mediterranean (GWP-Med)

1.2. Work Package 2 of NUSTALGIC Project

Title: Water Harvesting and Efficiency

Objectives:

O2.1. Identify and involve all key stakeholders for achieving the overall objectives.
O2.2. Select water harvesting technologies and co-design packages with the stakeholders (especially farmers).
O2.3. Deploy the designed water harvesting technologies on demonstration sites.
O2.4. Promote stakeholder ownership for the sustainability of selected techniques beyond the project timeline.
O2.5. Evaluate the performance of the deployed water harvesting technologies and finalize their design.

Deliverables:
D2.1. Multi-actor assessment of Water Harvesting Technologies (M4)
D2.2. Deployment of Water Harvesting Technologies (M17)
D2.3. Periodic evaluation of the applied Water Harvesting Technologies (M26, 34)
D2.4. Completion of cost/benefit analysis of technologies (M34)

Milestones:
MS2.1. Water Harvesting Technologies Design per Area (Engineering process)
MS2.2. Approval of involved actors on the designs of the Water Harvesting Technologies (Signed approval documents)
MS2.3 Tender award for the deployment of the Water Harvesting Technologies (With farmers in demonstration site)

WP2 is described in detail in Annex 1A

1.3. Work Package 6 of NUSTALGIC Project
Title: Gender-responsive multi-actor engagement and dissemination

Objectives:
O6.1. Engage multiple stakeholders using DRIPS to generate income and gender-transformative solutions for NUS crop cultivation (integrating agricultural practices for water, agronomy, and soil management) and consumption
O6.2. Empower women in agriculture by recognizing their contributions, addressing gender disparities, and promoting leadership opportunities
O6.3. Create and disseminate communication materials in multiple languages showcasing the social, economic, and technical innovation bundles of NUSTALGIC for key stakeholders in the participating countries and other interested parties

Deliverables:
D6.1. Plan for Exploitation and Dissemination of Results (PEDR) (M18)
D6.2. Approach co-developed and impacts co-assessed for farmers' engagement updated every 6 months (M33)

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D6.3. Approach co-developed and impacts co-assessed for education and awareness initiatives on consumption patterns and domestic gender roles (internally updated at M12 and M24, and delivered at M33)
D6.4. Approach co-developed and impacts co-assessed for evidence-based policy and programmatic actions (internally updated at M21, M27 and M30, and delivered at M33)
D6.5. Dissemination of materials to key stakeholders in the participating countries and other interested parties, highlighting the project's results and lessons learned (internally updated at M12 and M24, and delivered at M34)

Milestones:
MS6.1. Establishment of a gender-balanced Advisory Committee (Committee appointed)
MS6.2. Famers selection (open call) and outreach guidelines (Guidelines available and disseminated to partners)
MS6.3. Participatory farmers selected (20 per DRIPS) [List of farmers names (50-50 women and men)]
MS6.4. Sex-disaggregated baseline and endline surveys on farming practices and adoption, gender norms, and women's empowerment levels (Survey completed and translated to local languages)
MS6.5. Reports on farmers, consumers, and decision-makers engagements (Reports shared for co-learning among partners)
MS6.6. Guidelines for Women Farmer Hero Day (Guidelines available and disseminated to partners)
MS6.7. Development of the recipe day action plan (Guidelines available and disseminated to partners)
MS6.8. Policy briefs and policy roundtables (Guidelines available and disseminated to partners; Policy briefs prepared and shared widely, including in local language)
MS6.9. Ten (10) dissemination actions implemented per country

WP6 is described in detail in Annex 1B

2. Description of the Assignment

2.1. Objective
The objective of the subcontracting assignment is for the successful subcontractor to assist ICARDA, Morocco with the on-site Technical Implementation of specific Hydro-Technologies (WP2) and with the Engagement of Local Actors (WP6), for the smooth operation of the project in the country.

2.2. Requested Services
Specifically, the successful subcontractor will assist ICARDA with the following Tasks, as described in Annex 1A and 1B:

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- Task 2.1. Includes a multi-actor assessment of water harvesting technologies, including stakeholder mapping and evaluation of ancestral hydro-technologies adapted to modern farmland.
- Task 2.2. Covers the co-design of water harvesting technology packages with stakeholders (especially farmers), selecting the most suitable options for demonstration sites.
- Task 2.3. Focuses on the deployment of the designed water harvesting technologies on demonstration sites to test their feasibility and performance under real conditions.
- Task 6.1. Emphasizes engaging stakeholders through continuous field visits, workshops, and demonstration site activities, ensuring that women and youth are explicitly included.
- Task 6.3. Centers on policy discussions and joint workshops to translate project findings into actionable recommendations and foster uptake by decision-makers.

Regarding the water harvesting technologies, the successful subcontractor will implement two (2) Khetaras-like systems composed of perforated ducts and underground tanks, combined with pitting in the farms.
The selected farms are located in Settat and Khemiset, Morocco.
The technologies are described in detail in Annex 2A and 2B.

2.3. Assignment Outputs / Deliverables

The output of the assignment is for the successful subcontractor to provide the following, in compliance with NUSTALGIC Project operations:

A/A	Service / Task	Unit	Quantity	Deadline
1	Support ICARDA finalize the Multi-Actor Assessment, as described in Task 2.1 of WP2 (Annex 1A).	Lump sum	1	One (1) month after the contract date
2	Delivery of the preliminary designs for the two (2) Khetaras-like systems, combined with pitting, as described Task 2.2 of WP2 (Annex 1A) and Annex 2A & 2B.	Lump sum	1	Two (2) months after the contract date
3	Delivery of the final designs for the two (2) Khetaras-like systems, combined with pitting, as described Task 2.2 of WP2 (Annex 1A) and Annex 2A & 2B.	Lump sum	1	Three (3) months after the contract date
4	Implement the two (2) Khetaras-like systems, combined with pitting, as described in Task 2.3. and in compliance with the designs which are to be conducted under the current assignment.	Lump sum	1	Six (6) months after the contract date
5	Completion of the following sub-tacks (completion of Contract): Implementation of three (3) Water Days, as described in Task 2.1 of WP2 (Annex 1A). Engaging stakeholders through continuous field visits, workshops, and demonstration site activities, ensuring that women and youth are	Lump sum	1	Twenty-five (25) months after the contract date

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	explicitly included, as described in Task 6.1 (Annex A2) Facilitate policy discussions and joint workshops to translate project findings into actionable recommendations and foster uptake by decision-makers, as described in Task 6.3 (Annex A2)			

The Awarded Subcontractor who will need to be readily available to perform the required tasks.

This tender is not divided into lots.

2.4. Obligations

The specific obligations are presented in Annex 3.

2.5. Health and Safety Precautions

Responsibility for all aspects concerning health and safety issues for the duration of this project is vested entirely in the subcontractor entrusted to do this job, who will exercise all control over operations, materials, employees, and all other factors respecting health and safety norms.

2.6. Reporting line

The Awarded Subcontractor will communicate directly with Dr. Nikos Skondras, Senior Program Officer at GWP-Med (Contracting Authority), and Dr. Dina Najjar, Senior Gender Scientist at ICARDA, and Co-Coordinator of NUSTALGIC Project (Supervising Authority).

2.7. Monitoring and Progress Control

Dr Nikos Skondras, Senior Programme Officer at GWP-Med, Mr. Charalampos Lappas, Programme Officer at GWP-Med, and Dr. Dina Najjar, Senior Gender Scientist at ICARDA will be providing oversight and guidance from the side of the Project Team.
Coordination calls between the Awarded Subcontractor, the Supervising and Contracting Authorities at weekly basis, to monitor the progress of the assigned services.
Services will be rendered and will be considered completed upon approval of the deliverables by the Supervising Authority.

2.8. Site Visit

The bidders must visit the location of the technical intervention in order to have an understanding of the actual conditions on the spot and be able to prepare their technical offer and assess the situation for the preparation of their financial offer.
The site visit will be arranged in coordination with the Supervising Authority.

2.9. Work Permissions

The Supervising Authority will assist the Awarded Subcontractor obtain any permit required for the completion of the assignment's tasks.

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2.10. Language

All the necessary documentation will be submitted in English.

3. Duration of the Contract

Delivery of the tasks / deliverables should be completed by 28/04/2028.
The overall duration of the contract will be maximum by 31/05/2028.

The date of the commencement of the contract execution shall be the last signing of the contract.

4. Contract Price, Schedule of Payments

The maximum fee for this assignment is **80,000 EUR (including VAT)**. This amount includes all other costs, income taxes and any other amount payable or cost that may be required for the completion of the service.

The schedule of payments is as follows:

Deliverable	Payment	Deadline of payment
Completion of Task 1: Completion of the Multi-Actor Assessment in Morocco	10% of contract	Two (2) months from contract signature
Completion of Task 2: Delivery of preliminary designs	20% of contract	Three (3) months from contract signature
Completion of Task 3: Delivery of the final designs	20% of contract	Four (4) months from contract signature
Completion of Task 4: Completion of the technical work, including two (2) Khetaras-like systems, combined with pitting	40% of contract	Seven (7) months from contract signature
Completion of Contract: Completion of	10% of contract	Twenty-six (26) months from contract signature

Each payment will be issued upon the contractor's request and after receiving the respective verification from the Supervising and Contracting Authorities.

In the event that there are delays in the execution of the contract the awarded contractor is liable to a deduction of €100 per day, for every day of delay, including Sundays and public holidays, up to a maximum of 10% of the contracted amount in case there are delays in the execution.

5. Selection Criteria (Pass / Fail)

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Successful participants must provide the following documents:

A. Technical Offer:

- Be enrolled in one of the official professional or trade registries at the country of registration.
- Be licensed to perform works in Morocco.
- Proof of having minimum duration of operation of ten (10) years. Proof to be provided by the related chamber (date of registration).
- Provide a signed statement of availability of resources (e.g. financial, tools, equipment, personnel / technicians) to perform the requested tasks (either own resources or through collaboration).
- Provide a signed statement of understanding the requested objective, services, and deliverables.
- Provide indicative timetable (Gantt Chart) for the implementation of the Khetaras-like systems, combined with pitting.
- Provide proof of their average annual turnover for the last three (3) fiscal years being at least equivalent to the maximum amount of this Call proven through Financial Statements (Income Statement and Balance Sheet) of the last three years duly certified by a Public Accountant, and with authentication of receiving by the Government's Internal Revenue Authority. Include any indication of credit rating, industry rating, etc.
- Provide proof of having completed at least:
  - One (1) water related project, in the last five (5) years, in collaboration with local teams to create solutions using local building practices, workers, and materials. Projects in progress are also legitimate.
  - One (1) capacity building related project, in the last five (5) years. Projects in progress are also legitimate.
  - One (1) cultural preservation related project, in the last five (5) years. Projects in progress are also legitimate.
  - One (1) women empowerment related project, in the last five (5) years. Projects in progress are also legitimate.
- Provide proof of visiting the location of implementation of the requested works in the preset period (signed by the Supervising Authority).
- Provide a signed statement mentioning that the equipment which will be used for the implementation of the Khetaras-like systems will be new and unused.

B. Financial Offer (Annex 4)

6. Awarding Criterion and Evaluation Process

Award criterion is the Most Economically Advantageous offer with criterion the lowest price for the offers satisfying the selection criteria.

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7. Submission of Offers

Please refer to the **Call for Offers Document** for the proper submission of the Technical and Financial Offer.

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ANNEX 1 – NUSTALGIC Work Packages

A. Work Package 2

Title: Water Harvesting and Efficiency
Lead beneficiary: GWP-Med
Co-Lead beneficiary: MIRRA
Start month: 2 / End month: 34

Objectives:

- **O2.1.** Identify and involve all key stakeholders for achieving the overall objectives.
- **O2.2.** Select water harvesting technologies and co-design packages with the stakeholders (especially farmers).
- **O2.3.** Deploy the designed water harvesting technologies on demonstration sites.
- **O2.4.** Promote stakeholder ownership for the sustainability of selected techniques beyond the project timeline.
- **O2.5.** Evaluate the performance of the deployed water harvesting technologies and finalize their design.

Work Description:

Task 2.1. Multi-actor assessment of water harvesting technologies (LAU, GWP-Med, MIRRA, INRGREF, CBQF-UCP, ICARDA) (M2-M4):

In collaboration with WP6, a comprehensive stakeholder mapping exercise will be undertaken to identify their willingness to engage with the project. This exercise will involve evaluating the potential impacts of ancestral hydro-technologies adapted to modern farmland. The project will compare the trial results of selected water harvesting technology packages against conventional (baseline) practices to highlight their benefits, foster a sense of ownership among stakeholders, and encourage broader adoption. To support these goals, annual Water Days will be organized at each demonstration site. These events will bring together target beneficiaries, as well as regional and central authorities, to showcase the effectiveness of the water harvesting technologies. Additionally, a multi-actor assessment will be conducted to address water scarcity and insecurity issues exacerbated by climate change across the Mediterranean Region (D2.1).

Task 2.2. Design and Deployment of Water Harvesting Technologies (M5 – M17):

The selected technologies are the following (details for countries in Table 1): Tech 1. Rooftop rainwater harvesting: this technique (one of the oldest and most widely practiced) involves installing tanks, roof gutters, a first flush container, downpipes, and a solar-powered pump with solar panels. It is designed to support small-scale agricultural activities around homes, particularly benefiting women involved in family businesses and women-led enterprises. The captured rainwater will be used to irrigate gardens (including NUS and other plants), provide livestock

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drinking water, and meet other domestic needs. Tech 2. Khetaras-like systems combined with pitting in the farms: Khetaras are traditional networks of underground tunnels and open channels that transport water from aquifers to fields and villages, minimizing evaporation. In NUSTALGIC, a network of underground plastic tanks and perforated drainage ducts will be constructed at selected farms, retrofitted with solar panels and pumps for irrigation. Additionally, pitting (as described in Tech 5) will be used to complement this system. Tech 3. Canals at the foot of natural slopes combined with storage tanks: this method involves constructing canals at the base of natural slopes to capture and direct rainwater runoff into a storage pond. The system will use geotextiles, plastic canals, and/or plastic grades, with the storage pond equipped with solar panels and pumps to enable irrigation and other uses. Tech 4. Rehabilitation of Majels: majels, traditionally used for storing rainwater from roofs and terraces, will be rehabilitated and/or reintroduced. Each majel comprises an inclined surface (impluvium), a sediment settlement basin, and a storage reservoir. The restored majels will provide water for irrigation and other uses, aiding local communities in adapting to drought conditions. Solar panels and pumps will be installed for irrigation. Tech 5. Pitting: this technique involves digging small basins or holes (50–100 liters) to intercept and allow rainwater to infiltrate the soil. Pits can be filled with materials to enhance drainage and will be adapted based on soil type, slope, rainfall, and cropping patterns. Tech 6. Rehabilitation of earth terraces: agricultural terraces, with origins tracing back to the Bronze Age in regions such as Lebanon, Tunisia, and Morocco, will be rehabilitated. These one-meter-high earth embankments arranged across slopes, help reduce soil erosion, maximize water infiltration, and enhance soil fertility. The rehabilitation efforts will improve water infiltration and retention.

T2.2.1. Design of Water Harvesting Technologies (GWP-Med, MIRRA, INRGREF, LAU, CBQF-UCP, ICARDA) (M5-M7): Based on the findings from T2.1, stakeholders will select the most suitable technologies from those outlined in T2.2 and collaboratively design context-specific packages for deployment in the demonstration sites of Jordan, Tunisia, Morocco, and Lebanon, as well as Portugal. The primary aim is to enhance irrigation and overall water security during drought conditions, while also providing additional water for selected crops in WP3. The design process will actively involve relevant stakeholders, especially women and vulnerable groups, throughout concept development, overall design, and procurement approval. The proposed design will include mechanisms to monitor KPIs such as water availability (e.g. soil moisture sensors and stored water availability), water efficiency (e.g., consumed water for irrigation versus crop yield), and water use (e.g., flow meters) to assess the performance of the installed technology packages. Documents related to the design and studies will be made publicly available to ensure transparency and shared learning.

T2.2.2. Deployment of Water Harvesting Technologies (INRGREF, GWP-Med, MIRRA, LAU, CBQF-UCP, ICARDA) (M8-M17): Upon completion of the design and tendering process outlined in T2.2.1, construction and installation will begin. This phase will be carried out under the joint mentorship of the project team, local partners, and other key stakeholders to ensure effective

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implementation. The specifics of this process, including the As-Built designs and the Operation & Maintenance Guidebook, will be detailed in D2.2.

Task 2.3. Monitoring and Evaluation of Water Harvesting Technologies (MIRRA, GWP-Med, INRGREF, LAU, CBQF-UCP, ICARDA) (M18-M34): The monitoring and evaluation of the water harvesting technology packages will be guided by KPIs focusing on water availability and water efficiency. Additional indicators will include local precipitation, temperatures, and soil moisture levels. Data collected by participating farmers and local consortium partners will be instrumental in assessing the effectiveness of the technologies in enhancing water availability in conjunction with improved soil water retention under WP3. Each technology will be evaluated by comparing data against a baseline (e.g., for Rooftop Water Harvesting: storage before the project = 0 / after the project = X) and against a reference farm or plot (e.g., for Pitting: soil moisture in farms with pitting versus the reference farm). Water efficiency KPIs will be measured similarly, using reference farms for comparison. Precipitation and temperature data will be monitored via agro-stations. The results of this evaluation will be documented in D2.3. A cost/benefit analysis will also be conducted to assess the efficiency and affordability of the technology packages before scaling up and replicating them among secondary farmers and indirect adopters (D2.4).

Deliverables:
D2.1. Multi-actor assessment of Water Harvesting Technologies (M4)
D2.2. Deployment of Water Harvesting Technologies (M17)
D2.3. Periodic evaluation of the applied Water Harvesting Technologies (M26, 34)
D2.4. Completion of cost/benefit analysis of technologies (M34)

Milestones:
MS2.1. Water Harvesting Technologies Design per Area (Engineering process)
MS2.2. Approval of involved actors on the designs of the Water Harvesting Technologies (Signed approval documents)
MS2.3. Tender award for the deployment of the Water Harvesting Technologies (With farmers in demonstration site)

B. Work Package 6
Title: Gender-responsive multi-actor engagement and dissemination
Lead beneficiary: OXFAM
Co-Lead beneficiary: ICARDA
Start month: 1 / End month: 36

Objectives:

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- **O6.1.** Engage multiple stakeholders using DRIPS to generate income and gender-transformative solutions for NUS crop cultivation (integrating agricultural practices for water, agronomy, and soil management) and consumption
- **O6.2.** Empower women in agriculture by recognizing their contributions, addressing gender disparities, and promoting leadership opportunities
- **O6.3.** Create and disseminate communication materials in multiple languages showcasing the social, economic, and technical innovation bundles of NUSTALGIC for key stakeholders in the participating countries and other interested parties

Work Description:

T6.1 Engagement of farmers in the co-creation and dissemination of technological packages (ICARDA, all partners) (M2-M36):

The planned activities for dissemination and engagement of stakeholders will be outlined in a PEDR and updated periodically. The stakeholders will be mapped, and GWP-Med will prepare a stakeholder engagement plan (included in the PEDR). This plan will include a communication matrix (Target Audience, Communication Vehicle, Message, Objective, Timing, Owner, Feedback, Status) to ensure optimal implementation. This will be done in interaction with WP5. In Year 1, women and men farmers from the selected regions will participate in monthly visits to 'inspirational sites' to develop the skills for establishing their own demonstration plots (included in PEDR). These visits will cover farming techniques for machine-harvestable legume varieties, increasing crop yields, maximizing water efficiency, incorporating water harvesting, and improving NUS crop cultivation (WP2 and 3). These technical interventions will be paired with efforts to enhance social awareness and create sustainable income opportunities. WP6 will facilitate community discussions to challenge harmful gender norms, such as unpaid labor, unfair wages, and limited decision-making opportunities for women, while emphasizing the benefits of women's leadership. The project will also highlight the cost-saving potential of innovations and marketing opportunities for NUS crops and their by-products developed in WP5. From this group, we will select 20 Primary Farmers per DRIPS (one man and one woman from each of the ten targeted villages) through an open call to establish demonstration sites. In Year 2, Primary host farmers will provide feedback on the first year's activities and lessons learned to i) refine practices for NUS crop dryland farming productivity and profitability and, ii) address harmful gender norms in their communities. Women's empowerment will be promoted by redefining women as active farmers and service providers and addressing harmful gender norms at the community level. Primary host farmers will be provided with a participatory grant to implement NUSTALGIC innovations on their farms and lead monthly learning and discussion sessions with 15 new Secondary Farmers of the same gender at each demonstration site. To foster ownership, farmers will co-invest in NUSTALGIC technologies that they help design and implement. Monthly meetings will continue throughout the project, fostering a learning-exchange between researchers, decision-makers, and farmers alike, with researchers regularly sharing updates on soil, income indicators, water, and other factors. In year 2, cactus, a successful NUS crop, will be promoted. After screening for suitable cacti in year 1, resistant varieties will be multiplied on the primary

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host farmers' fields for natural fencing and soil stabilization (WP3). Cladodes will be distributed by the primary host farmers to secondary and other interested farmers. Integrated Pest Management (IPM) practices and awareness-raising efforts to control cactus pests and diseases will be carried out on-farm, with information dissemination through the farmer-to-farmer monthly sessions. Traditional knowledge will be leveraged to identify natural enemies of the cochineal insect. Similarly, primary host farmers will multiply seeds of other NUS crops on their farms for wider introduction and dissemination in the demonstration plots. Adoption rates and willingness to adopt water management, machinery use, soil fertility, and agronomic practices will be evaluated, targeting a 10% profit margin increase by project end. We aim for a 20% adoption rate in ten surrounding villages per DRIPS, involving approximately 300 farmers per demonstration site (equally divided between men and women) as direct beneficiaries, including both primary and secondary farmers (D6.2). Additionally, we will assess changes in gender norms, striving for a shift in behavior towards more gender-equitable norms among 30% of participants (both women and men), with a 20% increase in women's empowerment using the "Reach, Benefit, Empower, Transform" lens. The project will include promotional events held at the country level during the second and third years, alongside "Recipe Day," to showcase the integration of various practices.1. "Women Farmer Hero Day" will be held annually to recognize the contributions of women as farmers and leaders. This event will also serve to promote women as entrepreneurs and leaders of social enterprises in the agribusiness sector, targeting cumulatively at least 600 individuals (50 people in each of the three events in the four countries, Lebanon, Jordan, Tunisia and Morocco) in the rural and urban areas out of which 60% women and 30% youth (defined as individuals below the age of 24). 2. Water Day will be organized yearly to promote awareness about water harvesting and efficient water use in agriculture, targeting farmers in the demonstration areas and beyond with educational material included in a comprehensive manual. 3. Field Days will occur annually to highlight the project's crops, machinery and agronomy innovations within the demonstration sites and in wider contexts, with educational materials included in a comprehensive manual.

T6.2 Engagement of consumers (LARI, MIRRA, OXFAM, INRAT, ICARDA, AUB, CBQF-UCP) (M6-M36):

We will promote Recipe Days. in both urban and rural areas, with two main goals: to raise women's and especially men's awareness of harmful gender norms that enforce inequality and to promote healthy eating. Recipe Days will focus on improving gender relations between spouses by involving husbands to participate in activities traditionally considered a woman's role. The event will also engage youth and other consumers, emphasizing diet diversification and the health benefits of legumes and barley. Awareness-raising activities will include sessions on the advantages of buying local produce, comparing the nutritional value of local foods with cheap imports and fast food, and promoting products from marginalized women cooperatives. Each event will revive forgotten recipes and the development of new ones, such as incorporating lentil or barley flour into bread. Ten Recipe Days in each country, engaging 400 consumers (50% men and 50% women), with 50% being youth. Findings from the MedWhealth project suggest that well-off consumers are willing to pay a premium for food labels that signify "women power",

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"healthy", and "local", indicating a promising opportunity for our products and recipes. Surveys will be conducted before and after each event to evaluate shifts in knowledge, awareness, and the distribution of domestic responsibilities, as well as to gather participant feedback for improving subsequent Recipe Day events. We aim to increase awareness and knowledge in 90% of participants, with 30% intending to change their behavior toward the two goals (D6.3).

Task 6.3 Engaging decision-makers (OXFAM, all partners) (M3-M36): PAC each consisting of 20 key actors from each DRIPS (4) will visit demonstration sites during integrated national events and provide ongoing feedback to the project team throughout its implementation. These committees will be gender-balanced and include staff from local research institutions (many already part of the group), and representatives from living labs in the region (such as the CWANA Living Lab, the European Network of Living Labs), as well as donors, private sector stakeholders, policymakers, and international experts (those identified in WP1 on the ABC). The project will build on the advisory committees developed for the MountainHer project in Lebanon, Morocco, and Tunisia, and establish new committees in Jordan. The PAC will convene every six months to review project updates, address constraints, and discuss findings through workshops and focus groups. This process is integral to our DRIPS approach, which focuses on co-developing solutions to obstacles encountered during planning and implementation, raising the visibility of successful outcomes, and facilitating the scaling-up of innovations. Evidence suggests that women in key decision-making roles will likely reduce the cultural gender barriers in agriculture. In particular, the PAC will align its efforts with national priorities and find ways to strengthen women's roles as agricultural entrepreneurs (including as farmers). The PAC will also promote NUS diets, products, and by-products and provide technical advice on various aspects such as releasing different crop varieties, seed multiplication, adopting revived water harvesting practices, project-related machinery, and scaling up successful techniques and innovations. The PAC will work closely with the project team to develop six policy briefs, one in each DRIPS, one in Portugal and one overarching brief for the Mediterranean region. These policy documents will translate lessons learned from the project's interventions into national policy proposals. They will address critical issues such as mitigating job losses for women agricultural workers through social protection, retraining, and reintegration. Additionally, they will focus on national policies that promote NUS diets, products, and by-products, mechanization, conservation agriculture, and water harvesting, and include subsidies and credit schemes. The briefs will also advocate for the project's gender-sensitive multi-stakeholder transdisciplinary approach that fosters dialogue, learning, and collaboration to support iterative co-design and implementation of activities during pause-and-reflect processes. In the third year, each policy brief will be discussed at roundtable meetings in each of the four DRIPS with the PAC and other relevant stakeholders. We will conduct both baseline and endline assessments with the decision-makers, aiming for 20% of the 80 engaged decision-makers to actively use NUSTALGIC evidence and implement its policy briefs (D6.4).

Task 6.4 Communication and dissemination of findings (GWP-Med, all partners) (M6-M36):
We will share our project findings and recommendations at both national and international level by creating films and hosting radio programs featuring local farmers to boost adoption and

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address literacy barriers. We will prepare country-specific extension packages and learning summaries, translated into the host countries' languages, to enable cross-country learning exchanges. These materials will focus on socio-technical bundles, strengthening social enterprises and introducing responsible mechanization. Furthermore, the project team members will leverage their active presence in working groups and networks (e.g., "A Soil Deal for Europe," UN ESCWA task force, National Livelihoods and Food Security working groups, CGIAR Gender Impact Platform, special session in an international conference on water and food security, working group on agroecology (SWG-AE), ALL-READY and AE4EU projects) to disseminate project findings. We will also target talk shows (e.g., morning shows, 'back to our traditional diet' show in Lebanon), radio programs (e.g., 'Seasons' running in Tunisia), and agricultural forums (e.g., SIAM in Morocco), opinion papers and press releases for general media in NUSTALGIC countries and for relevant scientific journals to further disseminate findings, successful approaches, and recommendations (D6.5). Additionally, a website and social media platforms will be developed, with constant updates about our deliverables/outputs, events, and activities.

Deliverables:

D6.1. Plan for Exploitation and Dissemination of Results (PEDR) (M18)

D6.2. Approach co-developed and impacts co-assessed for farmers' engagement updated every 6 months (M33)

D6.3. Approach co-developed and impacts co-assessed for education and awareness initiatives on consumption patterns and domestic gender roles (internally updated at M12 and M24, and delivered at M33)

D6.4. Approach co-developed and impacts co-assessed for evidence-based policy and programmatic actions (internally updated at M21, M27 and M30, and delivered at M33)

D6.5. Dissemination of materials to key stakeholders in the participating countries and other interested parties, highlighting the project's results and lessons learned (internally updated at M12 and M24, and delivered at M34)

Milestones:

MS6.1. Establishment of a gender-balanced Advisory Committee (Committee appointed)

MS6.2. Famers selection (open call) and outreach guidelines (Guidelines available and disseminated to partners)

MS6.3. Participatory farmers selected (20 per DRIPS) [List of farmers names (50-50 women and men)]

MS6.4. Sex-disaggregated baseline and endline surveys on farming practices and adoption, gender norms, and women's empowerment levels (Survey completed and translated to local languages)

MS6.5. Reports on farmers, consumers, and decision-makers engagements (Reports shared for co-learning among partners)

MS6.6. Guidelines for Women Farmer Hero Day (Guidelines available and disseminated to partners)

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MS6.7. Development of the recipe day action plan (Guidelines available and disseminated to partners)
MS6.8. Policy briefs and policy roundtables (Guidelines available and disseminated to partners; Policy briefs prepared and shared widely, including in local language)
MS6.9. Ten (10) dissemination actions implemented per country

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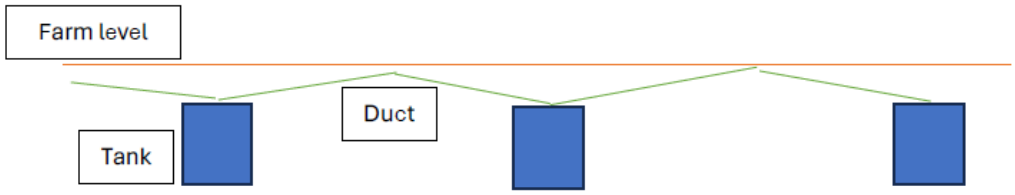
ANNEX 2 – Water Harvesting Technologies

A. Khetaras-like Systems

Khetaras-like systems composed of perforated ducts and underground tanks.
Khetaras are essentially huge underground tunnels with connected wells that are being used to provide water. The present system is a reversed and modernized version of the Khetaras and will be used to collect runoff from farm surfaces and direct it through open canals or underground perforated ducts to subsurface storage tanks or recharge structures. The scope of the system is to provide water for irrigation or livestock.



Indicative technical features, per system:

Perforated duct diameter	100 mm (HDPE or PVC)
Perforation	8 – 15 mm holes spaced at 10 – 20 mm
Duct length	Approx. 100 m
Number of tanks	4 (HDPE)
Volume of tanks	5 m^3
Volume of water to be collected	Tanks: 4 x 5 m^3 = 20 m^3 Duct (it can also be used to store water once the tanks are full): 100 m x Φ 100 m = 79 m^3 Total: 99 m^3/system
Number of systems:	2

This practice can be implemented partially by the farmers themselves. However, and mostly for the installation of the tanks, some mechanical assistance will be required.

The systems will be deployed at the edges of the farms to support several farmers.

Solar powered pumps: The system can also include solar powered pumps to withdraw water from the respective water collection tanks and direct it for its intended purpose.
Monitoring: Water harvesting related indicator: Volume of collected water and volume of water used (water flow meter).

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B. Pitting in the Farms.

Pitting (small basins in the farms to collect rainwater and store in the ground).

Pitting is the simplest technique as it requires no additional equipment or specific tools to be implemented. The application requires only the usual agricultural tools such as shovels, picks, etc. for digging small holes in the soil near the plants to hold the water and help it infiltrate the soil (see picture). The practice requires only labor hours, and the farmers can do it themselves, if persuaded (to cultivate a larger sense of ownership).

Indicative technical features:

Pit depth	20 cm
Pit diameter / width	30 cm
Spacing between pits	1.50 m
Number of pits / ha	2,500
Volume of each pit	Volume of cylinder: 14.13 lt

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Total volume of pits/ha	35.33 m^3
Number of farms:	5 per area (10 in total)

This practice is simple and can be easily applied by the farmers in their fields. As such, it is easily replicable.

Monitoring: Water harvesting related indicator: Soil moisture (soil moisture sensors and data logger) or portable soil moisture equipment for farmers to monitor soil moisture themselves and in collaboration with other / neighbors / adjacent farmers.

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ANNEX 3 – SPECIFIC OBLIGATIONS

Article 1. Works insurance

For the proper implementation of the works, the Subcontractor is obliged to have the works insured against all risks (civil liability and insurance to third parties), including cases of damage due to force majeure.

Article 2. Study of project execution conditions

The Subcontractor accepts with his offer that he/she has fully studied the nature and location of the works, the general and local conditions, mainly regarding the conditions of finding, transporting, depositing and storing materials, the existence of labor, water, electricity, the volatility of weather conditions, the possibility of flooding of streams and generally all natural conditions in the area of the works, the configuration and condition of the soil and subsoil, the type, quality and quantity of materials and water above and below ground, the type and means that will be required before the commencement and during the period of works and any other matters which in any way may affect, in connection with the contract; the work or its cost. In particular, he/she studied and took into account in the offer the load and traffic conditions of vehicles and the existence and operation of projects and public utility networks (pipelines, sewerage in general, etc.). It is noted that the responsibilities for correspondence and consultations that may be needed with the various Public Utilities all belong to the Subcontractor. All such actions will be done with the knowledge of the Supervising Authority.

Article 3. Personnel of the Subvontractor

The Subcontractor is obliged to establish at the place of execution of the project, an office with specialized and experienced technical staff, i.e. at least one Civil Engineer with ten years of experience in corresponding projects, who will be present daily to direct and monitor the project and at any time requested will be at the disposal of the Supervising Authority. The Subcontractor is also obliged to submit a list of the persons who will be authorized to replace them above mentioned in their absence. The foremen of the Subcontractor must be able to assist him in the execution of works, measurements, etc. The craftsmen must have the required suitability for the purpose for which they are used.

The Supervising Authority may always order the removal of personnel deemed justifiably unsuitable or the reinforcement of the contractor's workforce.

Article 4. Subcontractor's compliance with the contract and the orders of the Supervising Authority.

The Subcontractor must comply with the provisions of the contract, as well as with the written orders of the Supervising and Contracting Authority.

The Subcontractor has no obligation to comply with the orders given to him orally but only with the written orders or service notes of the Supervising Engineer certified by relevant documents of the Supervising Authority.

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Exceptionally, in urgent cases, the Contracting and Supervising Authorities' order for amendments or additions may also be given orally at the site of the works. In this case, a relevant entry must be made in the project logbook. If such an order is given by the supervisor, he shall forthwith inform the Contracting Authority in writing of the issue of a proper order issued within three working days of such written notification. If this order partially or totally alters the orders of the supervisor, the Subcontractor shall be compensated for the work he has carried out, in accordance with the order of the supervisor, until the order of the managing department is received.

Article 5. Sources of aggregates – Disposal of surpluses

The Subcontractor must supply at his own risk and expense all aggregates that will be required for the execution of the project.

The aggregates (gravel paving, pipeline encapsulation, drainage, etc.) that will be used in the project will be crushed quarry materials. The Contracting Authority does not undertake any obligation for the expropriation of land suitable for the production of materials to be used by the Subcontractor in the project, therefore he must include in the prices he will offer all the necessary costs for the supply from quarries, mines, etc. of the necessary aggregates, or for the lease or purchase of land for the production of these materials.

The costs of construction and maintenance of access roads, transportation of materials from whatever source they may be received, etc., should also be included in the offer. No claim from the Subcontractor for payment of any other compensation due to any additional transport or adverse conditions of lease of quarries, mines, etc., disclosure and creation or exploitation thereof, etc.

Unsuitable or surplus materials shall be laid out, following a proposal by the Subcontractor in appropriate areas and after approval by the Supervising Authority. In case it is not possible to deposit the excavated products in pre-approved areas, the Contractor must find and use other suitable areas, with the approval of the service without any special compensation.

Article 6. Quality of Materials – Inspections

The Subcontractor must procure at his own risk and expense all the materials that will be required for the execution of the project.

The receipt and quality control of the materials used in the construction of the project or incorporated in it, is done by the Material Receipt Committee appointed by the Supervising Authority.

The materials must be of excellent quality and meet the terms of the respective applicable National Technical Specifications.

Samples of materials must be submitted for approval before use. Materials and other articles used without the above certificates and approval shall be rejected if their unsuitability is established. The required samples and descriptive data will be taken in a timely manner by the Subcontractor before use and will be examined by the Supervising Authority. Then, when required, samples will be sent for examination to an appropriate state material testing laboratory. For this reason, those will be properly packaged, with the name of the material and factory and the commercial

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materials and for aggregates the place of origin, the name and location of the project and the name of the Subcontractor, as well as that the materials to be used correspond to the sample. The type of inspection to which the materials will be subjected shall also be indicated. Any relevant cost will be borne by the Contractor and is included in its percentage of overheads and benefits.
If during the implementation of the project, the Supervising Authority considers that the materials to be used do not meet the requirements of the specifications or are generally unsuitable, the Supervising Service orders the non-use of the materials. If the Subcontractor disagrees, the materials are not used unless their suitability is judged by laboratory testing performed by recognized laboratories. The cost of laboratory investigations shall be paid in advance by the Subcontractor and shall ultimately be borne by him if the unsuitability of the materials is proven. Otherwise, the cost shall be borne by the client and reimbursed to the contractor from the project appropriations.

Article 7. Inspections – Construction Test

The supervising Authority will proceed whenever is deemed appropriate and at the expense of the Subcontractor to inspections and tests of the structures, in order to ascertain, inter alia, their quality and effectiveness. The controls - tests are:

- Waterproofing of tanks and wells.
- Tightness of pipelines.
- Operation of gravitational networks

Article 8. Mechanical equipment

The Subcontractor must procure at his own risk and expense all the mechanical equipment that will be required for the execution of the project.
The mechanical equipment provided by the Subcontractor will be in excellent working condition and will be maintained normally.
If, however, and at the absolute discretion of the Supervising Authority, the mechanical etc. means introduced into the project are not deemed sufficient for the timely completion of the works, then the Subcontractor is obliged, within ten days from a written order of the Service, to reinforce the existing on-site mechanical equipment, etc. in accordance with the instructions of the Supervising Authority.
The Subcontractor must check the proper operation and operation of machinery (earthmoving and material handling), lifting machinery, vehicles, installations, machines and other work equipment (safety belts with ascent and descent mechanism, escalators, portable ladders, etc.) in accordance with the applicable institutional framework.

The construction machinery must be accompanied by the following information:

- License plates
- Authorization
- Evidence of insurance.
- Proof of payment of road tax (use)

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- Machine operator licenses according to respective national laws. Please note that the machine operator's license accompanies the operator.
- Certificate of safe operation of the work equipment (proper assembly - installation, good operation) and maintenance file in which the results of the tests will be recorded in accordance with the respective norms.
- Certificate of re-inspection of lifting machine, instructions for use, maintenance and corresponding book of maintenance and controls.

Article 9. Logbook – Progress of work – Penalties

The Subcontractor must use each time adequate crew of technicians and workers and mechanical means of construction or work overtime on Sundays and holidays and train night crews, without being entitled for this reason to additional compensation, if this is deemed necessary to ensure the execution of the works in accordance with their above progress program. The Supervising Authority, if it considers that the rate of progress of the works is not satisfactory and in accordance with the work schedule, may require the Subcontractor to increase the number of his crews, overtime on working days and the number of machines and generally to take all measures necessary to accelerate the progress of the works. The Subcontractor must comply with the relevant orders of the Supervising Authority, without additional compensation.

The non-compliance of the Subcontractor with the above orders and the proven unjustified delay in the execution of the works according to the above program, gives the Contracting Authority the right to terminate the contract and deprive the Subcontractor of the right to continue the project. The non-exercise of the above rights of the Contracting Authority does not release the Subcontractor from any obligation arising from the contract.

The Subcontractor must keep a detailed logbook of works and weather conditions. The logbook should be filled in daily and should be indicated in a concise manner, in particular:

(a) Round-the-clock weather conditions;
(b) Figures for staff employed by categories and staff on day off due to late payment by the employer;
(c) The machinery used and machinery which is on a daily holiday as a result of the employer's late payment;
(d) Location and description of operations. Indication of the work for which there is no progress or is not being carried out, and the reasons for this,
(e) Time of start and end of critical tasks within the day;
(f) Arrivals and departures of main equipment;
(g) Traffic conditions. Also record modifications or problems with settings and related equipment,
(h) The materials presented, the operations carried out;
(i) Laboratory tests;
(j) Delays, difficulties, accidents, damage, abnormal circumstances causing delays, the time for temporary suspension or resumption of work;
(k) The instructions and observations of the oversight bodies;

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(l) Emergencies; and
(m) Significant visits or communications with the State or local authorities or roadside owners;
(n) Any other relevant information relating to the project.

Article 10. Topographic works – Applications on ground – Implementation plan

The Subcontractor is obliged to provide, for the exclusive use of the Supervision Authority, throughout the execution of the works, all the control instruments, auxiliary accessories and the appropriate personnel, which are necessary for all topographic inspections that will be required in all phases of construction of the project. The Subcontractor, before commencing any permanent work, must install an integrated system of permanent altitude starting points (REPERES) in the various parts of the project.

Any work necessary at the discretion of the Supervising Authority for the application on the territory of the approved engravings, shall be carried out with care and expense of the Contractor, in accordance with the instructions of the Supervising Authority, which shall check the accuracy in accordance with the applicable regulations. The costs of the above works in materials, means and personnel shall be borne by the Contractor.

During the construction of the project, it may be necessary to draw up plans, diagrams and tables, implementation plans necessary both for the good and timely execution of the works and for their easier monitoring.

Three (3) days prior to the construction of the respective work, harmoniously and in accordance with the approved syllabus, the Contractor is obliged to submit to the Supervising Authority the implementation plan that will be drawn up at his own expense. The submitted drawings must contain all the necessary components and a description of the construction methods and will be accompanied by a technical report containing the necessary calculations, so that the Supervising Authority after inspection and corrections will return the drawings to the Contractor in three (3) days. In case the redrafting of the implementation plans by the Contractor is required, he is obliged to submit them again for review in two (2) days and the Supervising Authority finally returns them in two (2) days validated. Thus, the total time from their submission by the Contractor until their return to him should not exceed a total of seven (7) days.

Approval of implementation plans should not be considered:

i. That it allows any departure from the terms of the contract.
ii. That it relieves the Contractor from liability for any error contained in the details of the implementation plan, such as dimensions, material indications, etc.
iii. That it constitutes approval or acceptance by the Contracting Authority and its representatives of deviations from the draft details delivered to the Contractor by the Contracting Authority and appearing in the implementation plans, but not justified by a special report submitted with them, in accordance with the following paragraph.

If, for any reason, the Subcontractor, during the execution of the works, finds the need for deviations or variations from the drawings, diagrams, tables and other elements of the Contract delivered to him by the Contracting Authority, he must include these deviations and variations in

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the implementation plans he will necessarily submit and a relevant supporting report, describing and justifying them in detail. The approval of the submitted variations or deviations, in whole or in part, depends on the Contracting Authority, so the relevant terms of the contract are adjusted, which are validated in writing by the Authority.
The omission of such variations or deviations or their inclusion in the drawings without submission of the relevant supporting report shall be imputed to the Subcontractor.

Article 11. Elevation and Horizontal elements

Upon signing the Contract, the Subcontractor must be ready so that, in application of the approved design, he will make in parts and in accordance with the worktable and the detailed execution program the engraving, piling, leveling, etc. of the axes of all kinds of pipelines for their installation the execution of excavations is to begin. The work will be performed by a qualified engineer who will be hired with care, expense and responsibility of the Contractor.
The Subcontractor may not raise any objection if in parts of the pipelines the alignment, for various reasons, does not follow the direction and layout set by the approved design. The Supervising Authority may decide to modify the alignment. If there are no dense fixed altitude starting points in the area of the works, the Contractor must thicken them. The determination of the absolute altitudes of the new starting points will be done with double geometric leveling from existing elevation starting points that will be given by the Service. In case of discrepancies between the topographic diagrams of the study and the actual terrain elements, the Subcontractor must adjust the alignment of the axes appropriately after consultation with the supervision and taking into account the main objective from a hydraulic point of view purposes of the study.
The Subcontractor will capture the required details on a scale of 1:20 and will numerically indicate the necessary dimensions and altitudes. He is also obliged to identify the locations of installations (water, electricity, telephone) which affect the execution of the project. The identification of the elements, where there are control shafts, will be done through their mouths. The Contractor will reveal the covered manhole covers at the locations where he will be informed by the Supervising Service that there are pipelines.
The Subcontractor is not entitled to any additional remuneration for the identification of the elements of the existing wells, the preparation of plans for the works that exist in general and for the execution plans, because this fee is included in the prices of the Invoice. In places where there are no visiting wells, the identification of technical data will be done by research sections. The research sections will be made only at the request of the contractor for each of them and will be executed after a written order of the Supervising Authority and will be compensated in accordance with the articles of the tender invoice. Without an order from the Supervising Service, research sections will not be compensated.
Before the execution of the research sections, the Subcontractor submits to the Supervising Authority for approval a list of the pipeline sections. After the execution of the exploratory sections, the Contractor submits to the Supervising Authority drawings of the sections on an appropriate scale, where the location of the technical elements-pipelines of utilities will be presented. which were detected during the execution of the incisions. The number and correct

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selection of the locations of the above sections is left to the sole responsibility of the Subcontractor. The Service must respond within three (3) working days of submission. When this deadline has passed, the list shall be deemed to have been adopted.
The implementation plans will include a general horizontalization of the works, especially the pipelines and their nearby building and street lines at a scale of 1:1000. Data of the topographic background as well as details of the building and street lines will be supplied by the Subcontractor from the Supervision Authority. The pipeline lengths will be delivered at a scale of 1:1000 for lengths and 1:100 for heights and will depend on the elevation network of the Supervision Authority. The drawings of the civil engineering works will be delivered on an appropriate scale and appropriate cross-sections, where necessary (e.g. to determine at important points the relative position of the new pipelines to the old ones), always taking into account the objective hydraulic purposes of the study.
If the Subcontractor during the execution of the project finds the existence of hidden obstacles, he must immediately notify the Supervising Authority and wait for the appropriate instructions regarding the execution of the project. Delay or modification or cancellation of works for this reason does not create any right to compensation to the Subcontractor, but it is understood that in this case a corresponding extension of the deadline is mandatory for the Contracting Authority.
When an independent part of the network is completed, the Contractor is obliged within three (3) days to submit to the Contracting Authority the following information:

i. Horizontal laying of pipelines and civil engineering works, such as visiting wells, private connections, etc.
ii. The positions of the altitude starting points of the area that will be marked with a serial number in the horizontography with their altitudes.

The Subcontractor is not paid particularly for the above works, because it is considered that their cost is included in the overhead costs of the prices of earthworks and civil engineering works. The delivery of the above plans is a prerequisite for the preparation of the measurements of the accounts, the protocols for the receipt of hidden works and the protocol for the provisional acceptance of the project.
The Subcontractor is obliged to provide, upon completion of the project and without payment of any additional fee, the finalized construction drawings of the project in accordance with the instructions of the project supervisor.

Article 12. Excavation of trenches – Backfillings – Demolitions

The excavation of trenches for the installation of pipelines and the execution of technical works shall be carried out in accordance with the execution plans (certified by the Supervision Authority) and the on-site instructions of the Supervision. The depths and widths of the excavation bottom where the implementation of the drawings of the approved design is not possible, shall be determined by the Supervisor according to the specific local conditions and the intended degree of safety of each pipeline. The aim is to ensure sufficient coating thickness, measured from the projected final ground level and bottom width sufficient to make it easy to construct, lay and assemble pipelines. The slopes of the trenches shall be vertical and appropriately supported.

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Where the conditions of the project so require, the Service may determine slope slopes by means of a document.

Excavations other than those specified in the plans or by the Supervising Authority are not recognized without its prior written order, nor are other works carried out due to additional excavation (backfilling, pavement restorations, etc.) recognized. The Subcontractor must propose to the Supervising Authority the modifications which, in his/her opinion, are required and concern slopes, use of retaining etc.

The excavated products shall be temporarily placed on the lower than the cross-section side so as not to be carried away by water towards the trench. The excavation of ditches and subsequent works up to and including their refilling must be carried out at the fastest possible pace, especially in areas with heavy traffic, so as not to maintain for long the irregularities caused to pedestrian traffic, cars, etc. by the existence of the ditch, soil, etc. It is particularly emphasized that the Subcontractor is obliged not to leave a part of a trench of any length in which the works will not have been completed (from excavation to its refill).

The Subcontractor must ascertain the possible existence of obstacles before excavations begin, gathering the required information from the competent Services, in order to avoid damages and accidents. Particular care will be taken not to damage underground cables, water supply networks, etc. Where residential water pipes meet, they must be properly supported and protected. Passage next to poles will be treated with complete and safe special support of the side of the trench at the necessary length and depth, with the appropriate safety measures each time. The existence of makeshift or temporary buildings, e.g. kiosks, will not normally be a reason for changing the route of the pipeline. Unforeseen obstacles will be dealt with according to the specific circumstances.

At trench junctions with roads of significant traffic, after excavation, the Subcontractor is obliged to temporarily restore traffic by constructing a temporary bridge upon the recommendation of the Supervision Authority. The Subcontractor must, during the excavation of the ditches, take all necessary safety measures to prevent damage to the works or to third parties and in particular to prevent accidents.

The characterization of the quality of the soils excavated will be determined by protocol by the competent body designated by the Supervising Authority / Soil Characterization Committee and its acceptance (in total or with reservation) by the Subcontractor. In this protocol, the indications of the cross-sections are written and for each one the proportion to the percent of the excavated soil, according to the values of the offer. Regarding the prices of the offer for earth, semi-rocky and rocky soils, which in principle include all soils where all excavations can be carried out by hoe, it is emphasized that the same prices apply in case the Subcontractor uses other tools in addition to hoeing, provided that their use replaces excavations with hoes.

The price of the excavation of the trenches or sections includes the configuration of the slopes of the trenches that will be done by any means.

Trench backfills will generally be performed after the complete installation of the respective pipelines and their successful tightness test. Specifically, after the successful testing of the pipeline, its protective backfill is made carefully and until filling thickness of at least 20 cm is completed along the entire length of the pipeline with sand. During the execution of this

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protective layer, special care will be taken to fill all gaps, especially under the pipeline, so that it is well supported and protected. Then, after the protective layer is finished, the Supervising Authority will check the condition of the pipeline and then the Subcontractor will proceed to the additional backfilling of the trench. The backfilling of the trench will be made with gravel or sand or torrent material as such, always according to the standard cross-sections, while excavation products will be used in cases where the Supervising Authority deems their suitability. All measures will be taken to exclude any appreciable future subsidence. It is necessary to strictly apply the technical specifications relating to the compaction of backfills. In cases where the ditch intersects with roads of heavy traffic, it is possible, upon the recommendation of the Supervising Authority, to make the necessary bridges for the passage of pedestrians and cars. In these cases, the Subcontractor must have several bridges, suitable openings, for the temporary overlap of the trench and the safe passage of wheeled vehicles. These will be maintained until complete backfilling and normality of the road is restored.

Any kind of removal, decomposition and demolition of structures, superficial or underground, necessary for the opening of the ditches, will be carried out to the extent necessary and inevitable for the installation of the pipelines. The relevant articles of the invoice and those additionally defined below, apply:

i. Before any demolition, the Supervising Authority must check if necessary, determine its extent and take, in comparison with the Subcontractor, the necessary dimensions and any other data required for the preparation of the relevant measurements and protocols.
ii. Where useful materials are to be obtained from demolition, the Subcontractor must take appropriate measures to prevent their deterioration as well as to keep them safe on site until they are reused, if applicable. If not, it delivers them with a protocol to the Supervising Authority and any loss of such materials is borne by the Subcontractor, who is obliged to replace them with new ones. Scrap materials resulting from demolition which are unsuitable for backfilling must be removed as soon as possible.
iii. Useful demolition materials must be deposited in normal piles to facilitate inspection and counting and in places where traffic is not obstructed and so that means of transport can easily approach for removal or reuse.

Article 13. Removal of waste materials

Excavation products and generally any kind of useless materials coming from demolitions, constructions related to road surface restorations, etc., will be removed without delay. Waste materials will be removed, even partially, in order to limit as much as possible, the period of existence of the anomaly in pedestrian, vehicle traffic, etc. that comes from it. Materials that need to be removed are:

i. Excavated products
ii. Useless excavation products resulting from road demolitions, etc.
iii. Surpluses of excavation or demolition products from various pipeline-related structures (cobblestones, infrastructure, gravel, etc.).
iv. Blocks and granitic curbs should be transported after sorting to a special assembly area designated by the Service.

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The removal of excess excavated products must be carried out by the Subcontractor without objection and regardless of whether the quantity is large or small. The places where these materials are deposited shall be approved each time by the competent authority. The cost of removal shall be included in the excavation price.

Article 14. Improper construction of works - Defects

If, during the construction of the works until final acceptance, any work shows defects which are not rectified by the Subcontractor, a special order of the Supervising Authority shall be notified to him/her. The special order shall specify the defects, determine whether they are substantial, insignificant or dangerous and set a reasonable time limit for their rectification. Restoration may include the removal of defective works and their reconstruction, if necessary. If the defect is not substantial and its rectification requires disproportionate costs, the special order shall set a percentage reduction in the contractor's remuneration for the corresponding works. In the latter case, the order may also include the execution of certain operations to limit the defect.

If the defect is discovered at the time of acceptance of the works, the provisions of the respective law shall apply, and the rectification of the defects shall be established by the Contracting Authority.

The Subcontractor is declared void from the contract when his/her works are systematically poorly crafted or the materials he uses do not meet the specifications.

Article 15. Health and Safety

The Subcontractor is obliged to execute the works in a safe manner for his staff, or the staff of the project operator, or any third party, in order to eliminate or minimize the risks of accidents or occupational diseases during the construction phase of the project and in accordance with the national Laws and Decrees.

Regarding the adoption of safety measures, the Subcontractor is obliged to carry out under his/her responsibility any relevant study (static study of scaffolding, study of temporary marking of works, etc.) and to take all relevant measures. The Subcontractor bears full and exclusive responsibility for any damage caused to anyone by the breach of the above obligations, being liable, among others, for the payment of the relevant compensations. The Subcontractor must take protective measures, in accordance with the current national legislation in the Safety and Health Plan (OSS), as well as any modifications or other necessary adjustments of the studies during the design and construction phase of the project.

The Subcontractor must provide the workforce, the supervision staff of the Service, as well as any other person present at the Project site, with the required Personal Protection Measures such as protective helmets, safety boots, plastic boots, phosphorescent coats (for winter), phosphorescent vests (for summer), protective gloves, earplugs, goggles and sun hats, First Aid kits, one for the offices and one for each vehicle on the construction site, masks of various types, etc.

The Subcontractor of the project must insure to the insurance fund as provided by law all the staff he will employ.

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The Subcontractor is solely responsible for the observance of all provisions and regulations relating to the execution of the project and the provision of work, as indicated in the Safety and Health Plan and the Safety and Health File of the contractual documents of the contract, is responsible for any violation and is therefore charged with the payment of fines, compensation and any other amounts imputed to him/her.

Article 16. Storage of materials, works, and existing structures

The Subcontractor must keep at his own risk and expense the supplies and materials in his possession (pipes, special pieces, and other components) intended for the execution of the project. The Subcontractor will be responsible for any loss or breakage or damage thereof and has the obligation to replace them.

All claims of the Contracting Authority for the fencing or special safekeeping of his property will be executed by the Subcontractor without any special compensation. If the Contracting / Supervising Authority finds that the Subcontractor does not adequately protect materials, machinery, supplies or works performed, then this property may be protected by the former, with the cost of safekeeping to be borne by the Subcontractor, and will be deducted from what he is entitled to receive.

Article 17. Protection of vegetation – environment

The Subcontractor has the obligation to take measures to protect the environment. He/she must comply with the approved environmental terms of the Environmental Impact Study of this project and comply with the applicable environmental legislation.

The Subcontractor protects the vegetation of the area where the project is executed and is responsible for any felling of trees, shrubs and destruction of a plantation that would not be necessary for the execution of the project. In case of damage or destruction to elements of the natural environment, which are not provided for in the approved design of the project (or by any modifications approved by the Supervising Authority), the Subcontractor, regardless of any responsibilities that may arise for him, is obliged to restore the existing works or the natural environment to the state it was in before its installation, at his/her expense, without being entitled to any financial compensation or extension of the deadline.

Violation in the fulfillment of obligations such as lack of proper protection of the environment, failure to protect the public, delay in repairing damage to other public works or public property impose on the contractor the sanctions of the respective laws.

Article 18. Damage to the project - Damage from force majeure

Until final acceptance, the Subcontractor bears the risk of damage from any cause, unless these are due to the fault of the project developer. The Subcontractor is obliged to correct within a reasonable deadline set by the construction operator the defects of the project, which will be detected during construction and until final acceptance. If this deadline has not been complied with, the project promoter may carry out the correction against the contractor by any means, always without prejudice to his right to declare the contractor to be disqualified. If the defect is

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not substantial and its correction requires disproportionate costs, a relative reduction of the contractor's consideration shall be made.
The Subcontractor is not entitled to any compensation from the developer for any damage caused to the works, for any damage or loss of materials and generally for any damage due to negligence, carelessness or unpretentiousness of him or his staff or to non-use of appropriate means or to any other cause, except in cases of fault of the project constructor or force majeure. The Subcontractor is obliged to repair the damages borne by him at his own expense.
In case of damage caused by force majeure to the works carried out or to the materials located on the construction site, the Subcontractor has the right, by reporting to the Supervising Service, submitted within ten days from the occurrence of the damage, to indicate the time when the damage occurred, the cause that caused it, the type, the extent and cost necessary to remedy it.

Article 19. Use the project before completion

The Contracting and Supervising Authorities have the right to take possession or use any part of the work that has been partially or totally completed, only after its administrative acceptance (partial) in accordance.
If such possession or use delays the progress of the work, then the Subcontractor grants a corresponding extension of the deadline for completion of the work.
If the use of the project before its completion entails additional costs for the Subcontractor, then the Contracting and Supervising Authorities shall pay these costs which must be fully justified.
Works for the restoration of damages due to the use of a work delivered to use before its acceptance in accordance with the provisions hereof, shall be carried out only after a written order of the Contracting Authority.

Article 20. Measurements – Hidden Works

At the end of each deliverable, the Subcontractor prepares measurements in distinct parts of the project for the works executed in the previous period. The measurement shall include for each operation a brief description of the operation with an indication of the corresponding article of the invoice or the protocols for regulating unit rates of new work performed and the necessary measurement drawings, data, and diagrams for this purpose, based on direct measurement data of operations or protocols of hidden operations.
The measurements, accompanied by the necessary measurement data and drawings, in printed and electronic form, shall be submitted by the Subcontractor to the Supervising Authority for inspection no later than ten days (10) after the end of the period following their execution, after being signed by him with the indication "as prepared by the Contractor". which ends with the approval decision of the latter.
The Supervising Authority, within ten (10) days from the submission of the measurements by the Contractor, has the obligation to check and correct the calculations, approve the measurements and notify the contractor of the measurements that have been checked and corrected. The Subcontractor, if he does not accept the corrections, may exercise the prescribed right of objection. If the submitted measurements show deficiencies that make it impossible to check or correct them, the Supervising Authority returns the measurements to the contractor within the

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above ten (10) day deadline and invites him to remedy the specific deficiencies. Missing data deemed necessary by the Directorate must be specifically and numbered in the invitation. The Subcontractor is obliged within ten (10) days resubmit the measurements by completing all the information requested in the invitation. After resubmission of the measurements, the Supervising Authority may not return them again to the contractor for completion but is obliged within ten (10) days to check, correct, approve, and notify them to the contractor. The measurements, if they are not returned approved or corrected or for completion within the above period or if, after their resubmission, they are not checked, corrected, approved and notified to the contractor within the above deadline, are considered automatically approved, only in the sense that they can be included by the Subcontractor in a subsequent account.

In the case of works, the quantitative verification of which is not possible in the final form of the project (hidden works), such as works that are to be overlapped by others and are not finally visible, quantities received by weighing or the like, the Contractor is obliged to invite the Supervisor for the Receipt of Hidden Works, in order to proceed jointly with the counting or weighing and to draw up a protocol of receipt of hidden works or a weighing protocol respectively. This protocol, signed by the contractor and the supervisor, shall be a prerequisite for the certification of the work concerned. The invitation of the Subcontractor to the Supervising Authority must be made for the joint weighing at least one (1) working day before it, and for the receipt of the field data at least five (5) working days before they are carried out. Failure by the designated bodies to respond to the invitation may constitute grounds for default on the part of the developer and shall result in disciplinary action against those responsible. The protocol of receipt of works must accompany the measurement of the relevant works, has no enforceable administrative character, and is not challenged independently except together with the challenge to the approval act of the measurement.

One (1) month at the latest after the certified completion of the project, the Subcontractor is obliged to submit to the Supervising Authority individual measurements that are missing and the "final measurement", i.e. a final summary table summarizing the quantities of all partial measurements and the protocols of the paragraph of receipt of hidden works. If these have been checked by the Supervising Authority, the quantities shall be entered as corrected, even if objections by the contractor or requests for treatment are pending. Such inclusion in the final measurement shall not constitute a waiver by the contractor of such lawfully filed applications or objections, nor shall it entitle him to submit new ones. For individual measurements which have not yet been checked by the department, the measurement quantities as drawn up by the Subcontractor prior to the department's inspection shall be recorded. The final measurement shall be signed by the Subcontractor with the words 'as drawn up by the Subcontractor. The Supervising Authority is obliged to proceed with the audit of the final measurement within one (1) month from its submission and to notify the Contractor of the audited and corrected measurement.

If no final measurement is submitted by the Subcontractor, no later than one month after the notification to him/her of the certificate of completion of the works, a special penalty of two thousandths (2‰) of the total amount paid to the contractor until then for the whole contract shall be imposed on him, for each completed month of delay. The penalty is imposed by decision

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of the managing department and for a maximum of six (6) months of delay. Irrespective of the imposition of the penalty clause and after the expiry of the period of its imposition, the final measurement is drawn up by the department that may use private technicians and workshops for this purpose, charging the relevant cost at the expense of the contractor. The final measurement thus drawn up shall be communicated to the Subcontractor.

Article 21. Completion of works – Delivery

The completion of the assigned works will be certified to the Contracting Authority by the Supervising Authority of the project, in compliance with its internal procedures.

Article 22. Project signs

The Subcontractor is obliged, within one month from the signing of the Contract, to construct and place at the beginning and at the end of the project signs with the details of the project. The withdrawal of the original sign takes place with the placement of the commemorative sign after its final receipt.

Article 23. Antiquities

The Subcontractor is obliged to notify the Supervising and Contracting Authorities if antiquities or any works of art are found during the construction of the works. In this case, the provisions on antiquities shall apply.

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