Terms of reference (ToRs) for the procurement of services above the EU threshold

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

CONFIDENTIAL

Project title:
Climate-Resilient Water Resources Management (CWRM)

Processing number:
24.2075.0-001.00

Country:
Iraq

Tender number:
10000203

Subject of the tender procedure:
Consultancy on Drainage Water Reuse

0. List of abbreviations

BMZ	Federal Ministry for Economic Cooperation and Development (Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung)
CWRM	Climate-Resilient Water Resources Management
EU	European Union
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GTC	General Terms and Conditions of Contract for supplying services and work on behalf of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
KOMP	Cost per output monitoring and forecast
LoI	Letter of intent
MoU	Memorandum of Understanding
MoWR	Ministry of Water Resources
RMO	Risk Management Office
ROI	Return on Investment
ToRs	Terms of reference
WaPOR	Water Productivity through Open-access of Remotely sensed derived data (FAO software)

1. Context

Iraq is facing an intensifying water crisis, driven by a combination of environmental and human-induced factors. Climate change impacts led to strain on water availability. A significant decline in Euphrates and Tigris Rivers discharge is further exacerbated by the transboundary water flow control by neighbouring countries, which severely restrict the volume of water reaching Iraq. Beyond water scarcity, inadequate and fragmented water resources management further aggravates the situation. Inefficient allocation practices, limited monitoring and planning capacities, and weak coordination between institutions contribute to unsustainable use of available water resources. In parallel, insufficient wastewater and drainage water management has led to declining water quality, increased pollution risks, and reduced suitability of water for agricultural and domestic use. Rising water demand and unsustainable consumption patterns place additional strain on an already stressed and poorly managed water system.

In response to these pressing challenges, the Government of Iraq has initiated efforts to strengthen climate resilience and promote sustainable water resources management. However, it faces challenges in prioritizing and mobilizing the investments. In recognition of the urgent need for a climate-resilient approach to managing water resources in Iraq, the implementation of a new project has been agreed between the Federal Governments of Iraq and Germany.

This project is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH with the Ministry of Water Resources (MoWR). Hillah River System has been designated as a pilot region for enhancing climate-resilient water resources management in Iraq. This vital watercourse, branches off from the Euphrates River, traverses the provinces of Babylon, Diwaniyah, and Muthanna, and is confronted with considerable challenges related to water allocation and distribution.

Project approach:

The CWRM project aims to strengthen the technical and institutional capacity of the Ministry of Water Resources for the climate-resilient management of the Hillah River. The project supports the ministry in the following areas:

- Improvement of the Water Resources Information Systems (Output 1): Upgrading monitoring infrastructure, improving data management and sharing, and water quality and distribution tracking along the Hillah River.
- Strengthening Methodological and Technical Capacities for Climate-Resilient Planning and Water Allocation (Output 2): Developing water accounting tool, and calibrated model to inform provincial water resources allocation. This also involves scenario modelling, artificial intelligence (AI) integration, and establishing governance frameworks for strategic decision-making. The project also supports planning, adaptation strategies, and long-term planning in response to climate change.
- Capacity Development (Output 3): This cross-cutting theme focuses on building the capacity of the MoWR staff. It includes upgrading the MoWR training center, delivering trainings on climate-resilient water resources management, and facilitating participation in international conferences. Special emphasis is placed on promoting female specialists and managers within the ministry.

- Reuse of Drainage Water (Output 4): Feasible options for reusing drainage water as an unconventional water resource will be identified through analysis of international, regional, and local experiences. The MoWR will be supported in assessing and prioritizing potential uses, and a bankable project proposal for a demonstration plant will be developed.

Current irrigation and cultivation methods in Iraq result in drainage water that is highly saline and contaminated with pesticides and fertilisers. It is therefore often discharged without further use. Within this framework, Output 4 focuses on the identification, assessment, and prioritisation of feasible options for the use of drainage water as an additional resource for agriculture, industry, and environmental purposes. The present consultancy will provide the analytical and technical foundation for this output. It will analyse irrigation practices and drainage-water generation, identify and assess feasible reuse and treatment options, and contribute to preparing a technically sound and economically viable concept for a pilot and demonstration solution.

A technical working group has been established to lead the steering, planning, monitoring and implementation of activities under Output 4 (see Annex “Technical Team Members’ Information”).

2. Tasks to be performed by the contractor

2.1 Term

The expected term of the contract for services must be specified in the ‘Special terms and conditions of contract’. The definitive term and service delivery period are set out in the contract award notification.

2.2 Objectives, indicators, work packages, milestones

The objective of this assignment is to support the Ministry of Water Resources in identifying and prioritising technically, environmentally, and economically feasible options for the reuse of drainage water in the Hillah River System and to prepare a concept for two pilot projects that can serve as a demonstration for future replication.

The consultancy contributes directly to achieving Output Objective Indicators:

- 4.1 (“Three options for using drainage water prioritised by experts and managers from the Ministry of Water Resources (MoWR) and
- 4.2 (“One technically feasible project proposal, ready for financing, for a demonstration plant for the use of drainage water)

Even though only one project proposal is listed in indicator 4.2, the contractor is obliged to develop two technically feasible project proposals. The term "demonstration plant" should be understood in a broader sense. Demonstration solutions are to be developed, which may be hard infrastructure measures or, alternatively, non-physical solutions. More on this in Chapter 2.

The contractor is responsible for providing the following work packages and for achieving the corresponding milestones:

Work package 1: Assessment of irrigation practices and drainage-water generation

The contractor is responsible for conducting a comprehensive assessment of current irrigation systems and their relationship to drainage-water generation in the Hillah River System. This includes reviewing existing irrigation methods such as surface, sprinkler, and drip irrigation including the (efficient) use of fertilizer; quantifying irrigation efficiency and related drainage-water volumes and qualities; and analysing the institutional management of irrigation operations.

The contractor shall perform a scenario analysis comparing current and improved irrigation and fertilizing practices and quantify how increased irrigation efficiency and better use of fertilizer would affect the volume and quality of drainage water.

The analysis shall include different scenarios for climate adaptation measures. These will be based on the modelled results in Output 2.

The results shall be visualised in maps and datasets to be included in the (designed) Information System with the Hillah River Information System (Outcome Indicator).

Milestones for work package 1	**Delivery period**
Baseline report on irrigation and fertilizing practices and drainage-water quantities finalised	3 months after contract start
Scenario analysis report quantifying expected changes in drainage-water volumes and qualities under future irrigation and climate regimes completed	5 months after contract start

Work package 2: Identification and prioritisation of reuse options and treatment technologies

At the start of the contract period, GIZ shall provide the contractor with a baseline assessment identifying feasible end-uses for treated drainage water, including agricultural reuse, aquaculture, industrial applications, landscape irrigation, and groundwater recharge. The baseline assessment will also include an analysis of available water quality data and representative measurement samples describing the current status of drainage water, as well as a review of relevant international and regional experiences (e.g. Jordan, Egypt, Iran, and FAO's WaPOR programme) and initial lessons learned applicable to the Iraqi context.

The contractor shall build upon and complete the baseline assessment provided by GIZ by validating and further developing the identified drainage water reuse options, integrating additional analysis, evidence, and stakeholder input relevant to the Iraqi context. This includes assessing a range of conventional treatment technologies as well as nature-based solutions (NbS) suitable for high-salinity and contaminated drainage water in arid environments, using a multi-criteria approach that considers technical feasibility, operational requirements, costs, environmental risks, and institutional capacities.

Before considering feasible end-use solutions, special emphasis has to be given to improved agricultural management practices. Crops can be grown with saline waters provided that suitable irrigation and cropping strategies are used. For that, the management needs to be more appropriate, and more precise methods should be used for water application and distribution. Water requirements needed for crop use and leaching should be accurately assessed and provided in a timely manner. Managing cycling and blending strategies can reduce the salinity and may allow a second use of drainage water.

Beside of the research studies on different reuse options and their implications the following accompanying measures should be discussed as well:

- Technical assistance to develop management tools such as monitoring programs and guidelines for safe drainage water reuse
- Capacity-building and training programs
- Reform policy and regulations to govern drainage water development and management
- Strengthening of water user groups to develop local solutions that promote sustainable management

The different potential options (managerial, biological, physical, non-physical) should be discussed and presented in an “option report”.

The report should be written in the following structure, but can be complemented based on the consultant's experience:

1. Executive Summary

- Overview of the project rationale, key findings, and recommended "Next Steps."

2. Introduction and Project Background

- **Problem Statement:** Water scarcity issues, groundwater depletion, or environmental degradation caused by untreated drainage.
- **Project Objectives:** Goals such as drainage water reuse for expanding irrigated areas, nutrient recovery, or salinity management, better water management, climate resilience.
- **Study Scope:** Geographical boundaries and timeframe (2026 and beyond).

3. Resource Assessment

- **Quantity Characterization:** Analysis of seasonal flow patterns and volumes of drainage water available.
- **Quality Characterization:**
  - Salinity levels (TDS/EC) and Sodium Adsorption Ratio (SAR).
  - Nutrient content (Nitrogen, Phosphorus).
  - Contaminants (Pesticides, heavy metals, pathogens).
- **Source Reliability:** Assessment of drainage flow stability throughout the irrigation season.

4. Demand and Application Analysis

- **Target Crops:** Identification of salt-tolerant crops or non-food crops (e.g., biofuels, timber).
- **Blending Strategies:** Potential for mixing ADW with freshwater to meet specific irrigation standards.
- **Alternative use of drainage water** (wetlands, industry, parks, etc)
- **Demand Mapping:** Location of fields relative to drainage outfalls.

5. Technical Options and Infrastructure

- **Reuse Models:**
  - *Direct Reuse:* Untreated application (if quality permits).
  - *Cyclic Reuse:* Alternating between drainage and fresh water.
  - *Treatment-Enabled Reuse:* Use of Constructed Wetlands (CW), desalination (RO), or filtration.
- **Storage & Distribution:** Need for buffer ponds, pumping stations, and specialized piping.

6. Regulatory and Legal Framework

- **Water Rights:** Ownership of drainage water and permits required for abstraction.
- **Compliance Standards:** Benchmarking against local laws or international guidelines like the FAO Water Quality for Agriculture or EU Regulation 2020/741.

7. Environmental and Social Impact (ESIA)

- **Soil Health:** Long-term risks of soil salinization or sodicity.
- **Public Health:** Mitigation of risks related to pathogens or chemical residues in the food chain.
- **Ecosystem Benefits:** Reduction of pollution loads entering downstream natural water bodies.

8. Financial and Economic Preliminary Analysis

- **Capital Expenditure (CAPEX):** Preliminary estimates for construction and technology.
- **Operational Expenditure (OPEX):** Energy costs for pumping, maintenance, and water quality monitoring.
- **Cost-Benefit Analysis:** Comparing the cost of "new" water (ADW) vs. the cost of inaction or alternative sources (desalination).

9. Stakeholder Engagement

- **Farmer Acceptance:** Willingness to use treated/blended drainage water.
- **Institutional Framework:** Roles of water user associations (WUAs) and government agencies.

10. Risk Assessment and Gap Analysis

- **Technical Risks:** Potential for clogging or soil degradation.
- **Information Gaps:** Data missing for a full Feasibility Study (e.g., lack of long-term soil data).

11. Conclusions and Recommendations

- **Viability Statement:** Is the project technically and economically sound?
- **Roadmap:** Detailed plan for the full Feasibility Study and pilot project phase.

In order to validate and prioritise the most suitable options, the contractor shall organise two expert workshops with the Ministry of Water Resources and the other key stakeholders (i.e. members of the Technical Working Group for Output 4)

The contractor shall ensure that MoWR and key institutions are engaged throughout the assessment process as part of a structured capacity development approach. As part of this process, the contractor shall facilitate targeted learning and exchange activities. These include the organisation of a study tour for MoWR to visit relevant international or regional good practices, as well as an international seminar or conference in Baghdad in which international and regional actors present their experiences and discuss their applicability to the Iraqi context. The contractor shall prepare a bilingual publication summarising these experiences and the insights obtained.

In addition, the contractor shall design and deliver two training courses in close cooperation with the MoWR Training Center:

(i) a foundational training course on treatment technologies for drainage water reuse, covering technical principles, performance, and operational aspects; and

(ii) an advanced training course focusing specifically on drainage water reuse concepts and Nature-based Solutions (NbS), including design considerations, applicability in arid environments, and integration into water management planning.

Both training courses shall include the development of structured curricula, joint delivery together with designated MoWR trainers, and the preparation of comprehensive training materials in English and Arabic, suitable for documentation and publication. The delivery of the training courses shall take place in Arabic to ensure effective participation and knowledge transfer.

The consultant together with the GIZ team will support the MoWR in identifying 2 pilot projects to be implemented in the Hilla River area.

Milestones for work package 2	**Delivery period**
Presentation of the multi-criteria assessment method	2 months after contract start
Presentation of possible 3 options (“Option report”)	2 months after contract start
Study tour on international/regional good practices conducted	3 months after contract start
International seminar/conference in Baghdad carried out	4 months after contract start
Training courses on (i) treatment technologies and (ii) NbS delivered (incl. curriculum and training materials) at MoWR-Training Center	6 months after contract start
2 expert workshops	7 months after contract start
Achievement of indicator 4.1	5 months after contract start
Final analytical report on reuse options and treatment technologies submitted	9 months after contract start

Work package 3: Preparation of pilot project concepts

Building on the findings of the previous work packages, the contractor shall support the development of a pre-fesibility (PFS) and a definitive feasibility study (DFS) for two pilot demonstration solutions. This task includes together with the GIZ team and the counterpart identifying suitable pilot locations based on hydrological, land-use, and environmental criteria; proposing a treatment and reuse scheme; and estimating costs and requirements, and potential financing options.

Both, the PFS and the DFS shall include an environmental and social risk screening consistent with GIZ safeguard standards (see example feasibility study), at varying levels of technical depth for PFS and DFS depending on the project context.

The bidder shall propose the structure and content of both studies (PFS and DFS) to be prepared under this assignment. The proposed structure shall reflect the bidder's methodological approach and demonstrate its suitability for assessing drainage water reuse pilot projects in the Iraqi context.

The proposed structure of the studies (on different technical depths) shall, at a minimum, outline the key analytical components, assessment steps, and deliverables, including technical, financial, institutional, and environmental and social aspects, as relevant to the pilot project options. The structure shall be aligned with good international practice and suitable for the preparation of financing-ready project proposals for BMZ and pre-feasibility level for EU funding instruments.

The contractor shall analyze the financing criteria, eligibility requirements, and procedural steps of BMZ and EU co-financing instruments relevant to the implementation of pilot projects on drainage water reuse. Based on this analysis, the contractor shall develop and assess two distinct pilot project options:

- a small-scale pilot project designed to comply with BMZ funding criteria, with an indicative financing volume of up to EUR 1 million (up to feasibility level); and
- a larger-scale pilot project designed to comply with EU financing criteria, with an indicative financing volume of up to EUR 25 million (up to pre-feasibility level).

The pilot project options developed under this work package may serve as the technical basis for an optional follow-on assignment for the support of the implementation of the pilot demonstration project for the BMZ financed option as described under section 7.1.

Example: Content of (Pre-) feasibility study (to be complemented by the consultant)

1. Executive Summary

- Project vision and specific solution (e.g., "Solar-powered Modular Desalination & Blending Unit").
- Key performance indicators: capacity ($m3/day$), water quality class (A-D), and estimated Return on Investment (ROI).

2. Technical Concept Design (The Solution)

- Process Engineering: Detailed selection of treatment technologies (e.g., Ultrafiltration, Reverse Osmosis, or Constructed Wetlands).
- Infrastructure Design: Pipe routing, pumping stations, and automated "Blending Units" for precision salinity control.
- Energy Strategy: Integration of renewable energy (e.g., on-site PV systems) to lower operational costs.
- Automation & Monitoring: SCADA systems for real-time monitoring of EC (Electrical Conductivity), pH, and flow rates.
- Others

3. Detailed Site & Resource Validation

- Topographic Survey: Exact location of drainage outfalls and field distribution nodes.
- Hydrochemical Baseline: Multi-seasonal water quality analysis (Salinity, Nutrients, Pathogens, Pesticides).
- Soil Impact Modeling: Predicting long-term soil health and potential salinization based on the chosen treatment.
- Others

4. Risk Management Plan (Water Reuse Risk Management - WRRM)

- Hazard Identification: Micro-pollutants, heavy metals, and pathogens
- Preventive Measures: Defining barriers such as "minimum distance to crops," "UV disinfection," or "specific irrigation methods" (e.g., subsurface drip).
- Compliance Strategy: Alignment with national and EU 2020/741 standards for reclaimed water quality classes.

5. Financial and Economic Model

- Capital Expenditure (CAPEX): Itemized Bill of Quantities (BoQ) for construction, equipment, and land acquisition.
- Operational Expenditure (OPEX): Energy, chemicals, membranes, labor, and compliance monitoring.
- Cost-Benefit Analysis (CBA): Calculating the "Value of Water," including yield stability, fertilizer savings (nutrient recovery), and environmental externalities.

6. Institutional & Legal Planning

- Permitting Roadmap: List of required environmental and water-use permits.
- Governance Model: Ownership structure (e.g., Public-Private Partnership, Water User Association, or Farmer Cooperative).
- Tariff Structure: Proposed water pricing model for participating farmers.

7. Implementation & Project Delivery

- Procurement Strategy: Tendering process for technology providers.
- Project Schedule: Gantt chart from engineering design to commissioning.
- Social Acceptance & Training: Capacity-building programs for farmers to ensure safe handling of reclaimed water.

8. Conclusion & Investment Recommendation

- Viability Verdict: Final "Go/No-Go" based on technical robustness and financial health.
- Next Steps: Pilot phase design or full-scale construction launch.

Annex:

- Site map
- Design drawings

Milestones for work package 3	Delivery period
DFS for BMZ financed demonstration projects completed	10 months after contract start
PFS for EU financed demonstration projects completed	12 months after contract start
PFS and DFS ready for financing, for a demonstration plant for the use of drainage water	12 months after contract start

2.3 Project and knowledge management requirements

Requirements on the assignment of experts:

- The contractor is responsible for selecting, preparing, training and steering the experts assigned to carry out the advisory services.

Requirements on materials and equipment and operating costs:

- The contractor makes the required materials, equipment and consumables available and covers their operating and administrative costs.

Requirements on expenditure management and cost control:

- The contractor manages costs and expenditures, accounting processes and invoicing in line with GIZ requirements.

Monitoring and reporting requirements:

- The contractor plays an active role in the results-based monitoring of the project. Regular monitoring activities must cover at least the following areas:
  - Degree to which activities are implemented
  - Degree to which the indicators and milestones listed in section 2.2 of these ToRs have been achieved
  - Results that have occurred in the contractor's sphere of responsibility
  - Results that have occurred outside the contractor's direct sphere of responsibility

The contractor reports to GIZ and to the technical working group as follows:

Instead of the reporting language stipulated in GIZ's General Terms and Conditions of Contract (German), the contractor provides the following reports in the following language:

- Inception report (within four weeks after contract signature), including detailed work plan, methodology, and data-collection plan.
- Option report 2 months after contract start
- Feasibility study (BMZ) 10 months after contract start
- Pre-Feasibility study 12 months after contract start

All reports shall be written in English and include an executive summary, visualised data, and annexed datasets (Excel / GIS). An Arabic translation of each report shall be provided.

Requirements for company-wide learning, knowledge and innovation:

- Contributions to conferences: Baghdad international Water Conference 2027
- The contractor provides support in implementing a project evaluation with special emphasis on ensuring the effectiveness of the knowledge management process.
- (Virtual) debriefing with the BMZ and the responsible Competence Centre KC4D40 of the GIZ Sectoral Department at the end of the contract term as well as submission (in a single package) of the materials developed and interim and final reports to the Competence Centre.
- The contractor expresses willingness, if required, to support project assistants or staff members on temporary placements who, in the context of GIZ's separately financed training programmes for junior employees, work in and undertake special tasks for the project.

Backstopping requirements:

The contractor ensures appropriate backstopping. The following services form part of the standard backstopping package. In accordance with GIZ's General Terms and Conditions for supplying services and work on behalf of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, these services – as well as the ancillary personnel costs – must be priced into the fee schedules of the staff listed in the tender:

- The contractor's responsibility for its own staff;
- Ensuring the flow of information between GIZ and the contractor's field staff;
- Process-oriented technical and conceptual steering of the consulting services;
- Steering adaptations to changing framework conditions;
- Performance monitoring;
- Ensuring the administrative management of the project;
- Ensuring compliance with reporting requirements;
- Technical support by the contractor's staff for its personnel on the ground;
- Making local use of and sharing the lessons learned by the contractor with the GIZ team.

All documentation shall be prepared in a form that allows its direct use for possible implementation activities under an optional contract extension as outlined in section 7.1.

2.4 Data protection and information security

The provisions on data protection and information security of the current version of GIZ's General Terms and Conditions of Contract (section 1.11 Data protection) apply.

2.5 Other requirements

Safeguards and gender measures with specific reference to services:

In order to promote gender equality and avoid or mitigate possible unintended negative impacts in its area of responsibility, the contractor should implement the following measures:

Gender equality:

The preparation of the pilot project concept (Work Package 3) should include a gender analysis that clearly describes the potential impact of the proposed project on gender equality and outlines measures to prevent or mitigate any unintended negative effects.

Environmental protection and climate action (climate change mitigation/adaptation):

The preparation of the pilot project concept (Work Package 3) should include an in-depth environmental and climate impact assessment that clearly describes the potential impacts of the proposed activities on ecosystems, natural resources, and greenhouse gas emissions. The assessment should also identify risks related to climate resilience, outline measures to prevent or mitigate adverse environmental effects, and highlight opportunities to enhance positive climate and sustainability outcomes. In addition, it should explicitly demonstrate the extent to which the proposed project makes a concrete contribution to climate change adaptation.

Conflict and context sensitivity:

The preparation of the pilot project concept (Work Package 3) should include a comprehensive context and conflict analysis that clearly describes the political, social, economic, and security-related conditions in the project area. The analysis should identify existing and potential conflicts, key stakeholders, and underlying drivers of tension. It should also outline specific risks that may affect project implementation, as well as feasible mitigation measures to address them. Furthermore, the analysis should examine the potential impact of the proposed project on local dynamics, including any possible unintended negative effects—such as reinforcing existing inequalities or exacerbating tensions—and propose concrete strategies to prevent or mitigate such impacts.

Security precautions:

The overall security context in Iraq is fragile and volatile. This manifests in violent clashes, terrorist attacks, or armed conflicts between ethnic and denominational groups as well as the increasing presence of militias with their own political agenda. The political and tribal landscape is fragmented, and power constellations are futile. Furthermore, tensions between external actors as well as the escalation of conflicts in neighbouring countries could exacerbate existing tensions and instability within Iraq.

Therefore, the contractor is obliged to make itself familiar with the national guidelines and procedures and plan accordingly. GIZ also has its own operative Risk Management Office in place which will share limited advisory in the implementation process, therefore a timely contact with Risk Management Office (RMO) GIZ is recommended. Specific details will be shared with the contractor. However, GIZ is not liable for the safety and security of staff of other organisations. Any information-sharing is to be understood as non-binding and information will only ever be shared without any claim to be complete or guarantee of completeness or that the information is of use to the recipient. GIZ carries no liability for the security risk management for consulting firms; the duty of care remains with the contracting entity.

All staff travelling to Federal Iraq are to register with the BMZ through the RMO in the given timeline that will be shared by the RMO and inform the RMO when entering or departing Iraq.

All staff based in or deployed to Iraq (on a permanent basis or planning duty travel) must register with the GIZ-own Emergency Mass Notification System (EMNS). Should the BMZ or GIZ Country Directors order an evacuation or suspension of duty travels for GIZ staff and contractors, such orders are to be complied with (see section 2.2.7 of the General Terms and Conditions).

Prior to arrival in Iraq, the contractor is required to attend a security briefing from the GIZ Risk Management Office (RMO). The contractor should inform the GIZ Risk Management Office of any security incidents should they affect their personnel while in Iraq.

A budget to cover all costs associated to security precautions has been specified, please regard 5.8 other costs.

3. Technical-methodological concept

In this section, the tenderer is required to reflect on the objectives and terms of reference of the tender at hand, describe the partner system and its processes in the area of responsibility and present the technical-methodological concept for completing the tasks listed in section 2 and achieving the set objectives. In addition, the tenderer must describe the design of the project management process.

3.1 Interpretation of objectives
(section 1.1 of the assessment grid)

The tenderer is required to interpret the objectives for which it is responsible. Simple repetition of the objectives formulated in section 2 of the ToRs is not desired. Rather, the contractor is to describe and interpret the changes in the partner system that are to be directly achieved by the object of the tender procedure. The resulting positive impact on the partner system (section 1.1.1 of the assessment grid) should also be presented.

The contractor must undertake a critical examination of the ToRs (section 1.1.2 of the assessment grid), by:

- undertaking an assessment of the appropriateness of the personnel concept for implementing the scheduled tasks;
- providing an assessment of the results hypotheses for achieving the objectives and possible risks in implementation
- making an assessment of the technical concept and a critical review of the structure and methodological coherence of the PFS and DFS.

3.2 Processes and actors in the partner system
(section 1.2 of the assessment grid)

Processes describe actions or sets of tasks that are necessary in order to render specific services in a sector or in the cooperation/partner system. Specific actors are given responsibility

for determining and implementing these actions and sets of tasks in line with the regulations. Actors are usually institutions such as ministries, local governments, associations and chambers, non-governmental organisations, companies in a sector or individual businesses, universities or banks, but may also be individuals (e.g. a person with higher decision-making authority).

The tenderer is required to describe, using existing documents where possible (see annexes), the processes in the sector or partner system that are relevant to the services put out to tender (section 1.2.1 of the assessment grid).

The tenderer is required to present the actors (partners and others) who are relevant for the tender in the form of a map of actors. As far as possible, it should list the actors by name. Their mandates as well as strengths, weaknesses and interests with respect to the services put out to tender are also to be briefly presented (section 1.2.2 of the assessment grid).

In addition, the tenderer is required to describe the interaction between the actors mentioned above. This can consist of a description of the specific collaboration between individual actors in the processes listed above, of the dependencies or conflicts between the actors and their consequences or of existing dialogue and communication formats (section 1.2.3 of the assessment grid).

3.3 Strategy
(section 1.3 of the assessment grid)

The strategy for delivering the services in the tender is the core element of the technical-methodological concept. It is composed of the following elements:

- Procedure for achieving the objectives stated in section 2.2 of these ToRs
- Development of partnerships with the relevant actors
- Approaches for leverage effects and measures for scaling-up
- Consideration of environmental and social compatibility requirements (including gender equality)
- Appropriate consideration of further requirements

3.3.1 Strategic approach to achieving the objectives mentioned in the ToRs
(section 1.3.1 of the assessment grid)

The tenderer is required to describe and justify the approach it plans to adopt in order to achieve the milestones, objectives and results (see section 2) for which it is responsible.

3.3.2 Building partnerships with the relevant actors
(section 1.3.2 of the assessment grid)

The tenderer is required to develop and describe a strategy for developing the cooperation with the actors in the partner system who are relevant for the implementation of the services in the tender. The project partnerships already mentioned in section 1 must also be taken into account.

3.3.3 Approaches for leverage effects and measures for scaling-up
(section 1.3.3 of the assessment grid)

The tenderer is required to state whether there are promising approaches for leverage effects beyond the measures mentioned in section 2 (for example through targeted measures in the field of 'knowledge management') and to describe them. In doing so, the tenderer is required to present and explain measures that promote both horizontal and vertical scaling-up. In particular, the tenderer must submit proposals on how innovations that have been developed in the context of implementation can be disseminated beyond the sphere of influence of the project.

3.3.4 Consideration of environmental and social compatibility requirements
(section 1.3.4 of the assessment grid)

Gender equality

The tenderer is required to outline in the tender how it can prevent negative impacts on gender equality in its area of responsibility and how it can contribute to improving gender equality through corresponding measures (see also relevant requirements in section 2.5). The tenderer shall also describe the specific actions it proposes to take in this regard, including how gender considerations will be integrated into planned trainings, study tours and workshops, how female staff and female leadership from partner institutions will be actively included in capacity development activities, and how the proposed approach will strengthen equal participation and representation throughout the implementation of the assignment.

Requirement: 'Gender equality':	10 points out of 10 (maximum)

3.4 Project management
(section 1.4 of the assessment grid)

In this section, the tenderer presents the operational plan for implementing the services in the tender, describes the procedure for coordination with GIZ or the project and the project partners, and explains its monitoring procedure.

3.4.1 Operational plan
(section 1.4.1 of the assessment grid)

The tenderer is required to draw up and explain an operational plan for implementing the strategy described in section 3.3, including a plan for the assignment of all the experts included in the tender. The operational plan must include the assignment times (periods and expert days) and assignment locations of the individual experts, the milestones as presented in section 2 and, in particular, describe all the necessary work stages in detail and in chronological order. The tenderer can define further milestones beyond those prescribed in section 2 and map them out in the plan of operations.

3.4.2 Coordination with GIZ or the commissioning project
(section 1.4.2 of the assessment grid)

In the tender, the tenderer is required to describe the procedure for coordinating with GIZ or with the commissioning project.

3.4.3 Steering or coordination of measures with the relevant implementing partner
(section 1.4.3 of the assessment grid)

In the tender, the tenderer is required to name the implementing partners relevant for implementing the services and to describe and explain the procedure for steering or coordinating the measures with them.

3.4.4 Monitoring
(section 1.4.4 of the assessment grid)

In the tender, the tenderer is required to describe how it will regularly capture and document the status of completion of the tasks, the achievement of objectives, the results achieved and the risks in the area for which it is responsible in accordance with the specifications set out in section 2.

In the tender, the tenderer is required to describe how it can ensure that the requirements resulting from the monitoring system of the project or the partner are met (see section 2). In doing so, the tenderer is required to describe how the information that is relevant for monitoring is collected and in what form and at what intervals monitoring data are updated.

3.5 Further requirements
(section 1.5 of the assessment grid)

The tenderer is required to explain and, as far as possible, provide specific evidence of how it will make use of national resources (for example national institutions, network partners etc.) in the context of service delivery.

The tenderer is required to describe its backstopping strategy. A CV must be provided for the positions for technical and administrative backstopping.

Requirement: National resources:	7 points out 10 (max.)
Requirement: Backstopping strategy:	3 points out 10 (max.)

4. Personnel

The tenderer is required to provide ‘experts’ for the positions referred to and described (scope of tasks and qualifications) in this section on the basis of corresponding CVs.

The requirements on the format and content of the CVs are described in section 6.

The qualifications mentioned below correspond to the requirements for achieving the highest number of points in the technical assessment.

'One year of professional experience' is therefore defined as a cumulative 12 expert months with at least 18 expert days per month, provided no diverging definition is specified for individual qualifications.

Cooperation with scientific and research institutions is encouraged.

Expert 1: Team leader / Senior Water Resources Expert with international experience (section 2.1 of the assessment grid)

This position is a key expert.

Tasks of expert 1:

- Overall responsibility for the advisory packages of the contractor, including technical and methodological guidance and quality assurance of all delivered services
- Ensuring the coherence and complementarity of the contractor's services with other services delivered by the project at local and national level
- Responsibility for taking cross-cutting themes into consideration (for example, gender equality)
- Staff management, in particular identifying the need for short-term assignments within the available budget, planning and managing the assignments and supporting experts
- Ensuring that monitoring procedures are carried out
- Regular and specific reporting in accordance with deadlines
- Responsibility for checking the use of funds and financial planning in consultation with the commission manager at GIZ
- Supporting the commission manager in updating and/or adapting the project strategy, in evaluations and in preparing a follow-on phase
- Elaboration of training concept
- Elaboration of PFS and DSF structure
- Elaboration of PFS and DFS, supported by technical experts

Qualifications of expert 1:

Education/training (section 2.1.1 of the assessment grid):	University degree (e.g. master's or German Diplom) in Water Resources Management, Agricultural hydraulic engineering, Mechanical Engineering, Geography or Environmental Engineering
Language (section 2.1.2 of the assessment grid):	Knowledge of English, C1-level in the Common European Framework of Reference for Languages
General professional experience (section 2.1.3 of the assessment grid):	9 years of professional experience in agricultural water management
Specific professional experience (section 2.1.4 of the assessment grid):	7 years of experience in the design and implementation of irrigation / drainage systems (3 out of 10 points), 3 years of experience in water-reuse projects (3 out of 10 points),

	2 years of experience with nature-based (treatment) solutions (2 out of 10 points), 3 years of experience in elaboration of feasibility studies (2 out of 10 points). All specific professional experience within the last 15 years.
Leadership/management experience (section 2.1.5 of the assessment grid):	5 years of management experience in projects, companies or other organisations with disciplinary leadership responsibility for 6 people
International professional experience outside the country/region of assignment (section 2.1.6 of the assessment grid):	5 years of professional experience outside the MENA-region.
Professional experience in the country/ region of assignment (2.1.7 of the assessment grid):	5 years of professional experience in the MENA region (in accordance with UN DESA Statistics Division) or comparable arid/semi-arid contexts
Experience in the field of development cooperation (section 2.1.8 of the assessment grid):	5 years of experience in development cooperation projects
Other (section 2.1.9 of the assessment grid):	Not applicable

Expert 2: Irrigation and Agricultural Water-Use Expert
(section 2.2 of the assessment grid)

This position is a key expert.

Tasks of expert 2:

- Conduct a detailed assessment of existing irrigation systems and practices in the Hillah River Basin.
- Analyse irrigation-water efficiency, conveyance losses, and drainage-water generation.
- Design and implement field surveys and sampling campaigns in coordination with MoWR provincial departments.
- Perform scenario analyses comparing traditional and modern irrigation systems and quantify expected changes in drainage-water generation.
- Contribute technical inputs to the prioritisation of reuse options and to the PFS and DFS.
- Provide training to the project partners

Qualifications of expert 2:

Education/training (section 2.2.1 of the assessment grid):	University degree (e.g. master's or German Diplom) in Irrigation Engineering, Agricultural Engineering
Language (section 2.2.2 of the assessment grid):	Knowledge of English, C1-level in the Common European Framework of Reference for Languages

General professional experience (section 2.2.3 of the assessment grid):	8 years of professional experience in the irrigation planning, operation, and water-use efficiency
Specific professional experience (section 2.2.4 of the assessment grid):	5 years of professional experience in assessing irrigation-system performance and modernisation (5 out of 10 points), and in applying remote-sensing data (e.g. FAO WaPOR) and GIS tools for irrigation analysis (5 out of 10 Points) All specific professional experience within the last 15 years.
Leadership/management experience (section 2.2.5 of the assessment grid):	Not applicable
International professional experience outside the country/region of assignment (section 2.2.6 of the assessment grid):	Not applicable
Professional experience in the country/ region of assignment (2.2.7 of the assessment grid):	3 years in the MENA region (in accordance with UN DESA Statistics Division) or comparable arid/semi-arid contexts
Experience in the field of development cooperation (section 2.2.8 of the assessment grid):	2 years of experience in development cooperation projects
Other (section 2.2.9 of the assessment grid):	Not applicable

Expert 3: Drainage-Water Treatment and Reuse Expert
(section 2.3 of the assessment grid)

This position is a key expert.

Tasks of expert 3:

- Identify and evaluate treatment technologies suitable for drainage-water reuse in Iraq (e.g. constructed wetlands, solar desalination, sedimentation basins).
- Develop and compare technical process flows and treatment configurations for different reuse applications.
- Assess water-quality requirements and treatment levels in line with FAO and WHO guidelines.
- Estimate investment and operation costs and identify potential local supply chains for treatment technologies.
- Provide engineering inputs to the PFS and DFS
- Provide training to the project partners

Qualifications of expert 3:

Education/training (section 2.3.1 of the assessment grid):	University degree (e.g. master's or German Diplom) in Environmental, Process, or Civil Engineering with a focus on wastewater or reuse technologies.

Language (section 2.3.2 of the assessment grid):	Knowledge of English, C1-level in the Common European Framework of Reference for Languages
General professional experience (section 2.3.3 of the assessment grid):	8 years of professional experience in water-, wastewater-, drainage water or saline/brackish water-treatment design and implementation
Specific professional experience (section 2.3.4 of the assessment grid):	5 years of professional experience in desalination plants (3 out of 10 points), and in Nature-based Solutions (7 out of 10 points) All specific professional experience within the last 10 years.
Leadership/management experience (section 2.3.5 of the assessment grid):	Not applicable
International professional experience outside the country/region of assignment (section 2.3.6 of the assessment grid):	Not applicable
Professional experience in the country/ region of assignment (2.3.7 of the assessment grid):	3 years in the MENA region (in accordance with UN DESA Statistics Division) or comparable arid/semi-arid contexts
Experience in the field of development cooperation (section 2.3.8 of the assessment grid):	2 years of experience in development cooperation projects
Other (section 2.3.9 of the assessment grid):	Not applicable

Expert 4: Environmental Economist / Planner
(section 2.4 of the assessment grid)

This position is a key expert.

Tasks of expert 4:

- Conduct the economic and financial assessment of identified reuse and treatment options.
- Estimate investment and operational costs and analyse cost-recovery mechanisms.
- Evaluate the economic feasibility and long-term sustainability of proposed solutions, including potential co-financing or PPP arrangements.
- Perform socio-economic and institutional analysis related to reuse implementation.
- Contribute to the design of the PFS and DFS.
- Developing recommendations for integration of drainage-water reuse into national planning frameworks.

Qualifications of expert 4:

Education/training (section 2.4.1 of the assessment grid):	University degree (e.g. master's or German Diplom) in Environmental Economics or Water-Resources Planning.

Language (section 2.4.2 of the assessment grid):	Knowledge of English, C1-level in the Common European Framework of Reference for Languages
General professional experience (section 2.4.3 of the assessment grid):	7 years of professional experience in economic or institutional analysis of environmental projects.
Specific professional experience (section 2.4.4 of the assessment grid):	5 years of professional experience in cost-benefit analysis (5 out of 10 points), and in financial feasibility, or investment planning for water wastewater, or climate-adaptation projects (5 out of 10 points) All specific professional experience within the last 10 years.
Leadership/management experience (section 2.4.5 of the assessment grid):	Not applicable
International professional experience outside the country/region of assignment (section 2.4.6 of the assessment grid):	Not applicable
Professional experience in the country/ region of assignment (2.4.7 of the assessment grid):	3 years in the MENA region (in accordance with UN DESA Statistics Division) or comparable arid/semi-arid contexts
Experience in the field of development cooperation (section 2.4.8 of the assessment grid):	2 years of experience in development cooperation projects
Other (section 2.4.9 of the assessment grid):	Not applicable

UN DESA regions are defined as East Africa, Central Africa, North Africa, Southern Africa, West Africa, South America, the Caribbean, Central America, North America, Central Asia, East Asia, South Asia, Southeast Asia, West Asia/Middle East, Eastern Europe, Northern Europe, Southern Europe, Western Europe, Australia, Melanesia, Micronesia and Polynesia; refer to UNSD methodology for country assignment.

The tenderer must assign all the proposed experts to the required qualifications and clearly present them in a separate table preceding the CVs. The summary presentation must mention only qualifications that are actually indicated in the CVs. Professional experience must be evidenced by meaningful references in the CVs. It is advisable to make explicit reference to each example of professional experience.

Soft skills of team members

In addition to their specialist qualifications, all team members are also expected to have the following qualifications:

- Team skills
- Initiative
- Communication skills
- Sociocultural and intercultural skills
- Efficient partner- and client-oriented working methods

- Interdisciplinary thinking

Soft skills are not evaluated.

5. Costing requirements

In your tender, please do not deviate from the specification of inputs required in these ToRs (the number of experts and expert days, the budget specified in the price schedule). This is part of the competitive tender and is used to ensure that the tenders can be compared objectively. Please note: only services that were commissioned by GIZ and rendered by the contractor will be remunerated. We would also like to point out that it may not be necessary to make use of the total number of proposed expert days.

5.1 Assignment of experts

The number of expert days corresponds to full working days.

Expert	Expert days in the country of residence / remote	Availability of expert in the country of assignment* in expert days	Expert days in total	Consecutive stay > 3 months (see General Terms and Conditions, section 3.6.2)
Expert 1: Team leader / Senior Water Resources Expert	50	42	92	No
Expert 2: Irrigation and Agricultural Water-Use Expert	50	42	92	No
Expert 3: Drainage-Water Treatment and Reuse Expert	50	42	92	No
Expert 4: Environmental Economist / Planner	40	14	54	No

5.2 National administrative staff

– Not applicable –

5.3 Travel expenses

5.3.1 Travel – sustainability considerations

GIZ would like to reduce greenhouse gas emissions (CO_2 emissions) caused by travel. When preparing your tender, please incorporate options for reducing emissions, for example by selecting the lowest-emission booking class (economy) or using means of transport, airlines and flight routes that are more CO_2-efficient. For short distances, travel by train (second class) or e-mobility are the preferred options.

CO_2 emissions caused by air travel must be offset. GIZ specifies a budget for this, through which the carbon offsets can be settled against evidence.

There are many different providers in the market for emissions certificates, and they have different climate impact ambitions. The Development and Climate Alliance has published a list of standards (only in German available). GIZ recommends using the standards specified there.

5.3.2 Travel expense requirements

The travel expenses must be costed as follows by the contractor:

Travel expenses item	**Quantity/budget**
Total number of international flights (round trips) – Economy class	10
Total number of regional/national flights	0
CO_2 offsets for flights	EUR 1,000.00 An unalterable budget for CO2 offsets for settlement against evidence is specified.
Transport costs (rail travel, car travel, public transport) – Only for airport transfer outside Iraq. Transport in Iraq provided by GIZ.	10
Per-diem allowances	140 days
Accommodation allowances	Accommodation provided by GIZ
Other travel expenses (visa, project-related travel expenses outside the place of business etc.)	EUR 1,500.00 A fixed budget for settlement against evidence is specified for visa and other travel expenses.

Per-diem allowances are reimbursed as a lump sum up to the maximum amounts permissible under tax law for each country as set out in the country (for Iraq: 63.00 EUR) table in the

circular from the German Federal Ministry of Finance on travel expense remuneration (download at https://www.bundesfinanzministerium.de).

In addition, for the following items, reasonable costs can be settled against evidence up to the proposed amount.

- Flight costs
- Transport costs

Please note that GIZ will provide transport and accommodation in Iraq.

All travel activities must be agreed in advance with the project manager. Travel expenses must be kept as low as possible.

5.4 Materials and equipment

– Not applicable –

5.5 Operating costs in the country of assignment

GIZ provides the operating infrastructure in the country of assignment including transport and working space.

5.6 Workshops, education and training

The contractor is not responsible for the logistical organisation of the workshops, study tour and conference (including venues, accommodation, transport, and catering) and therefore the costs do not need to be specified.

5.7 Local contributions

Laboratory measurements are carried out by the partner authorities in consultation with the consultant.

5.8 Other costs

Security costs must be neutral with regard to competition (specified budget)

GIZ can provide the following to the winning tenderer. Costs for such items **do not need** to be included in the submitted bids:

- Accommodation in GIZ whitelisted accommodation
- Movements in GIZ contracted armored vehicles with approved private security companies

If the tenderer chooses to use these provisions, then they must adhere to all rules and regulations under GIZ's Security Risk Management (SRM) concept (will be shared with the winning

tenderer only). The contractor is required to prevent any behaviour that could frustrate GIZ's SRM concept.

If the tenderer chooses to manage their own security, then the tenderer is required to develop a safety and security risk management concept that follows international norms such as 31000ff or the Humanitarian Security Risk Management approach. An outline of the concept must be submitted with the financial bid. GIZ will require the winning tenderer to elaborate its concept.

Should the bidders concept include the services of a private security provider, the security provider should meet the following requirements:

- Possession of international certificates through full membership with the International Code of Conduct Association or a similar qualified institution such as PSC1.
- Well-established in Federal Iraq with at least ten years of auditable service.
- Established liaison with the Iraqi authorities, security actors, and community and tribal leaders in Baghdad.
- High level of discretion, professionalism, and dependability, proven in crisis situations.
- 24/7 operations room in Baghdad.
- Threat and risk management assessment component that informs a detailed highly accountable journey management process, including where required, a comprehensive context and actor mapping.
- All weapons handling meets international standards and local laws.
- All weapons and armoured vehicles registered with the applicable authorities in Iraq.
- All vehicles armoured outside Iraq with international certificates provided.
- It is strongly recommended to use B6 armoured vehicles for all movements of international personnel.

For the implementation of the security concept and necessary trainings, the tenderers are expected to include a budget of up to 50,000.00 EUR in their financial bid. These costs will be reimbursed against evidence.

Moreover, GIZ strongly recommends that all international staff completes a "Hostile Environment Awareness Training" before deployment to Iraq if they have not completed such a course within the last 5 years. Up to 2,000.00 EUR per key expert will be reimbursed against evidence.

5.9 Flexible remuneration item

Budget for flexible remuneration: EUR 30,000.00

The fixed, unalterable budget above is earmarked in the price schedule for flexible remuneration. Flexible remuneration is intended to facilitate the flexible management of the contract by the commission manager at GIZ. The contractor can make use of the funds in accordance with section 3.6.5.7 of the General Terms and Conditions.

6. Requirements on the format of the tender

The structure of the tender must correspond with the structure of the ToRs. It must be legible (for example Arial, font size 11 or larger) and clearly formulated. The technical tender must be written in English.

The technical-methodological concept of the tender (section 3 of the ToRs) must not exceed 20 pages (not including the cover page, list of abbreviations, table of contents, brief introduction and CV for the backstopper). Additional annexes not requested will not be assessed. External content (e.g. links to websites) will also be disregarded.

The CVs of the staff proposed in accordance with section 4 of the ToRs must be in the EU format and not more than four pages in length. The CVs can also be submitted in English.

The CVs must clearly and unequivocally show what position the proposed person held, which tasks they performed and how long they worked during which period in the specified references. **The references contained in the CVs must therefore include the following information:**

- Name of the company/organisation/reference project in which the expert worked
- Position held and task(s) performed by the expert in the company/organisation/reference project
- Work outcomes or products produced by the expert, or expert's contribution to the completion of these outcomes and projects (if relevant)
- Duration of the expert's assignment in the company/organisation/reference project per calendar year in full-time expert days, weeks or months (for example: 2019: 2 months, 2020: 10 months, 2021: 1 month)
- Leadership experience/management: clear information on the reference projects or fixed positions within the company/organisation in which the requirements specified in section 4 were fulfilled (for example, period, number of persons for whom the expert had disciplinary responsibility, project budget)
- International professional experience/professional experience in the country of assignment: clear information on the reference projects or fixed positions in the company/organisation in which the requirements specified in section 4 were fulfilled (for example, actual duration of assignment on the ground in full-time expert days, weeks or months)

In order to facilitate the assessment, we request that you number the references sequentially and provide only references that are clearly related to the object of this tender.

7. Options or follow-on contract

7.1 Option to expand the service content/extend the contract term pursuant to section 132 (2) no. 1 German Act against Restraints of Competition (GWB)

GIZ can exercise the following option if it wishes to expand the tendered services. This is described in detail below.

Nature and scope: While retaining the overall character of the contract, there is a possibility of GIZ continuing to obtain the services specified in section 2 of these Terms of Reference to

include the implementation of the pilot demonstration project developed under Work Package 3. This may comprise:

- detailed technical design
- preparation of tender documents (following FIDIC contract standards)
- supervision of construction / installation
- capacity development for operation and maintenance
- additional analytical or advisory services required for full implementation

The items shown in section 5 (Costing requirements) of these Terms of Reference can be increased by up to EUR 600,000.00 and extended by up to 18 months. Within this framework, the options can be exercised in up to two parts.

Precondition: GIZ's commissioning party extends and/or provides additional funding for the current project or commissions a follow-on project and/or an agreement is concluded to provide cofinancing for the measure.

7.2 Follow-on contract pursuant to Section 14 (4) no. 9 German Ordinance on the Award of Public Contracts (VgV)

Pursuant to Section 14 (4) no. 9 VgV, GIZ reserves the right to award a follow-on contract to the contractor in order to procure similar services.

Scope of possible services: The term of the follow-on contract must not exceed twice that of the original contract, and the value of the follow-on contract must not exceed twice that of the original contract.

Condition: The above option is subject to GIZ receiving a commission from the commissioning party or the conclusion of an agreement for cofinancing of the measure. Any follow-on contract must be awarded within three years of the award date of the original contract.

A follow-on contract under 7.2 can be considered only as an alternative to the option in 7.1.

8. Annexes

- Module proposal (in German)
- Results matrix
- Project factsheet
- Technical Team Members' Information
- National Development Plan 2024-2028
- National Strategy for the Protection and Improvement of the Environment in Iraq 2024-2030
- Strategy for Water & Land Resources in Iraq