Terms of Reference

Preparation of project documentation and a project fiche in the form of a GCF Concept Note for a Water-Energy-Food-Ecosystems (WEFE) Nexus initiative encompassing a Floating Photovoltaic Plant and Precision Agriculture Systems at Oued El Makhazine Dam and the associated irrigated perimeters in the Tanger-Tétouan-Al Hoceima (TTA) Region of Morocco.

In the framework of the

GEF/UNEP MedProgramme Child Project 2.2 "Mediterranean Coastal Zones: Managing the Water-Food-Energy-Ecosystem NEXUS"

implemented by the Global Water Partnership-Mediterranean (GWP-Med)

1. Introduction

The MedProgramme represents the first GEF[1] multi-focal area initiative in the Mediterranean Sea aiming to carry out priority actions to reduce major transboundary environmental stresses in its coastal areas while strengthening climate resilience and water security and improving the health and livelihoods of coastal populations. The MedProgramme is implemented by various Executing Partners[2] in nine beneficiary countries sharing the Mediterranean basin: Albania, Algeria, Bosnia and Herzegovina, Egypt, Lebanon, Libya, Montenegro, Morocco and Tunisia. Its eight Child Projects (CPs) cut across four different Focal Areas of the Global Environment Facility, namely International Waters, Biodiversity, Chemicals and Waste and Climate Change.

Child Project 2.2 (CP 2.2) with title "Mediterranean Coastal Zones: Managing the Water-Energy-Food and Ecosystems Nexus" is implemented by the Global Water Partnership-Mediterranean (GWP-Med) and includes a set of activities aimed at balancing competing water uses through water, energy, food and ecosystems integrated governance, to enhance environmental security and sharing of benefits. Along with the Water-Energy-Food-Ecosystems (WEFE) Nexus approach, the "Source-to-Sea" approach is used as well. Thus, the project goes beyond Environment and Water, the typical domains of action in water related projects, addressing also Energy and Agriculture considerations, facilitating sectoral and spatial integration through tracing the root causes and the solutions of interlinked challenges faced within and beyond the coastal zone.

The Assignment described in this document is carried out in the framework of Component 3 of CP 2.2, dedicated to the *Testing and upscaling of Nexus solutions and particularly the "preparation of projects documentation/investment fiches for priority interventions and/or necessary investments."*

More specifically, it relates to a WEFE Nexus intervention focused on **the Oued El Makhazine dam and related**

[1] The Global Environment Facility (GEF) supports developing countries to address pressing environmental issues particularly related to: biodiversity loss, chemicals and waste, climate change, international waters, and land degradation.

[2] GEF Lead Implementing Agency: UN Environment. Other GEF Implementing Agency: European Bank for Reconstruction and Development (EBRD). Leading Executing Agency: UN Environment/MAP. Executing partners:
UNESCO International Hydrological Programme (IHP), European Investment Bank (EIB), Global Water Partnership – Mediterranean (GWP-Med), WWF Mediterranean Programme Office (WWF MedPO), IUCN, Priority Actions Programme Regional Activity Centre (PAP/RAC), Plan Bleu Regional Activity Centre (Plan Bleu), Specially Protected Areas Regional Activity Centre (SPA/RAC) and the Sustainable Consumption and Production Regional Activity Centre (SCP/RAC).

irrigated perimeters in the Tangiers-Tetouan-Al Hoceima (TTA) Region of Morocco.

This intervention has been identified in the context of the WEFE Nexus Policy Dialogue launched in 2022 by GWP-Med in the TTA Region and the preparation of the WEFE Nexus Assessment Phase I ('scoping phase', 2022-2024) that allowed for the identification and analysis of key cross-sectoral interlinkages as well as concrete lines of action to capture synergies and address trade-offs towards the sustainable management of natural resources, through a highly inclusive and collaborative stakeholder consultation process.

It is in this context that the WEFE Nexus intervention described in this document has been identified as a key investment able to enhance the socio-economic development of TTA Region through actions contributing to water, energy and food security as well as ecosystems/environment protection.

2. Background

The TTA region, like other areas in Morocco, is facing a significant water crisis, intensified by six consecutive years of structural drought. Reservoir levels have declined substantially, averaging below 30%, with some locations experiencing even lower levels. This situation poses a serious threat to the drinking water supply for nearly 4 million residents. Water demand in the region has increased by approximately 15% over the past five years, driven by population growth and economic development in sectors such as tourism and agriculture. Additionally, regional rainfall has decreased by 40% relative to the historical average, and climate projections indicate a further reduction of 10 to 20% by 2030, which could intensify the ongoing water scarcity.

The Region is exploring different solutions to face this critical situation, including through innovative approaches such as the WEFE Nexus, which provides the opportunity to address key challenges comprehensively by connecting the water, energy, and agriculture sectors as well as ecosystems and environmental protection.

The Loukkos is one of the key basins located in the TTA Region, it covers an area of 4,771 km^2 and has an average inflow of 1200 million cubic meters per year.[3] The river, along with its primary tributaries on the right bank, effectively drains a significant portion of the Moroccan Rif massif from which originates.

Oued El Makhazine dam is located in the Loukkos basin and is built in 1979 with an actual storage capacity of 673 MCM, for domestic purpose, irrigation, energy production, as well as protection against flooding.

The agricultural sector, well developed and oriented towards the intensification of production in the irrigated plains, relies heavily on both water security and energy security.

In particular, the Loukkos large hydraulic perimeter was established with its initial infrastructure dating back to 1977 and is recognized as one of the most significant agricultural development schemes in Morocco, with a total area of 47,210 hectares, distributed as follows: R'mel and Drader Right Bank Sector: 15,494 ha; Right Bank Plain Sector: 7,014 ha; Ksar Kbir Plain and Low Hills Sector: 3,700 ha; Dar Khroufa Sector: 21,000 hectares.

The Asjen irrigated perimeter, also associated with the Oued El Makhazine dam in Ouezzane province, covers a total area of 4,000 hectares dedicated to agriculture, of which only 2,500 hectares are in operation. Managing this area requires a water supply of 16 million cubic meters per year.

As part of its Green Morocco Plan (PMV) and Generation Green 2020-2030 strategy, the Moroccan government is promoting a major project aimed at strengthening the agricultural development of the Loukkos basin through the mobilization of new surface water resources and the encouragement of modern irrigated agriculture. This is characterized by the interconnection of the Oued El Makhazine dam (near Ksar El Kébir) to the Dar Khrofa dam (Larache Province) enabling water transfer - 100 million m^3 of water per year to strengthen the drinking water supply of the city of Tangier - and by the distribution of water by gravity where possible in the related perimeters, the treatment of water for drinking purposes and its use for irrigation and localized irrigation (micro-irrigation) in all farms that are part of the associated 21,000 ha. This initiative is planned for expansion to encompass a total of 32,000 ha as part of the hydro-agricultural development project that will be implemented once the water desalination station in Tangiers will be functional and the water provided through the interconnection to Dar

[3] https://www.researchgate.net/publication/360813141_Integrated_water_resources_management_in_the_Loukkos_basin_Morocco_an_approach_to_improve_resilience_under_climate_change_impact

Khrofa dam will be exclusively used for agriculture needs. The project also aims to create jobs and improve local incomes and living conditions and is expected to benefit around 30,000 farmers spread across ten rural communities in Larache province, 95% of whose farms are less than 5 ha in size.

In this context, the Regional Council of TTA has conducted a pre-feasibility study to evaluate the potential of renewable energy sources for meeting pumping requirements, ensuring the supply of drinking water and irrigation for the region's agricultural areas, while also aiming to reduce the current high annual energy costs associated with water pumping.

The study showed that the most optimal scenario for the Asjen irrigation project is represented by floating solar photovoltaic panels that allow to exploit available renewable resources, significantly reducing dependence on fossil-fuel electricity from the national grid, while ensuring stable and resilient production.

Therefore, the WEFE Nexus intervention described in this ToRs, which focuses on the Oued El Makhazine and related irrigated perimeters, supports the Moroccan government's initiative described above, while aligning with the overall objectives of the TTA region to improve green and competitive energy sources, reduce water demand and evaporation caused by rising temperatures, and mitigate water and environmental pollution through optimizing the application of agricultural inputs, such as chemical fertilizers and pesticides, that might also lead to enhanced profitability for farmers.

3. Description of the Assignment

Objectives of the Assignment

The assignment will include three key parts with the following objectives:

1- Prepare technical and economic studies related to the installation of a floating photovoltaic plant on the dam El Makhazine to generate electricity for water pumping to the Asjen irrigated perimeters and to reduce water evaporation. The estimated required installed capacity is around 13.5 MWp.

2- Develop the background and action plan and estimate the related costs/benefits for the (i) implementation of Precision Agriculture activities in selected agricultural areas of the irrigated perimeters, with focus on selected crops that are key for food security and socio-economic development of the region; (ii) upscaling of the activities beyond the selected agricultural areas using financial instruments that will be developed in cooperation with financial institutions.

3- Based on the above studies, the development of a project fiche in the form of a GCF Concept Note to facilitate access to this funding option, including preliminary environmental and social risk assessment and preliminary gender analysis.

4. Tasks – Requested services

The tasks to be undertaken by the Consultant are outlined below and organized by sections (Sections 1-4).

Section 1 : Inception Phase

The Consultant shall :

- Collect and undertake a rapid review of existing studies and available data pertinent to the assignment.
- Identify additional studies or data that are required providing a justification for each and potential sources of information,
- Identify remaining data gaps and define the approaches to address these remaining gaps,
- Propose adjustments to the methodology for the development of the studies described in this ToRs,
- Develop a detailed workplan for the implementation of the assignment,
- Prepare an inception report encompassing the elements described above,

- Facilitate a kick-off workshop with the Steering Committee to discuss the inception report. The consultant will be responsible for all logistical arrangements related to the organization of the one-day kick-off meeting, which will involve approximately 30 stakeholders. These responsibilities include, but are not limited to: renting of conference room, organising two coffee breaks and 1 lunch, interpretation French-English, audio-visual and hybrid participation equipment, etc.

Deliverables :

D1.1: Inception Report

D1.2: Report and Presentation in Power Point version for the kick-off workshop

Section 2: Feasibility study for the Floating Photovoltaic (FPV) Plant

The Consultant will be required to provide a complete feasibility study for the construction of a FPV plant in El Makhazine dam.

The consultant shall provide recommendations for the optimal configuration of the Plant (technology, capacity, area, yield, annual energy production, water evaporation rate…), and all relating technical specifications.

The technical specifications of the optimal configuration should allow the Consultant to clearly develop the outputs of this assignment.
The Consultant is expected to undertake seven activities :

1. Institutional Assessment

The consultant will undertake :

- A review of the national legislation and regulatory framework related to the :
    - management of the dam and any ownership aspects,
    - management of water resources and irrigation infrastructure including for energy pumping,
    - installation and operation of FPVs on water bodies,
    - permits requirements for renewable energy production,
    - compensation/subsidy/sale schemes for power generation from renewable energy sources,
    - environmental considerations related to FPV plants installation,
    - any other relevant regulatory aspect.
- A stakeholders mapping of relevant parties involved in the FPV project in Makhazine dam and evaluation of their respective mandates in relation to the installation and operation of the FPV plant,
- Assessment of coordination mechanisms among relevant stakeholders,
- Based on the findings, the Consultant will propose possible institutional schemes and governance models for the installation and operation of FPV plant detailing the roles, responsibilities and coordination mechanisms among involved stakeholders, and potential governance risks for each institutional scheme and governance model,

Deliverables :

D2.1: Institutional Assessment Report

2. Site assessment

This activity shall be performed as described below

- The Consultant shall review in details all existing studies and the available data related to the Sites and use the information available deemed relevant and satisfactory when preparing the feasibility study.
- Based on the available studies and the Site visit(s), the Consultant shall provide a Site Assessment, in order to evaluate and determine the Sites' suitability for the development of the Project. The Consultant shall evaluate the physical Site data and constraints, including but not limited to:
  - Ground conditions;
  - Flood risks, flood management;
  - Dam water level;
  - Evaporation rates;
  - Impact on soil and water;
  - Geotechnical and soil suitability for structures;
  - Access to the transmission grid;
  - Access to telecommunications infrastructures;
  - Access to the power during construction;
  - Logistical access for equipment supply (roads to be built and /or modified as the case may be);and
  - Any other specific Site conditions, such as the impacts on the environment (fauna and flora) and the impact of wind on the Plant.
- The Consultant shall perform its own due diligence of the meteorological data of the Site taking into account at least the provided studies and the conclusions of the Site visits.
- The Consultant shall analyse meteorological risks of the Site (wind, erosion…) and evaluate the relating impact on the Plant.
- The Consultant shall make recommendations based on its analysis.

Deliverables :

D2.2.1: Site assessment Report: including

- Due diligence of meteorological data.
- Suitability analysis for the Site, impact on soil and water, needed infrastructures...
- Water resources availability.
- Recommendations as per the site assessment.

D2.2.2: Presentation in Power Point version and synthesis in word version of the final version of the assessment report.

3. Conceptual design of the Plant

This activity consists in analyzing different configurations of the Plant, performing different analyses and simulations of numerous scenarios to select the Recommended Configuration for which a detailed analysis shall be performed under this task.

This activity shall include at least the following:

a) Plant design:

The plant design shall include at least the following:

- The Consultant shall identify all configurations (PV module technologies, inverters, floating structures, cables, anchoring…) deemed suitable for the Site taking into account at least:
  - The solar irradiation.
  - The available area.
  - The Site characteristics and conditions (nature of soil, site seismicity ….) and climate data (wind speed, temperature, evaporation rates, erosion …).
  - The variation of the reservoir's water level and total surface.
  - The components' maturity.
  - The components' compatibility.
- For each configuration, the Consultant shall analyze at least the inclination and/or angle of movement (in case of tracking system), the irradiation on module plan, gain in energy for each technology, distance between modules, the optimal peak capacity, the optimal inverter nominal capacity, estimated PR and yield, estimated CAPEX and OPEX, LCOE, evaporated water savings….

b) Recommended Configuration:

Based on the previous analysis, the Consultant shall provide an optimal configuration of the Plant for GWP-Med's approval ("Recommended Configuration") providing detailed arguments and calculations and indicating:

- The plant's nominal power capacity
- The recommended PV module and inverter technology (ies), floating structure, cabling (underwater vs overwater).
- The DC and AC capacity.
- The energy yield and losses breakdown.
- The annual water savings.

The Recommended Configuration shall be optimized and take into account, at least, the following criteria:

- CAPEX and OPEX,
- Levelized Cost Of Electricity (LCOE),
- Performance and availability,
- Land use and water consumption,
- Technical risks.

c) Electrical design and interconnection:

The Consultant shall identify the most optimal scenario(s) of the electrical design of the Plant including at least the DC configuration, the AC LV and MV configurations, connections boxes, step-up transformers, cables, etc. The Consultant shall also provide all the relating drawings including but not limited to LV, MV and HV single-line diagrams.

The Consultant shall assess the local grid (existing lines, substations….), identify and analyze the possible interconnection solutions based on conditions required by the field and TSO/DSO. The Consultant shall propose and duly justify the optimal interconnection solution of the Plant.

The Consultant shall provide a conceptual design for the optimal interconnection solution and estimate all associated costs including connection fees, grid enhancements, new transformers/substations to be built, installation of new lines, etc. If grid upgrades and improvements are required to be undertaken by TSO/DSO, the Consultant shall determine the scope and cost of the necessary upgrades.

d) Energy production analysis:

Based on the analysis above, the Consultant shall provide for the Recommended Configuration a complete

yield analysis report (based on P50, P75 and P90) detailing at least the Performance Ratio (PR) calculation, minimum energy production, the considered losses, shadowing, component degradation, Plant degradation, availability, variability…

e) Water savings analysis:

The Consultant shall provide for the Recommended Configuration a complete water evaporation analysis detailing the water savings due to the installation of the FPV plant on the dams. The analysis shall also include the economical aspects related to the water savings.

The Consultant shall define the minimum and maximum predicted water savings according to the site's historical data and forecasts.

f) Power needs analysis:

The Consultant shall determine the electrical power requirements for construction from initial mobilization to the commissioning phase. The Consultant shall also provide a description of the emergency power needs for the Plant during operation.

g) Water needs analysis:

The Consultant shall provide an assessment of water quality for use during construction and operation of the Plant. The Consuiltant shall also analyze the possibility of using the water in the dam for the Plant's water needs and provide a clear description of the procedure to follow in this case.

The Consultant shall provide specific water consumption ratios for the Recommended Configuration and calculate the total water requirement (daily, weekly, monthly and yearly) for the Plant covering all water usages (cleaning, and service water) during construction, operation and maintenance, taking into account the Sites' conditions.

h) Plans and drawings:

The Consultant shall provide plans and drawings for the Plant including at least:

- The preferred arrangement of the Plant as specified in the Recommended Configuration specifying :
  - the site layout including, the arrangement of the PV modules and array, the location of connection boxes, inverters, and LV/MV transformers, cables…
  - the location of the main buildings and the MV/HV substation; and
  - the battery limits of the Plant (the interconnection point between the Plant and roads, electricity (HV/MV evacuation & MV supply), water and telecommunication)
- The proposed grid Interconnection solution: power evacuation line, interconnection substation…).

Deliverables

D2.3.1:

- ***Conceptual Design of the Plant Report including:***
  - Plant design and optimization.
  - Recommended Configuration detailed yield report.
  - Electrical design of the Plant.
  - Energy production analysis.
  - Water savings analysis.

- Power needs analysis.
- Water needs analysis.

- ***PVSyst executable files for all studied scenarios as well as the Recommended Configuration.***
- ***Hourly production of the Recommended Configuration.***
- ***Sites layouts and DWG drawings (including the proposed grid interconnection point scheme)***

D2.3.2 Presentation in Power Point version and synthesis in word version of the Final version of the Report

4. Grid Impact Study

The Consultant shall perform a grid impact study of the Plant taking into account connection conditions required by the field and TSO/DSO . Therefore, the Consultant shall work with TSO/DSO (i) to conduct a grid impact assessment in order to ascertain whether the grid can accept the Recommended Configuration of the Plant at the agreed connection point and (ii) to assess the impact of each Recommended Configuration on the grid.

The grid impact study of the plant shall include the impact of the Recommended Configuration on (i) the electricity supply of the national grid as well as (ii) on the local and the national grid taking into account its topology and stability including but not limited to the grid functioning, operation and losses. Based on this, the Consultant shall define the technical constraints that the Plant should respect and the relating mitigations to be included in the technical specifications.

For this section, the Consultant shall prepare and present to the Steering Committee : (i) the exhaustive list of all data and information required for this study (ii) the adopted approach, (iii) and the relating deliverable. The Consultant will engage data collection and will take two weeks for this task, after which the Consultant shall continue the preparation of the assignment based on the available information.

In order to perform the grid impact study for the Plant, the Consultant shall take into consideration at least the following aspects:

- The complexity of the local grid, i.e. the structure, voltage and frequency stability, voltage levels, etc.
- The internal electrical configuration of the Plant including transformers.
- The electrical characteristics of the Plant components.
- The grid interconnection configuration of the Plant.
- Plant operation (up to the nominal power) and the relating reactive power needs.
- Plant operation conditions (start-up, low load…).
- Safe and secure operation conditions of the Plant.
- Dumped energy taking into account grid limits.

The grid impact study shall include at least the following aspects:

- Intensity transits.
- Voltage variations in the interconnection sub-stations.
- Voltage plan.
- Short-circuit power level.
- Amplitudes and limit-values of flickers, harmonics and all disturbances that could be generated by the Plant
- Sizing of the equipment based on the short-circuit power (P_{SC})
- Impact on the national grid protection plan.
- Plant's participation in the electrical faults (single phase or multiple-phase) which affect the grid.

- Ability of the Plant to operate in the normal conditions of voltage and frequency of the national grid.
- Ability of the Plant to operate when the grid voltage reaches exceptional values on limited duration (voltage ride-through).
- Fast voltage fluctuations (flickers).
- Harmonics generation.
- Imbalance rate.
- Any phenomena that may occur while coupling or decoupling the Plant to the national grid
- Impact of the Plant on the global reserve.
- Impact of the Plant production variations on power exchange with Spain.

After analyzing these parameters, the Consultant shall identify the appropriate measures and applicable standards suitable for the Plant in order to meet TSO/DSO requirements without having any impact on the national and / or Local Grid. Likewise, the Consultant shall identify the appropriate devices and equipment to protect the national and / or Local Grid against any disruptions the Plant may generate.

The Consultant shall develop models to assess the impact of the Plant on the Grid and to assess the load flow, short- circuit current and power calculations as well as the dynamic stability taking into account the specific parameters of the interconnection, the local grid and the Plant.

Afterwards, the Consultant shall identify the mitigations related to each aspect so that the simulation results will be consistent with the operating conditions of the national Grid as well as international standards recommended by the Consultant.

The Consultant shall include the following elements in the grid impact study report:

- A static model of the Plant (load flow calculation) indicating how Plant are represented (PV node, PQ Etc).
- A Plant model allowing the calculation the default currents (the direct, negative and zero impedance to be considered)
- A dynamic model of the Plant under PSS/E software to be provided with a document describing the different components of the model and the values of the main parameters. The Consultant shall use the PSS/E version used by the TSO/DSO (the model version shall be discussed before starting the simulations).

Moreover, the Consultant shall perform a dumped energy analysis as follows:

- The Consultant shall assess the dumped energy based on (i) the installed capacity of all plant in the region including the FPV, (ii) their hourly energy production profiles (iii) the current state of the local Grid and (iv)any extension may the installed capacity and the Grid have.

- The Consultant shall identify and analyze instantaneously (i) the evacuation lines load, (ii) the amount of the dumped energy and (iii) the corresponding PV Plant installed capacity that need to be released.

- The Consultant shall re-assess the dumped energy amount in case of :
  - Grid event (mainly the loss of one evacuation line), and
  - Different scenarios of the hourly production based on different meteorological data (P10, P25, P50, P75, P90…) that will be agreed with the Steering Committee.

- Based on the performed analysis results, the Consultant shall provide its recommendations including at least:

- The Plant installed capacities (indicating the corresponding dumped energy);
- The operation mode of the Plant;
- The electrical configuration of the Plant;
- The dumping strategy indicating how to release the relevant capacity from the Plant simultaneously or consequently.

- The Consultant shall focus also on the identification of equipment to measure instantaneously the evacuation line(s) load (or any specific line as requested by the Steering Committee and/or TSO/DSO) and that allow to release automatically the required capacity of the Plant. The Consultant shall propose the optimal location of such equipment and the communication protocol with the Plant DCS.

Based on this analysis's results, the Recommended Configuration(s) could be revised accordingly; the Consultant shall revise, in agreement with the Steering Committee, the Plant' capacities approved and provide for the Plant the relating capacity and annual energy generation.

Deliverables

D 2.4.1: Grid impact study report including the used data, calculations, simulations, results and corresponding recommendations;

D 2.4.2 : updated PSS/E file including the Plant.

D 2.4.3: Presentation in Power Point version and synthesis in word version of the final version of the Grid Impact Study Report

5. Economic and Financial Analysis

Taking into account the analyses performed by the Consultant in the previous sections, the Consultant shall provide an economic and financial analysis evaluating the LCOE and the LCOW for the water savings for the Recommended Configuration of the FPV.

The Consultant shall estimate the energy production projection (based on the P50, P75 and P90) for irradiation estimation), detail capital cost estimate including possible needed grid upgrades and O&M expenses estimates including possible transmission fees providing all assumptions.

The Consultant shall perform sensitivity analyses on the CAPEX, OPEX and energy production projections.

The Consultant shall describe the existing energy tariffication system for pumping and irrigation from Makhazine dam, as well as the future tariffication options considering potential cost savings and any subsidy schemes. Based on this, the Consultant shall quantify and compare the benefits of the installation of FPV with the current status.

***Deliverables*:**

D 2.5.1: **Economical & Financial analysis report** including among others:

- Detailed list of assumptions and respective outputs (CAPEX, OPEX, LCOE, LCOW…)
- Detailed breakdown of CAPEX and OPEX
- Sensitivity analysis.

D 2.5.2: Presentation in Power Point version and synthesis in word version on the Final version of the Report.

6. Technical Risk Analysis

The Consultant shall conduct a technical risk analysis, outlining at least the following points:

- **Specific risks to the technology:** The Consultant shall provide a detailed analysis of all risks associated to the technology of the main components (PV modules, trackers if any, inverters, protections, floating structure, cables,…), in all phases of the FPV project (engineering, procurement, development, construction, operation and maintenance and dismantling).

- **Specific risks to the Project:** The Consultant shall provide a detailed analysis of the specific risks relating to the Project including:
    - **Site risks:** natural risks of the Site, such as seismic loads, drought, rainfall, wind, gust and snow loads, and flood risk.
    - **Components risks:** The technical risk study shall consider (i) inputs from major components manufacturers such as module manufacturers, inverter manufacturers, structures and tracking system manufacturers, etc, and (ii) the whole lifetime of the Project (engineering, development, construction, operation and maintenance and dismantling).
    - **Grid interconnection risks:** the Consultant shall analyze the impact of the limited capacity of the grid on the installed capacity, the produced energy and the profitability of the Project.
    - **Environmental risks:** The Consultant shall identify and analyze the impact that the Plant may generate on the environment addressing at minimum the site usage, water use, noise, visibility, emissions, endangered species and fauna and flora.

The Consultant shall provide a risk matrix with an appropriate rating to indicate the criticality index of each risk. The Consultant shall also recommend, for each identified risk, the relevant mitigations specifying the relating period (engineering, development, construction, operation, maintenance…) as well as the impact that such mitigations may have on the final energy production, LCOE and water savings.

Deliverables :

D 2.6.1: Recommended Project Configuration assessment Report including:

- Technical Risk Analysis and recommendations of mitigations for the Recommended Project Configuration.
- Technical Risk Matrix.

D 2.6.2: Presentation in Power Point version and synthesis in word version of the Final version of the Report.

7. Feasibility Study Report

The Consultant shall prepare a feasibility study report that includes all analyses and findings performed under all the activities above and addresses all comments of the Steering Committee. The Consultant shall provide the draft Final Report to the GWP-Med for review, discussion and approval.

The Final Report shall be a substantive and comprehensive report of work performed to carry out all activities of Section 2 (excluding activity 3 : Grid Impact Study) together with an executive summary. Each section of Section 2 (excluding activity 3 : Grid Impact Study) form a separate chapter of the Final Report.

Deliverables :

D 2.7: Feasibility Study Report

Section 3: Precision agriculture with focus on innovative technologies

The Consultant shall undertake the following activities :

1. Conduct a multicriteria analysis to select the crops among those cultivated in the Loukkos Large Perimeter, that will be considered for the selection of the areas/fields that the Precision Agriculture activities will focus on. The analysis should use the following key factors (the list is not exhaustive; the consultants should review and propose a revised list to be agreed with GWP-Med) such as:

- Water use efficiency
- Dependency on chemical inputs
- Energy use efficiency
- Contribution to food security and socio-economic development
- Adaptability to innovative agricultural technologies
- Investment capacity for adopting new technologies

Based on the multi-criteria analysis and in collaboration with the relevant stakeholders **select at least two agricultural areas,** for the Precision Agriculture activities to focus upon.

Deliverables :

D3.1 Multicriteria analysis report including description of at least two agricultural areas, where the precision agriculture activities will focus on,

2. Develop a techno-economic Analysis in each agricultural area of focus

3.2.1 Conduct a baseline assessment of current agricultural practices

Using available data (at the selected agricultural areas of focus) or data that will result through extrapolation (using benchmarks), e.g. from Regional, National, Global practices, or scientific recommendations (e.g., optimal water/fertilizer rates for a crop, or other standards and also government regulations (water/chemical usage limits) etc.):

- Identify and map current agricultural practices;
- Conduct an assessment of these agricultural practices in terms of water usage efficiency, energy usage efficiency, pesticides and herbicides inputs and their impact on the environment (information produced through the groundwater vulnerability analysis will be used here), crop yields, and soil health. The consultant should take into consideration the following:
  - Water usage efficiency;
    - Irrigation methods, e.g.: flood, drip, sprinkler, or furrow irrigation systems and their water-use efficiency etc.
    - Water source and availability, e.g.: groundwater, surface water, or rainwater harvesting usage etc.
    - Scheduling and frequency, e.g. evaluating whether irrigation timing aligns with crop needs or leads to overuse etc.
    - Soil moisture retention: e.g. .if there are practices that affect water conservation etc.
    - Runoff and drainage, e.g. identifying water wastage due to poor field design or excessive application etc.
  - Energy usage efficiency; the consultant should take into consideration the following:
    - Irrigation, e.g. electric pumps and automated systems etc.
    - Greenhouse operations: heating, cooling, and lighting energy use in controlled environments etc.

- Renewable Energy integration, e.g. if solar or biogas systems are used to offset fossil fuel dependence etc.

- Chemical inputs (fertilizers, pesticides, herbicides); the consultant should take into consideration the following:
  - Types and quantities applied etc.
  - Application methods: manual, aerial, or precision-based and their efficiency etc.
  - Soil health impact, e.g. nutrient imbalances, acidification, or salinity due to excessive fertilizer use etc.
  - Pest and weed management, e.g. integrated pest management (IPM) adoption vs. reliance on chemical controls etc.
  - Residue and runoff, e.g. pollution risks in nearby water bodies and groundwater due to leaching or erosion etc.
- Other issues:
  - Current status of Precision Agriculture Adoption including use of GPS, remote sensing, or AI-driven tools to optimize inputs.
  - Current status of farmers training and awareness in sustainable practices, new technologies etc.
  - Policy and subsidy influence on input usage patterns etc.

3.2.2 Conduct a baseline assessment of precision agricultural practices

Using the information gathered up to this point, identify possible precision agriculture practices for the agricultural areas of focus.

To do so, list existing applicable precision agriculture practices and technologies, and assess these for their water usage efficiency, energy usage efficiency, pesticides and herbicides inputs and their impact on the environment, crop yields, and soil health. Use the characteristics and factors listed under 3.1. to conduct the assessment.

3.2.3 Conduct a techno-economic Analysis in each agricultural area of focus

Develop a techno-economic analysis for each agricultural practice and precision agriculture practice. This involves assessing the economic and technical aspects of these practices, including the economic and environmental benefits.

The consultants should ensure that the assessments of current agricultural practices and the precision agricultural practices (see 3.1 and 3.2 above) are done in such a way that the two can be compared in terms of benefits, effects and costs.

Deliverables :
D3.2: Techno-economic analysis in each agricultural area of focus

3 Develop an Action plan and cost estimation for the implementation of the activities and their upscaling.

Using the results and deliverables developed and in consultation with farmers in the selected agricultural areas of focus, develop a detailed action plan for:

- Implementing at the field innovative precision agriculture technologies and practices, with the aim to test these in terms of farming cost reduction and environmental benefits.
- Upscaling by developing economic tools in the form of soft loans offered by commercial banks in cooperation with developmental banks and/or the State to enable the adoption of precision

agriculture technologies and practices by farmers (should these lead to farming cost reduction and reduction of environmental impacts).
- Replicating these activities in other areas of Morocco.

The action plan should detail steps and activities for (at least) the following:

- Field Demonstrations
    - Implementation and testing of precision agriculture practices on selected fields to measure farming cost reduction, productivity, and environmental impact/benefits. Benchmarks from Regional, National, Global practices, or scientific recommendations (e.g., optimal water/fertilizer rates for a crop, or other standards and also government regulations (water/chemical usage limits), including Return On Investment (ROI)) may be used.
    - Stakeholders mapping and consultation with the aim to increase awareness and understanding, and create a sense of ownership. Identification of farmers' training needs; training of farmers.
    - Monitor and evaluate results by developing indicators and benchmarks to evaluate the effectiveness of precision agriculture practices in terms of water, energy, and chemical usage, as well as economic and environmental benefits.
    - Collaborating with banks and financial institutions for the development of soft loan schemes or other financial instruments tailored to support farmers in adopting precision agriculture technologies.
    - Etc.
- Upscaling; using data and insights from pilot projects to expand these practices to other regions, ensuring scalability and replicability of successful models
    - Target Areas: Selection of specific agricultural regions or zones for the implementation of precision agriculture technologies.
    - Technology Selection Criteria: Definition of clear criteria for choosing suitable precision agriculture technologies based on factors such as water and energy efficiency, ease of adoption, and cost-effectiveness.
    - Implementation Framework: Outlining of the minimum and maximum surface area requirements, target crops, and other prerequisites for activities to succeed.
    - Cost: Estimate the cost for upscaling precision agriculture technologies and practices.
    - etc.

Deliverables :

D3.3 : Action plan and cost estimation for the implementation of the precision agriculture and their upscaling

Section 4: GCF Concept Note

Based on the assessments and studies undertaken under the activities of Sections 2 and 3, the Consultants will design and prepare a GCF Concept Note for a WEFE nexus project that encompasses the construction of the FPV plant and the implementation /promotion of precision agriculture activities. This includes the following activities :

1. Development of the project design

The Consultant shall define the scope of the WEFE Nexus project and outline its components. The Nexus Project will have two interlinked/aligned parts:

- the construction of the FPV plant to produce energy for irrigation water transfer to Asjen perimeter,
- the field testing and promoting/up-scaling of precision agriculture technologies and practices to reduce farming costs, water and energy consumption, and environmental impacts.

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The project design must comply with the GCF requirements. The Consultant will identify the project's primary beneficiaries, the suitable project promoter and propose an appropriate governance structure. Consultations will be conducted with the beneficiary partners to validate the project components.

Deliverables :
D4.1 : Detailed Project Note describing the project components and activities and the governance structure.

2. Preparation of the Concept Note

The Consultant shall prepare a GCF Concept Note for the defined project in alignment with the GCF requirements and accompanied by their technical pre-feasibility studies, early-stage environmental and social risk assessments and early-stage gender & social inclusion assessments. The consultant will :

- Analyse all data and findings of studies undertaken in sections 1, 2 and 3. The Consultant will collect any additional data and information necessary for the development of the project concept note, including climate rationale and theory of change, and accompanying high-level pre-feasibility studies and early-stage screening of environmental and social risks. For unavailable data in the country, the consultant shall use adequate approaches to overcome this challenge and bridge the data gap,
- Collect gender-related information that makes it possible to conduct the preliminary gender analyses and to integrate gender into the theory of change and activities of the project,
- Identify and suggest potential project executing partners,
- Describe institutional set-up and implementation arrangements for the project implementation and the responsibilities of each of the actors, including the project promoter, the accredited entity, the executing entities, and the primary beneficiaries,
- Prepare detailed budget for the activities including the co-financing resources and the financial structure of the project,
- Describe risk mitigations measures,
- Develop draft concept note for the project and its revised and final version having integrated inputs of different stakeholders during the consultation process,
- Develop the annexes to the Concept Note drawing on the technical assessments and feasibility study prepared under Section 2 and 3 of this assignment, as well as any additional assessments. These annexes include the technical studies, early-stage environmental and social risk screening reports, and preliminary gender analyses.

Deliverables :
D 4.2 Project Concept Note in GCF format with its annexes that include high-level pre-feasibility studies, early-stage environmental and social risk screening, and early-stage gender & social inclusion analyses.

3. Identification and engagement of the Accredited Entity (AE)

The consultant will undertake a mapping of the potential suitable Accredited Entities that can support the submission of the Concept Note and later the funding proposal, explain the motivations for selecting these AE, and prioritise the most suitable AE that should be contacted first. In collaboration with GWP-Med, the project promoter and the NDA, the consultant will support exchanges with potential AE to secure its commitment to serve as AE for the project. For this step, among others, the consultant is expected to:

- Exchange with GWP-Med, RC TTA, NDA, and other stakeholders to identify potential accredited entities to target,
- Prioritise the potential AE that should be contacted first using a list of criteria to be prepared by the Consultant and to be approved by GWP-Med,
- Support the NDAs, and GWP-Med for exchanges with the potential AE to obtain its commitment, including through the preparation of notes/documents
- Explore with the potential AE the possible sources of financing for the full proposal development,
- Explore the possible sources of co-financing for the project,
- Develop a coherent institutional set-up for the project and the financial structure of the project. The Consultant will draw on the findings of the institutional and governance assessment developed under section 2.

Deliverables:
D 4.3 Report on the identification of the AE explaining the motivations for the choice of this entity,

4. Validation workshop

The Consultant shall ensure inclusive consultation with the relevant stakeholders throughout the implementation of the assignment activities. The development of the CN will be conducted with the same approach and build on the engagement of the stakeholders in Section 2 and 3. The consultation process will combine bilateral interviews, meetings, field visits as needed, and a validation workshop. The validation workshop should lead to the validation of the concept note including the detailed project activities, the budget allocated, the financing structure and co financing sources, the institutional set-up and implementation arrangements, the responsibilities of the actors involved in the implementation.

In its approach the consultant should consider the country's non-objection procedure to facilitate the rapid obtaining of the no-objection letter for the submission of concept note to the GCF.

The consultant will undertake the consultation process under the guidance and in close collaboration with GWP-Med and the CR TTA and will submit for validation by GWP-Med the list of stakeholders to meet or invite to the workshops, the concept notes and agenda of the workshop, and any material that will be used during the workshop. The consultant will be responsible for all logistical arrangements related to the organization of the one-day validation workshop, which will involve approximately 50 stakeholders. These responsibilities include, but are not limited to: renting of conference room, organising two coffee breaks and 1 lunch, interpretation French-English, audio-visual and hybrid participation equipment etc.

Deliverables :
D 4.4 : Report of the validation workshop

Section 4: Synthesis and lessons learnt from the assignment implementation

The Consultant will prepare an Executive Summary to concisely outline the assignment's objectives, key components, and outcomes, providing a high-level overview of the project's scope, approach, and impact. It must capture the project's complexity while remaining clear and compelling for stakeholders. The summary

should emphasize methodology, deliverables, and strategic relevance for the area, including lessons learnt.

D5.1: Executive Summary of the Assignment

5. Deliverables and milestones

The Consultant(s) are expected to provide the following deliverables, which are directly related to the tasks outlined in detail under chapter 3, based on the below timeline (expressed in weeks after the contract is signed). The schedule for submission may be adjusted as necessary during the contract preparation period under the condition that the total duration of the project will not be exceeded. All deliverables should be submitted in **French**, unless otherwise specified.

Deliverable		**Deadline expressed in weeks after contract signature***
D1.1 (draft)	Inception Report	2 weeks
D1.1 (final)	Inception Report	3 weeks
D1.2	Organisation of the kick-off workshop in Tangiers, including logistics and content, Presentation in Power Point version and workshop's report	3 weeks
D2.2.1 (draft)	Draft Site Assessment	3 weeks
D2.2.1 (final)	Final Site Assessment Report	5 weeks
D2.2.2	Power Point Presentation and synthesis in word of the final version of the Site Assessment report.	5 weeks
D2.1 (draft)	Institutional Assessment Report	6 weeks
D2.3.1 (draft)	• Draft Conceptual Design Report + • PVSyst executable files for all studied scenarios as well as the Recommended Configuration + • Hourly production of the Recommended Configuration + • Sites layouts and DWG drawings (including the proposed grid interconnection point scheme)	6 weeks
D3.1 (draft)	Draft multicriteria analysis report including description of at least two agricultural areas, where the precision agriculture activities will focus on.	6 weeks
D2.4.1 (draft)	Draft Grid impact study report	7 weeks
D2.1 (final)	Institutional Assessment Report	8 weeks
D3.1 (final)	Final Draft multi-criteria analysis report	8 weeks
D2.3.1 (final)	• Final Conceptual Design Report *+* • PVSyst executable files for all studied scenarios as well as the Recommended Configuration + • Hourly production of the Recommended Configuration + • Sites layouts and DWG drawings (including the proposed grid interconnection point scheme)	9 weeks
D2.3.2	Power Point Presentation and synthesis in word of the Final version of the Report.	10 weeks
D3.2 (draft)	Draft techno-economic Analysis in each agricultural area of focus	10 weeks
D2.5.1(draft)	Draft Economical & Financial analysis report	12 Weeks
D3.2 (final)	Final techno-economic analysis in each agricultural area of focus of	12 weeks

	the recommended activities	
D2.5.1 (final)	Final Economical & Financial analysis report	14 weeks
D2.5.2	Power Point Presentation and synthesis in word version on the Final version of the Economical & Financial analysis Report.	14 weeks
D3.3 (draft)	Draft Action plan and cost estimation for the detailed implementation of the recommended demonstration activities and their upscaling	14 weeks
D.4.1 (draft)	Draft Project Note describing the project components and activities and the governance structure.	14 weeks
D2.6.1 (draft)	Draft Recommended Project Configuration assessment Report	16 weeks
D3.3 (final)	Final Action plan and cost estimation for the detailed implementation of the activities and their upscaling	16 weeks
D4.1 (final)	Final Project Note	16 weeks
D2.6.1 (final)	Final Recommended Project Configuration assessment Report	18 weeks
D.2.6.2	Power Point Presentation and synthesis in word version on the Final version of the assessment Report.	18 weeks
D4.2 (draft)	Draft Project Concept Note and related annexes	18 weeks
D4.3 (draft)	Draft Report on the identification of the AE	18 weeks
D2.7 (draft)	Draft Feasibility Report	20 weeks
D4.2 (final)	Final Project Concept Note and related annexes **(both in French and English)**	20 weeks
D4.3 (final)	Final Report on the identification of the AE	20 weeks
D2.7 (final)	Final Feasibility Report	22 weeks
D4.4	Organisation of the validation workshop in Tangiers, including logistics and content, and workshop's report	22 weeks
D2.4.1 (final) and D2.42	• Final Grid impact study report • Updated PSS/E file including the Plant.	24 weeks
D2.4.3	Power Point Presentation and synthesis in word of the final version of the Grid impact study Report	24 weeks
D5.1	Executive Summary **(both in French and English)**	

* ***The specific deadlines, including the day and month, will be detailed in the contract with the consultant, based on the date of the contract's signature.***

6. Reporting

The consultant will work under the direct supervision of / and communicate directly with the Medprogramme Officer within GWP-Med.

All consultations with the local stakeholders should be coordinated in advance with GWP-Med and the RC TTA.

The deliverables of Section 2 of the assignment related to the FPV plan will be reviewed by the Moroccan Agency for Sustainable Energy (MASEN).

All deliverables will be submitted for validation by the study Steering Committee chaired by the RC TTA and composed of representatives of key stakeholders.

Services will be rendered and will be considered completed upon approval of the deliverables by GWP-Med.

7. Payment modalities

Deliverables	Delivery date (weeks after contract signature)	Payment (% of total)
D1.1 (final), D1.2, D2.2.1 (final), D2.2.2, D2.1 (draft), D2.3.1 (draft), D3.1 (draft),	6 weeks	20%
D2.4.1 (draft), D2.1 (final), D3.1 (final), D3.2 (final), D2.3.1 (final), D2.3.2, D2.5.1 (draft)	12 weeks	30%
D2.5.1 (final), D2.5.2, D3.3 (final), D4.1 (final), D2.6.1 (final), D2.6.2, D4.2 (draft), D4.3 (draft)	18 weeks	20%
D2.7 (final), D4.2 (final), D4.3 (final), D4.4, D2.4.1 (final), D2.4.3	24 weeks	30%

8. Contract price and duration

The maximum fee for this assignment is **365,000 USD**. This amount includes all other costs, income taxes and any other amount payable or cost that may be required for the completion of the work/service, including VAT.
The amount includes also all costs related to the national and international travels for field visits, consultation meetings, as well as the kick-off workshop costs up to 30 participants and the validation workshop costs up to 50 participants. The workshop costs shall include costs for English/French interpretation services and online participation facilities.
The overall duration of the contract will be for a maximum of **6 months** after the contract signature. Payments will be made upon acceptance and verification of the related deliverables, as laid out in section 4 "Reporting, deliverables, and Milestones"

9. Disqualification criteria ON/OFF

For details on the ON/OFF disqualification please refer to the Call for Offers

10. Selection Criteria

Pass / Fail criteria
Successful participants (Natural or Legal person or entity) must:

1. Be enrolled in one of the official professional or trade register kept in their country of registration
2. Have average annual turnover for the last three financial years, 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.
3. Have Minimum duration of operation of five (5) years. Proof to be provided by the related chamber (date of registration).

Failure to comply with the above pass / fail and required criteria and provide relevant proof with the application is considered ground for exclusion.

11. Qualifications and experience

Participants in the call are required to have solid experience in developing and managing complex projects in the field related to the tasks described in the ToR.

This needs to be demonstrated in the Technical Offer to be submitted as part of the application.

A template for the Technical Offer form is available in the Call for Offers.

The Technical Offer Form consists of the following sections:

- Section 1: Expertise and work experience

- Section 2: Approach and Methodology

Regarding Section 1: Expertise and work experience:

Participants are required to have:

1. A record of preparing the feasibility study of at least two (2) grid connected PV plants with a minimum aggregate installed capacity of 100 MW (comprising PV plants of more than 10 MW) including at least one 50 MW PV plant (**Required - Evaluated**).
2. A record of preparing the feasibility study of at least one (1) grid connected FPV plant with a minimum installed capacity of 8 MW (**Required - Evaluated**).
3. A record of performing a Grid Impact Study for PV plants including at least a plant of 50 MW (**Required - Evaluated**).
4. A record of at least one project on agriculture development (Required - Evaluated).
5. A record of at least one project for funding proposals preparation to climate funds or other donors (**Required - Evaluated**).

Failure to provide the minimum "Required" qualifications is considered ground for disqualification.

The participant must demonstrate prior experience in the following roles: **Please note:** Only references pertaining to plants with a capacity **of more than 10 MW** (including ground-mounted PV and floating PV) will be taken into account.

6. Owner's engineer in the PV sector for at least one project (**Desired – Evaluated**).
7. Technical Advisor to Governments for at least one solar PV project (**Desired – Evaluated**).
8. Technical advisor for the selection of a PV developer through an IPP scheme for at least one project (**Desired – Evaluated**).
9. Lender's technical advisor for at least one solar PV project (**Desired – Evaluated**).
10. Independent Engineer for at least one project solar PV (**Desired – Evaluated**).

The scope of work requires an interdisciplinary team of skilled experts with previous experience in activities similar to those that this assignment entails. The required qualifications for all experts to be engaged in this assignment are presented in Table 1 below.

The inclusion of experts so as the team responds to every area of expertise defined in the table below is mandatory.

If the qualifications of an expert cover the requirements of more than one area of expertise, that expert can be also proposed for these other areas.

Qualifications additional to the minimum requested per category will receive additional score under the evaluation process as described in the section Evaluation Process and Awarding Criterion.

In addition, the Applicant may propose – as they deem appropriate - additional experts covering other specific areas of expertise

Failure to provide the minimum "Required" qualifications is considered ground for disqualification.

Important Note: The following information is crucial for evaluating the expertise of each candidate, using the corresponding weights detailed in Table 2. It is essential to complete the column located on the right side of Table 1 (Alignment with the criteria) and confirm the provision of the required information (YES/NO) indicating also the section in the Technical Offer where the specific information is located (Page and section in the page(s)). Failure to complete this column will lead to disqualification of the Technical Offer. Please

note that all the "Required" criteria are mandatory, while desired criteria are optional but can enhance the overall score of your Offer.

Table 1 – Required qualifications for the Team of Experts

Expert #	Area of expertise	Minimum Qualifications	Alignment with the criteria: Select Yes or No AND indicate the Page in your offer, and section in the page(s), where the respective information is located.
1	**Team Leader**	A Master's Degree in Renewable Energy, Environmental or Agricultural Engineering, Environmental Science or management, Water resources management, Agro-socio economics or a directly related field **(ON/OFF)**	☐ **YES** ☐ **NO**
		Excellent oral and written communication skills in French or English **(ON/OFF)**	☐ **YES** ☐ **NO**
		A proven track of 10 years of professional experience in the field of renewable energy, environmental, agricultural and natural resources management, environmental policies, ecosystem services or other relevant topic (**Required/Evaluated**)	**Page(s):** **Section(s):**
		A proven track record of two (2) projects relevant to renewable energy, environmental and natural resources management and/or agricultural, socio-economy and environmental policies, or other relevant topic **(Desired/Evaluated)**	**Page(s):** **Section(s):**
		Strong leadership skills with the ability to lead a team of experts and effectively manage project activities: A proven track record as team leader for two (2) projects of similar complexity over the last 10 years **(Required/Evaluated)**	**Page(s):** **Section(s):**
		A proven track record of two (2) successful assignments or projects in Morocco that are directly relevant to renewable energy, environmental, natural resources and/or ecosystems management **(Desired/Evaluated)**	**Page(s):** **Section(s):**

2	**Senior Solar Energy Expert / Utility-Scale PV & Floating Solar (FPV) Project Manager**	A Master's Degree in Renewable Energy Engineering, Electrical Engineering (Power Systems), or equivalent technical field **(ON/OFF).**	☐ **YES** ☐ **NO**
		Excellent oral and written communication skills in French or English **(ON/OFF)**.	☐ **YES** ☐ **NO**
		Strong leadership skills with the ability to lead a team of experts and effectively manage project activities. A proven track of at least 10 years of professional experience in leading the development, execution, and commissioning of large-scale PV plants (more than 10 MW). **(Required/Evaluated)**	**Page(s):** **Section(s):**
		A proven track record of developing at least one (1) Floating PV plant of more than 5 MW **(Required/Evaluated)**	**Page(s):** **Section(s):**
		A proven track record of one (1) successful assignment or project in Morocco related to renewable energy over the last 10 years **(Desired/Evaluated)**	**Page(s):** **Section(s):**
3	**Water management Expert**	A minimum of a Master's degree (MSc or equivalent) in hydraulics, hydrology, hydrogeology, irrigation or water engineering or a directly related field **(Required ON/OFF)**	☐ **YES** ☐ **NO**
		Excellent oral and written communication skills in French **(ON/OFF).**	☐ **YES** ☐ **NO**
		Minimum 7 years of professional experience in the field of hydraulic or water resources engineering **(Required/Evaluated)**	**Page(s):** **Section(s):**
		A proven track record of developing a minimum of 2 feasibility studies for hydraulic infrastructure (dams, irrigation networks, etc.), precision agriculture or other related topic **(Desired/Evaluated)**	**Page(s):** **Section(s):**
		A proven track record of one (1) feasibility study or project in Morocco related to hydraulic infrastructure (dams, irrigation networks, etc.), precision agriculture or other related topic **(Desired/Evaluated)**	**Page(s):** **Section(s):**
4	**Electrical Systems Engineer**	A Master's degree in Electrical engineering, power generation,	☐ **YES** ☐ **NO**

		distribution systems, or a directly related field **(ON/OFF)**.	
		Excellent oral and written communication skills in French **(ON/OFF).**	☐ **YES** ☐ **NO**
		A proven track record of 7 years of professional experience in designing electrical networks for renewable energy (PV or wind power plants) (**Required/Evaluated**).	**Page(s):** **Section(s):**
		Demonstrated experience (2 projects) in managing interfaces with grid operators and knowledge of electrical standards (IEC, etc.) and protection devices for projects of at least 10 MW. (**Required/Evaluated**).	**Page(s):** **Section(s):**
		A proven track record of one (1) assignment or project in Morocco related to renewable energy **(Desired/Evaluated)**	**Page(s):** **Section(s):**
5	**Civil and construction expert;**	Master's in Civil Engineering, Structural Engineering, or Construction Management, Geotechnical Engineering, Hydraulic Engineering, Marine Engineering or a related field **(ON/OFF)**	☐ **YES** ☐ **NO**
		Excellent oral and written communication skills in French **(ON/OFF).**	☐ **YES** ☐ **NO**
		At least 5 years of experience in in designing foundations and infrastructure suitable for aquatic environments (**Required/Evaluated**)	**Page(s):** **Section(s):**
		A proven track record of one (1) project related to anchoring systems, floats, and support structures. **(Required/Evaluated**).	**Page(s):** **Section(s):**
6	**Institutional Expert**	Master's degree in Law, public policies, Environmental studies, international development, engineering or a related field. **(ON/OFF).**	☐ **YES** ☐ **NO**
		Excellent oral and written communication skills in French **(ON/OFF).**	☐ **YES** ☐ **NO**
		A proven track record of 7 years **of professional experience** in institutional analysis, governance	**Page(s):** **Section(s):**

		frameworks, and policy advisory. (**Required/Evaluated**)	
		A Proven track record of at least two (2) projects related to designing or reforming institutional arrangements in the water or energy or environment sectors **(Required/Evaluated**)	**Page(s):** **Section(s):**
7	**Environmental Expert**	A minimum of a Master's degree (MSc or equivalent) in environmental engineering/management, or related field **(ON/OFF)**	☐ **YES** ☐ **NO**
		Excellent oral and written communication skills in French **(ON/OFF).**	☐ **YES** ☐ **NO**
		Minimum 7 years of professional experience in the field of environmental and social safeguards development or environmental impact assessments **(Required/Evaluated)**	**Page(s):** **Section(s):**
		A proven track record of a minimum of 2 environment and social safeguards studies developed for renewable energy projects of at least 10 MW **(Desired/Evaluated)**	**Page(s):** **Section(s):**
		A proven track record of 2 environment and social safeguards studies developed for projects submitted to GCF **(Desired/Evaluated)**	**Page(s):** **Section(s):**
8	**Agriculture Expert**	A Master's degree in the field of Agriculture engineering, Irrigation, Soil Science or a related field. **(ON/OFF).**	☐ **YES** ☐ **NO**
		Excellent oral and written communication skills in French* **(ON/OFF).**	☐ **YES** ☐ **NO**
		A proven track record of 7 years of professional experience in the field of Agriculture, sustainable agricultural/irrigation practices, agriculture-environment Soil Management or other relevant topic **(Required/Evaluated).**	**Page(s):** **Section(s):**
		A proven track record of two (2) assignment/project relevant to precision agriculture or modern irrigation technologies, such as automated irrigation systems, sensor-based irrigation (e.g., soil moisture sensors, weather	**Page(s):** **Section(s):**

		stations), and smart irrigation technologies **(Desired/Evaluated).**	
9	**Climate Change/Project Preparation Expert**	A minimum of a Master's degree (MSc or equivalent) in environment, climate change, development, or related field **(ON/OFF)**	☐ **YES** ☐ **NO**
		Excellent oral and written communication skills in French **(ON/OFF)**	☐ **YES** ☐ **NO**
		At least 10 years of experience in the field of climate change or environmental resources management or the design, implementation, monitoring and evaluation of development or climate change projects **(Required, Evaluated)**,	**Page(s):** **Section(s):**
		A proven track record of developing a minimum of 1 GCF Concept Notes **(Desired, Evaluated)**	**Page(s):** **Section(s):**
		A proven track record of developing a minimum of 1 GCF Concept Notes that has been approved by GCF **(Desired, Evaluated)**	**Page(s):** **Section(s):**

* The Consultant is required to ensure communication in Arabic as needed, particularly with the farmers in the field, e.g with the help of an interpreter in case the expert does not speak Arabic.

13. Evaluation Process and Awarding Criterion

The Award criterion is the **most economically advantageous tender considering the best price / quality ratio.** Offers that meet the exclusion grounds and selection criteria will undergo further evaluation, focusing on the requirements outlined in the "Qualification and Experience" section, as follows:

Table 2 – Weight of criteria – required and desired

(1) Criterion	**(2) Weighting (w)**	**(3) Points of criterion (c)**	**(4) Score= (2) x (3)**
Section 1: Expertise and work experience	**80%**		
Applicants must present experience on the following (Required/Evaluated)	**6%**		
• A record of preparing the feasibility study of at least two (2) grid connected PV plants with a minimum aggregate installed capacity of 100 MW (comprising PV plants of more than 10 MW) including at least one 50 MW PV plant.	**1%**		
• A record of preparing the feasibility study of at least one (1) grid connected FPV plant with a minimum installed capacity of 8 MW.	**2%**		
• A record of performing a Grid Impact Study for PV plants including at least a plant of 50 MW.	**1%**		

• A record of at least one project on agriculture development.	**1%**		
• A record of at least one project for funding proposals preparation to climate funds or other donors	**1%**		
Applicants presenting the following additional credentials might get additional score (Desired/Evaluated). Please note: Only references pertaining to plants with a capacity of more than 10 MW (including ground-mounted PV and floating PV) will be taken into account.	**6%**		
• Owner's engineer in the PV sector for at least one project.	**2%**		
• Technical Advisor to Governments for at least one solar PV project.	**1%**		
• Technical advisor for the selection of a PV developer through an IPP scheme for at least one project.	**1%**		
• Lender's technical advisor for at least one solar PV project.	**1%**		
• Independent Engineer for at least one project solar PV.	**1%**		
Experts			
Expert #1: Team Leader	**9%**		
A Master's Degree in Renewable Energy, Environmental or Agricultural Engineering, Environmental Science or management, Water resources management, Agro-socio economics or a directly related field **(ON/OFF)**	**ON/OFF**		
Excellent oral and written communication skills in French or English **(ON/OFF)**	**ON/OFF**		
A proven track of 10 years of professional experience in the field of renewable energy, environmental, agricultural and natural resources management, environmental policies, ecosystem services or other relevant topic (**Required/Evaluated**)	**2%**		
A proven track record of two (2) projects relevant to renewable energy, environmental and natural resources management and/or agricultural, socio-economy and environmental policies, or other relevant topic **(Desired/Evaluated)**	**2%**		
Strong leadership skills with the ability to lead a team of experts and effectively manage project activities: A proven track record as team leader for two (2) projects of similar complexity over the last 10 years **(Required/Evaluated)**	**3%**		
A proven track record of two (2) successful assignments or projects in Morocco that are directly relevant to renewable energy, environmental, natural resources and/or ecosystems management **(Desired/Evaluated)**	**2%**		
Expert #2: Senior Solar Energy Expert / Utility-Scale PV & Floating Solar (FPV) Project Manager	**8%**		
A Master's Degree in Renewable Energy Engineering, Electrical Engineering (Power Systems), or equivalent technical field **(ON/OFF).**	**ON/OFF**		
Excellent oral and written communication skills in French or English **(ON/OFF)**.	**ON/OFF**		
Strong leadership skills with the ability to lead a team of experts and effectively manage project activities. A proven track of at least 10 years of professional experience in leading the development, execution, and commissioning of large-scale PV plants (more than 10 MW).	**3%**		

(Required/Evaluated)			
A proven track record of developing at least one (1) Floating PV plant of more than 5 MW **(Required/Evaluated)**	**4%**		
A proven track record of one (1) successful assignment or project in Morocco related to renewable energy over the last 10 years **(Desired/Evaluated)**	**1%**		
Expert #3: Water Management Expert	**7%**		
A minimum of a Master's degree (MSc or equivalent) in hydraulics, hydrology, hydrogeology, irrigation or water engineering or a directly related field **(Required ON/OFF)**	**ON/OFF**		
Excellent oral and written communication skills in French **(ON/OFF).**	**ON/OFF**		
Minimum 7 years of professional experience in the field of hydraulic or water resources engineering **(Required/Evaluated)**	**2%**		
A proven track record of developing a minimum of 2 feasibility studies for hydraulic infrastructure (dams, irrigation networks, etc.), precision agriculture or other related topic **(Desired/Evaluated)**	**3%**		
A proven track record of one (1) feasibility study or project in Morocco related to hydraulic infrastructure (dams, irrigation networks, etc.), precision agriculture or other related topic **(Desired/Evaluated)**	**2%**		
Expert #4: Electrical Systems Engineer	**8%**		
A Master's degree in Electrical engineering, power generation, distribution systems, or a directly related field.	**ON/OFF**		
Excellent oral and written communication skills in French **(ON/OFF).**	**ON/OFF**		
A proven track record of 7 years of professional experience in designing electrical networks for renewable energy (PV or wind power plants) (**Required/Evaluated**).	**2%**		
Demonstrated experience (2 projects) in managing interfaces with grid operators and knowledge of electrical standards (IEC, etc.) and protection devices for projects of at least 10 MW. (**Required/Evaluated**).	**4%**		
A proven track record of one (1) assignment or project in Morocco related to renewable energy **(Desired/Evaluated)**	**2%**		
Expert #5: Civil and Construction Expert	**7%**		
Master's in Civil Engineering, Structural Engineering, or Construction Management, Geotechnical Engineering, Hydraulic Engineering, Marine Engineering or a related field **(ON/OFF)**	**ON/OFF**		
Excellent oral and written communication skills in French **(ON/OFF).**	**ON/OFF**		
At least 5 years of experience in in designing foundations and infrastructure suitable for aquatic environments (**Required/Evaluated**)	**3%**		
A proven track record of one (1) project related to anchoring systems, floats, and support structures. **(Required/Evaluated**).	**4%**		
Expert #6: Institutional Expert	**7%**		
Master's degree in , Law, public policies, Environmental studies,	**ON/OFF**		

international development, engineering or a related field.			
Excellent oral and written communication skills in French **(ON/OFF).**	**ON/OFF**		
A proven track record of 7 years **of professional experience** in institutional analysis, governance frameworks, and policy advisory. (**Required/Evaluated**)	**3%**		
A Proven track record of at least two (2) projects related to designing or reforming institutional arrangements in the water or energy or environment sectors (**Required/Evaluated**)	**4%**		
Expert #7: Environmental Expert	**7%**		
A minimum of a Master's degree (MSc or equivalent) in environmental engineering/management, or related field **(Required ON/OFF)**	**ON/OFF**		
Excellent oral and written communication skills in French **(ON/OFF).**	**ON/OFF**		
Minimum 7 years of professional experience in the field of environmental and social safeguards development or environmental impact assessments **(Required/Evaluated)**	**1%**		
A proven track record of a minimum of 2 environment and social safeguards studies developed for renewable energy projects of at least 10 MW **(Desired/Evaluated)**	**3%**		
A proven track record of 2 environment and social safeguards studies developed for projects submitted to GCF **(Desired/Evaluated)**	**3%**		
Expert #8: Agriculture Expert	**7%**		
A Master's degree in the field of Agriculture engineering, Irrigation, Soil Science or a related field. **(ON/OFF).**	**ON/OFF**		
Excellent oral and written communication skills in French **(ON/OFF).**	**ON/OFF**		
A proven track record of 7 years of professional experience in the field of Agriculture, sustainable agricultural/irrigation practices, agriculture-environment Soil Management or other relevant topic **(Required/Evaluated).**	**3%**		
A proven track record of two (2) assignment/project relevant to precision agriculture or modern irrigation technologies, such as automated irrigation systems, sensor-based irrigation (e.g., soil moisture sensors, weather stations), and smart irrigation technologies **(Desired/Evaluated).**	**4%**		
Expert #9: Climate Change / Project preparation Expert	**8%**		
A minimum of a Master's degree (MSc or equivalent) in environment, climate change, development, or related field **(Required, ON/OFF)**	**ON/OFF**		
Excellent oral and written communication skills in French **(ON/OFF)**	**ON/OFF**		
At least 10 years of experience in the field of climate change or environmental resources management or the design, implementation, monitoring and evaluation of development or climate change projects **(Required, Evaluated)**,	**2%**		
A proven track record of developing a minimum of 1 GCF Concept Notes **(Desired, Evaluated)**	**3%**		
A proven track record of developing a minimum of 1 GCF Concept Notes	**3%**		

that has been approved by GCF **(Desired, Evaluated)**			
Section 2: Approach and Methodology	**20%**		
The approach to the requested Assignment will include a detailed description of the methodology to achieve all objectives and tasks, deliver all outputs as described in the Terms of Reference, and consider the appropriateness to local conditions. (Required).	**15%**		
Risks and Mitigation Measures: description of the potential risks associated with the implementation of the Assignment, which have the potential to hinder the successful achievement and timely completion of anticipated outcomes, as well as compromise their quality. This will also entail a description of the counteractive measures that will be implemented to mitigate these risks. (Required).	**5%**		
Total	**100%**		

Failure to provide the minimum required qualifications is considered ground for disqualification.

Scoring for each evaluated section will be made as following:
Section 1 – Expertise and work experience: score starts at 100 points (when minimum requirements are met) and can reach 150 points depending on the description of the participant and the number of projects implemented in excess of those required as a minimum. (100p Base +10p for extra criteria over base up to 50 additional points)
Section 2 – Approach and Methodology: score starts at 100 points and can reach 150 points depending on the length, detail, depth, and structure of the information provided.
Each Section/evaluation criterion is evaluated autonomously. The final scoring of each evaluation criterion is the outcome of its scoring multiplied by the corresponding weighting factor. The overall score of the technical offer is the sum of the final scoring of all the Sections/evaluation criteria.
The overall score of the technical offer is calculated on the basis of the following formula:
Bi = w1 x c1 + w2 x c2 +……
For the overall score which will determine the ranking of offers, technical evaluation will be weighted with 80%, and the financial offer with 20%.
The final listing of the most advantageous offers will be made on the basis of the following formula:
Λi = 0.8* (Bi/Bmax) + 0.2 * (Kmin/Ki).
Where:
- Bmax: the max score received by the best of the technical offers received
- Bi: the score of the technical offer
- Kmin: The cost of the financial offer with the minimum price offered.
- Ki: The cost of the financial offer

The most advantageous offers is the one with the greater value of Λ.
In case of equality of overall scores, the winning proposal is the one whose corresponding technical proposal received the highest rating.

14. Monitoring and Progress Controls

Mr. Dimitris Faloutsos, Deputy Regional Coordinator, Dr. Sarra Touzi, Senior Advisor, and Ms. Barbara Tomassini, Senior Programme Officer at GWP-Med, will be providing oversight and guidance from the side of the Project Team.
Coordination meetings between the consultant and the Project Team shall be scheduled on a bi-weekly basis in order to effectively monitor the progress pertaining to the workplan that was submitted with the Inception Report. The rendering of services shall be executed, and completion thereof shall be determined, upon the satisfaction and approval of the deliverables by the Project Manager and GWP-Med Executive Secretary

15. Place of Performance

The tasks will be carried out from a place of the Consultant's preference. Missions for the consolidation of data (verification missions) and for consultation purposes will be conducted (all in Morocco).

16. Terms and Conditions

• Language

The language of the deliverables/outputs is French. The Final version of the GCF Concept Note and its annexes will be prepared also in English.

• Data and information

The Consultant(s) is responsible to collect all information and data necessary for the completion of this assignment. Missing information (from any side) would not be considered as eligible reason for not completing the tasks. GWP-Med can assist in communicating with relevant institutions and stakeholders to verify the availability of needed data or information.

• Submission of data, reports and other material produced

All primary data, reports, and other documentation produced during this assignment shall be made available to GWP-Med and to the relevant institutions in electronic format. All data acquired, and products developed during the assignment will be in the ownership of the Project and cannot be used by the Consultant and its team without prior written permission.

• Cooperation requirements

The Consultant is expected to work closely with GWP-Med, the Regional Council of TTA (RC TTA) , and beneficiaries (visited during the consultation missions).

• Review and quality assurance

A thorough evaluation of the Consultant's work conducted during the course of the assignment implementation, as well as a comprehensive review of the deliverables, may be conducted by an independent external expert or team of experts. The Consultant is expected to thoroughly consider and incorporate any relevant observations or recommendations provided by the reviewer(s) into the final versions of the deliverables.

• Public consultations / meetings

The consultant will undertake the consultation process, including field visits, bilateral interviews, targeted/focus group meetings, workshops, etc., under the guidance and in close collaboration with GWP-Med and the RC TTA. The Consultant will submit for validation by GWP-Med the list of stakeholders to meet or invite to the workshops, the concept notes and agenda of the workshops, and any material that will be used during the workshops. The consultant will be responsible for all logistical arrangements related to the organization of one kick-off meeting (around 30 participants) and one-day validation workshop (around 50 participants). These responsibilities include, but are not limited to: renting of conference room, organising two coffee breaks and 1 lunch, interpretation French-English, audio-visual and hybrid participation equipment etc.