

Consultancy for the Development of an Integrated Mosquito Management and Sustainable Landscaping Framework

Green Sharm El-Sheikh project

Arab Republic of Egypt

DATE

Terms of Reference (TOR)

1. Context, Background, and Project Description

Egypt's tourism sector is a strategic pillar of the national economy and a major driver of employment, investment, foreign-exchange earnings, and local economic development. Within this sector, Sharm El-Sheikh occupies a distinctive position as one of Egypt's most prominent coastal tourism destinations, combining sun-and-beach tourism, diving, conferences, hospitality, and nature-based tourism. Its tourism economy depends heavily on the quality of its terrestrial and marine ecosystems, including the coral reefs and protected areas of South Sinai.

At the same time, Sharm El-Sheikh faces increasing sustainability pressures associated with tourism growth, urban expansion, infrastructure demand, energy consumption, waste generation, transport emissions, and pressure on biodiversity and natural ecosystems. The long-term competitiveness of the destination, therefore, depends on its capacity to manage tourism development in a manner that protects natural capital, improves resource efficiency, and maintains the environmental quality on which its tourism economy is based.

In response, the Government of Egypt aims to position Sharm El-Sheikh as a model green tourism destination and sustainable city in Egypt and the wider Arab region. The Green Sharm Initiative was originally launched in 2010 to support this transition. Building on this earlier effort, the Ministry of Environment and the Governorate of South Sinai, in cooperation with the United Nations Development Programme (UNDP), are implementing the Global Environment Facility-funded project Green Sharm El-Sheikh.

The overall objective of the Green Sharm El-Sheikh project is to transform Sharm El-Sheikh into a model integrated and ecologically sustainable tourism city of national and international importance through the adoption of low-carbon technologies, improved waste prevention and management, and enhanced protection of the city's natural capital. The project adopts an integrated approach that links tourism development to energy and resource efficiency, sustainable waste management, pollution prevention, biodiversity conservation, institutional coordination, and sustainable urban planning. The project identifies the Sharm El-Sheikh Sustainable Development Strategy and Action Plan (SESSDS) as the principal planning and investment framework for this transformation. The SESSDS is intended to integrate the major dimensions of sustainable destination development, including land use, infrastructure, transport, energy, water and wastewater services, waste management, tourism-sector development, and the management of biodiversity, protected areas, and natural resources. It is supported by performance indicators and monitoring systems that track progress in areas such as greenhouse gas emissions, resource use, waste generation, recycling, sustainable investment, and natural capital protection.

Within this broader framework, the increasing presence of mosquitoes and the associated risk of vector-borne disease represent an emerging challenge for Sharm El-Sheikh's transition toward a safe, resilient, and environmentally sustainable tourism city. Mosquito management is not only a pest-control or public-health matter. It is directly connected to the management of water storage and wastewater systems, irrigation networks, urban drainage, hotel operations, public and private landscaping, pesticide use, biodiversity protection, and the destination's environmental quality. It also has implications for visitor confidence and the international reputation of Sharm El-Sheikh as a well-managed and sustainable tourism destination.

The issue is particularly relevant to the integrated approach promoted by the Green Sharm El-Sheikh project because several measures that can reduce mosquito proliferation can also improve wider environmental performance. Better management of standing water, leaking infrastructure, irrigation systems, drainage, and air-conditioning condensate can contribute simultaneously to mosquito prevention and water conservation. Replacing inappropriate or water-intensive landscaping with desert-adapted vegetation can reduce irrigation demand and chemical inputs while strengthening the city's environmental identity. More selective and responsible pesticide management can reduce unnecessary exposure of people and non-target species and limit the risk of chemical drift, runoff, or leakage into sensitive terrestrial and coastal ecosystems.

The proposed consultancy is consequently conceived as a focused contribution to the implementation of the Green Sharm El-Sheikh project and the SESSDS. It will address a cross-cutting urban sustainability issue located at the intersection of public health, tourism resilience, water efficiency, landscaping, chemicals management, pollution prevention, and biodiversity conservation. In doing so, it will support the broader objective of ensuring that Sharm El-Sheikh's green transformation delivers not only lower emissions and improved resource management, but also a healthy, safe, environmentally responsible, and internationally competitive tourism destination.

2. The Problem to be Addressed

The increasing presence of mosquitoes in Sharm El-Sheikh has become a concern for urban management, public health, the environment, and tourism. Although the city is located in an arid desert environment where natural water availability would ordinarily constrain mosquito reproduction, tourism and urban development have created artificial conditions that can support mosquito populations. Irrigated landscaping, water-storage facilities, leaking pipes and irrigation networks, wastewater infrastructure, air-conditioning condensate, ornamental water features, poorly drained areas and other accumulations of standing water may provide breeding habitats and humid resting environments that would not otherwise exist. Local observations indicate that the mosquito problem has increased alongside the expansion of hotels, irrigated vegetation, and urban water use, although the relative contributions of these sources have not yet been systematically assessed.

The issue has acquired particular importance following the identification of dengue virus infections associated with travel to Sharm El-Sheikh. Four travelers returning from the city between April and June 2024 were confirmed as infected with dengue virus serotype 2¹. The cases involved different travel periods and accommodation locations, and genomic analysis indicated a related cluster, providing evidence of dengue circulation in an area previously unrecognized as a dengue transmission zone.

These cases do not, by themselves, represent the existence of a continuous citywide transmission. Nevertheless, they demonstrate that dengue transmission in Sharm El-Sheikh can no longer be considered merely theoretical. The city therefore faces not only a mosquito-nuisance problem but also the risk of vector-borne disease, which requires stronger surveillance, prevention, and preparedness. This risk is particularly significant because dengue can be difficult to detect through routine reporting, many infections are asymptomatic or mild, and the global distribution of the mosquitoes capable of transmitting the disease is expanding.

For Sharm El-Sheikh, the implications extend beyond the direct effects on public health. The city's economy and international profile depend heavily on its reputation as a safe, attractive and

¹ Neta S. Zuckerman,¹ Guy Choshen,¹ Yaniv Lustig, Anna Shoykhet, Keren Friedman, Tatyana Kushnir, Ora Halutz, Hovav Azulay, Victoria Indenbaum, (2025). Molecular Evidence of Dengue Virus Serotype 2 in Travelers Returning to Israel from the Sinai Peninsula. *Emerging Infectious Diseases*, 31(11), 2199-2202. <https://doi.org/10.3201/eid3111.250991>.

well-managed tourism destination. A significant dengue episode, or a perception that mosquito-related health risks are not being effectively managed, could reduce visitor confidence and cause substantial reputational damage. Even a relatively limited number of cases could attract international media attention and influence travel decisions if the destination is perceived as lacking adequate surveillance and control arrangements. Protecting the health of visitors, workers and residents must therefore be considered an integral part of the city's sustainability agenda. The concept of a green city cannot be limited to energy, waste, water and biodiversity performance; it must also include the ability to provide a healthy urban environment and to anticipate and manage emerging environmental health risks.

The current mosquito-control approach appears to rely heavily on routine outdoor space spraying and synthetic pyrethroid insecticides. Information collected locally indicates the use of several active ingredients and, in some operations, a diesel-based carrier. These practices raise questions concerning effectiveness, product authorization, application methods, worker and public exposure, impacts on non-target organisms and risks to sensitive coastal ecosystems. Space spraying is intended to produce rapid knockdown and mortality among adult flying mosquitoes, but generally has little or no residual effect and does not eliminate eggs, larvae, or the habitats in which mosquitoes reproduce. WHO therefore considers space spraying a complementary measure rather than a substitute for an integrated control system².

The central management weakness is the lack of a sufficiently integrated, evidence-based, and coordinated system linking mosquito surveillance, public health information, water and wastewater management, hotel operations, landscaping, infrastructure maintenance, and carefully targeted pest control measures. At the same time, fragmented responsibilities among public-health authorities, the municipality, hotels, water and wastewater operators, landscape contractors and pest-control companies make it difficult to identify breeding sources, assign corrective actions and monitor compliance across the city.

International good practice treats mosquito management as an integrated activity rather than as a stand-alone spraying operation³. Integrated Vector Management combines local evidence, environmental management, source reduction, larval and adult control, pesticide stewardship, intersectoral coordination, community participation, and continuous monitoring. Its purpose is to make vector control more effective, cost-efficient, ecologically sound and sustainable. For dengue vectors in particular, eliminating or managing egg-laying and larval habitats is a central preventive measure. Water tanks, containers, drains, construction sites, equipment, ornamental features and other locations that retain water can support mosquito development and require regular identification and management.

The arid setting of Sharm El-Sheikh does not remove this risk. Evidence from other desert cities shows that human-made water sources can allow *Aedes aegypti* populations to persist for extended periods without rainfall⁴. Urban greening, landscape irrigation, stored water, storm drains, and ornamental water uses can create localized microhabitats that release mosquito populations from the natural water limitations of the surrounding desert. This evidence supports the need to investigate the relationship between mosquito abundance and water management practices in Sharm El-Sheikh,

² World Health Organization. Space Spray Application of Insecticides for Vector and Public Health Pest Control: A Practitioner's Guide. WHO/CDS/WHOPES/GCDPP/2003.5, 2003.

³ World Health Organization. Handbook for Integrated Vector Management. WHO/HTM/NTD/VEM/2012.3, 2012.

⁴ Newman, E. A., Feng, X., Onland, J. D., et al. (2024). Defining the roles of local precipitation and anthropogenic water sources in driving the abundance of *Aedes aegypti*, an emerging disease vector in urban, arid landscapes. Scientific Reports, 14, 2058.

while avoiding the unverified assumption that any single landscape type is solely responsible for the problem.

Mosquito management is also directly connected to wider environmental inefficiencies. Water leaking from tanks and pipes, excessive irrigation, poor drainage, and unmanaged condensate represent both potential mosquito-breeding conditions and avoidable losses of scarce, energy-intensive water resources. Similarly, extensive areas of non-functional grass and other water-intensive vegetation may require frequent irrigation, fertilizers, and pesticides that are ill-suited to the city's desert context. Local information raises particular concerns about heavily irrigated beachfront landscaping and the potential movement of nutrient-rich water and pesticide residues through porous coastal substrates toward the marine environment. Although the scale and specific pathways of these impacts require further verification, reducing over-irrigation, improving drainage, using appropriate desert-adapted plants and limiting unnecessary chemical inputs would simultaneously support water conservation, mosquito prevention and biodiversity protection.

The environmental implications of repeated insecticide use are especially important in a destination whose principal natural asset is the Red Sea ecosystem. Poorly targeted or excessive pesticide application can expose workers, residents and visitors and can affect pollinators, beneficial insects and aquatic organisms. Drift, runoff or leakage of pesticides toward coastal waters could create additional pressure on marine organisms and reef-associated ecosystems. The problem is therefore not whether all chemical control should be excluded, but whether pesticides are being selected, applied and monitored within a justified and environmentally responsible decision-making framework.

Sharm El-Sheikh consequently faces a combined and mutually reinforcing problem. Artificial urban water sources and landscape-management practices may be creating conditions that sustain mosquito populations; evidence of dengue circulation has introduced a credible public-health and destination-reputation risk; existing control remains strongly associated with routine spraying rather than demonstrated population-level results; and some current water, landscaping and pesticide practices may themselves create environmental impacts inconsistent with the city's green-development objectives. The absence of an integrated system prevents the city from addressing these issues together and capturing the environmental benefits that would result from improved mosquito prevention.

The problem to be addressed is therefore the lack of a coherent, surveillance-led and environmentally sustainable framework through which Sharm El-Sheikh can understand, prevent and manage mosquito proliferation and the associated risk of vector-borne disease. Such a framework must recognize that public health, tourism resilience, water efficiency, sustainable landscaping, pesticide management and protection of coastal biodiversity are not separate concerns. They are interdependent components of the same urban sustainability challenge.

3. Objective of the consultancy

Overall Objective

The overall objective of the consultancy is to enable Sharm El-Sheikh to understand, prevent, manage, and monitor mosquito proliferation and the associated risk of vector-borne disease through an evidence-based, surveillance-led, integrated, and environmentally sustainable management approach.

The consultancy will support the development of a practical framework that combines mosquito surveillance and source reduction with improved water management, sustainable landscaping,

responsible pesticide use, environmental protection, and strengthened implementation capacity among municipal authorities, hotels, service providers, and other relevant stakeholders.

Specific Objectives

O1. Establish a Sharm El-Sheikh-specific evidence base

Establish a reliable evidence base on mosquito species, distribution, breeding and resting conditions, seasonal and spatial patterns, existing control practices, pesticide use, and the water, wastewater, irrigation, drainage, landscaping, and infrastructure conditions that may contribute to mosquito proliferation.

The evidence base should enable the identification of priority locations, practices, risks, and intervention areas and provide a baseline against which the effectiveness of future mosquito-management measures can be monitored.

O2. Develop an Integrated Mosquito Management Framework

Develop a surveillance-led Integrated Mosquito Management Framework adapted to the environmental, public-health, tourism, and operational context of Sharm El-Sheikh.

The framework shall prioritize prevention, source reduction, environmental management, and non-chemical or biological methods, while defining the appropriate and justified use of larval and adult mosquito control. It shall also incorporate Integrated Pest Management principles and review the main pesticides and pest-control methods currently used by hotels, municipal services, landscaping teams, and pest-control operators, with the aim of promoting legally authorized, effective, and lower-risk alternatives.

O3. Integrate mosquito prevention with sustainable environmental management

Identify practical measures through which mosquito prevention can contribute simultaneously to improved environmental performance in Sharm El-Sheikh.

This objective shall address the management of standing water, leaks, irrigation systems, drainage, water storage facilities, wastewater infrastructure, air-conditioning condensate, and other artificial water sources. It shall also promote desert-adapted and water-efficient landscaping, the reduction or replacement of inappropriate, non-functional, water-intensive grass, and the responsible management of fertilizers and pesticides.

The proposed measures shall aim to reduce mosquito-supporting conditions while improving water efficiency, limiting unnecessary chemical inputs, and reducing risks to people, non-target species, and sensitive terrestrial and coastal ecosystems.

O4. Produce application-ready guidelines, standards, and operational procedures

Translate the evidence base and the Integrated Mosquito Management Framework into practical, bilingual Arabic-English guidelines, standards, procedures, protocols, checklists, and decision-support tools that can be applied directly by the Municipality, hotels, landscaping and irrigation teams, pest-control operators, and other relevant service providers.

The guidelines shall include practical requirements for surveillance, source reduction, water and drainage management, sustainable landscaping, pesticide selection and application, environmental and occupational safeguards, monitoring, and corrective action. They shall also include a decision-support list distinguishing preferred, conditionally acceptable, not recommended, and prohibited or unauthorized pesticides and pest-control methods, based on Egyptian regulatory status, effectiveness, environmental persistence, and risks to people, pollinators, birds, aquatic organisms, and other non-target species.

O5. Strengthen implementation capacity and stakeholder awareness

Strengthen the initial capacity of municipal personnel, hotel management and technical staff, gardeners, irrigation and maintenance personnel, pest-control operators, and other relevant stakeholders to apply the proposed framework, guidelines, standards, and procedures.

This objective shall be achieved through an initial round of bilingual training, practical capacity building, and targeted awareness raising adapted to the different responsibilities of decision-makers, technical personnel, operators, and other stakeholders.

The capacity-building component shall support a shared understanding of the causes and implications of mosquito proliferation, the limitations of relying solely on routine spraying, the importance of surveillance and source reduction, and the environmental and operational benefits of improved water management, landscaping, and pesticide management practices.

4. Scope of the consultancy

Geographical Scope

The consultancy shall cover Sharm El-Sheikh as a citywide context. The resulting framework, standards, and procedures shall be applicable to municipal areas, hotels and tourism establishments, landscaped public and private spaces, pest-control operations, and other locations relevant to mosquito prevention and management.

Detailed field assessment shall be undertaken at a representative selection of hotels, municipal sites, landscaped areas, water-related infrastructure, and environmentally sensitive locations. The sample should reflect different operating conditions, including areas characterized by intensive irrigation, water storage or drainage infrastructure, routine mosquito control activities, reported mosquito nuisance, and proximity to coastal ecosystems.

The consultant shall propose the final site-selection methodology and sample during the inception phase, in consultation with the Green Sharm El-Sheikh project, the Municipality, relevant public authorities, and participating hotels. The field sample shall be sufficiently diverse to support the development of a citywide management framework without requiring a comprehensive inspection of every property or public space.

Technical Scope

Baseline Assessment and Diagnosis

The consultant shall establish a Sharm El-Sheikh-specific baseline covering mosquito ecology, existing control practices, artificial water sources, landscaping conditions, pesticide use, and the operational arrangements through which mosquito and pest management are currently undertaken.

The assessment shall combine a review of available epidemiological, entomological, environmental, and operational information with stakeholder consultation and direct field investigation. It shall examine the practices of the Municipality, hotels, landscaping and irrigation teams, pest-control operators, water and wastewater service providers, and other relevant actors.

Direct sampling of larval and adult mosquitoes shall form part of the assessment. The consultant shall apply appropriate surveillance methods and ensure competent identification of the mosquito species collected. The assessment shall document, to the extent possible within the consultancy period, their abundance, spatial and seasonal patterns, breeding and resting conditions, and the locations and environmental factors associated with their presence.

The assessment shall also examine the effectiveness and environmental implications of existing mosquito-control practices, including the products, active ingredients, formulations, application methods, equipment, frequency, timing, occupational safeguards, and monitoring arrangements currently used.

Water-storage systems, irrigation networks, leaks, drainage conditions, wastewater-related infrastructure, air-conditioning condensate, ornamental water features, landscaped areas, grass, fertilizer use, and other artificial conditions that may contribute to mosquito proliferation shall be assessed as part of the same diagnosis. The consultant shall identify priority locations, practices, risks, immediate corrective measures, and areas requiring further investment or infrastructure improvement.

The baseline shall provide a practical basis for prioritizing interventions and establish indicators against which future mosquito-management measures can be monitored.

Integrated Mosquito Management and Environmental Framework

Based on the diagnostic findings, the consultant shall develop an Integrated Mosquito Management Framework adapted to the environmental, public health, tourism, and operational conditions of Sharm El-Sheikh.

The framework shall prioritize surveillance, prevention, source reduction, and environmental management. It shall define the appropriate roles of water and infrastructure management, breeding-site elimination, larval control, targeted adult mosquito control, pesticide stewardship, public-health preparedness, and performance monitoring. Interventions shall be selected based on identified mosquito species, abundance, breeding conditions, public health risk, environmental sensitivity, and demonstrated operational need.

The framework shall integrate mosquito prevention with improved water management and sustainable landscaping. It shall address standing water, leaking infrastructure, over-irrigation, inadequate drainage, water-storage systems, wastewater-related facilities, condensate management, and other artificial water sources. It shall also establish practical principles for desert-adapted and water-efficient landscaping, efficient irrigation, and the reduction or replacement of inappropriate, non-functional, and water-intensive grass.

The consultant shall review the principal pesticides and pest-control methods currently used by hotels, municipal services, landscaping teams, and pest-control operators for mosquitoes, other relevant nuisance insects, and landscape-related pests. The review shall assess their legal status, intended use, effectiveness, environmental persistence, application methods, occupational and public-health implications, and risks to pollinators, birds, aquatic organisms, beneficial insects, and sensitive terrestrial and marine environments.

The framework shall promote Integrated Pest Management principles, prioritizing prevention, sanitation, exclusion, environmental modification, physical control, and biological methods wherever they are effective and practicable. Where chemical control remains necessary, the framework shall promote legally authorized products and application methods presenting the lowest practicable risks for the intended use.

The assessment shall clearly distinguish between the legal registration or authorization status established by competent Egyptian authorities and additional Green Sharm good-practice recommendations based on environmental and operational considerations.

Application-Ready Guidelines and Field Validation

The consultant shall translate the Integrated Mosquito Management Framework into practical, bilingual Arabic-English guidelines, standards, procedures, protocols, checklists, and decision-support

tools suitable for direct use by the Municipality, hotels, landscaping and irrigation personnel, maintenance teams, pest-control operators, and other relevant service providers.

The operational package shall address mosquito surveillance and species identification, inspection of breeding sites, source reduction, water-storage and drainage management, irrigation and landscaping practices, pesticide selection and application, environmental and occupational safeguards, treatment monitoring, recordkeeping, reporting, and corrective action.

The guidelines shall include a pesticide and pest-management decision-support list distinguishing preferred, conditionally acceptable, not recommended, and prohibited or unauthorized products and methods. The classifications shall consider Egyptian regulatory status, effectiveness, environmental persistence, degradation characteristics, application conditions, and risks to people and non-target organisms. The consultant shall also identify suitable preventive, physical, biological, or lower-risk alternatives, as well as any significant constraints affecting their availability in the Egyptian market.

The draft framework and operational tools shall be field-tested at selected hotel and municipal sites. The testing shall assess whether the proposed procedures, checklists, decision tools, and monitoring arrangements are understandable, practical, and appropriate for local operating conditions. Feedback from intended users and relevant stakeholders shall be documented and incorporated into the final materials.

The field-validation process shall focus on testing the application of the proposed instruments.

Training, Capacity Building, and Awareness Raising

The consultant shall develop and deliver an initial bilingual training and capacity-building program to support the application of the framework, guidelines, standards, and procedures.

Training shall be adapted to the responsibilities of the different target groups, including municipal personnel, hotel managers and environmental staff, gardeners, irrigation and maintenance personnel, pest-control operators, inspectors, and other relevant stakeholders. It shall combine technical explanation with practical exercises based on the inspection procedures, checklists, decision-support tools, and monitoring instruments developed under the consultancy.

The consultant shall also undertake targeted awareness-raising to explain the relationship between mosquito proliferation, standing water, irrigation and landscaping practices, public health, tourism reputation, pesticide use, and biodiversity protection. Particular emphasis shall be placed on the limitations of relying solely on routine space spraying and on the environmental and operational benefits of surveillance, source reduction, water efficiency, sustainable landscaping, and responsible pest management.

Time Frame

The consultancy shall be completed within **six months** of the contract signature date.

The assignment shall proceed through an inception and diagnostic phase, followed by development of the integrated framework and draft operational instruments, field testing and stakeholder validation, and finalization, training, and handover.

The consultant shall submit a detailed work plan during the inception phase, identifying the sequencing of activities, field missions, consultation requirements, review periods, dependencies, and quality-control arrangements. The schedule shall be aligned with the deliverables and acceptance milestones established in Section 5.

5. Deliverables

The consultant shall produce the reports and deliverables listed below. All outputs shall be prepared in accordance with the approved methodology, the requirements established in the Scope of the Consultancy, and the comments provided by the Green Sharm El-Sheikh project during the review process.

Timing	Report (R) Deliverable (D)	Expected Content
End of Month 1	R1 Inception Report	The Inception Report shall confirm the consultant's understanding of the assignment and present the detailed methodology, work plan, schedule, site-selection criteria, stakeholder-engagement approach, mosquito-sampling and species-identification methods, pesticide-review methodology, data requirements, indicators, quality-control arrangements, risks, dependencies, and proposed structure of subsequent outputs.
End of Month 3	R2 Baseline Assessment and Diagnosis Report	The report shall present the findings of the desk review, stakeholder consultations, and field assessment. It shall document larval and adult mosquito sampling, species identification, abundance and distribution, breeding and resting conditions, existing mosquito-control practices, pesticide use, water-storage and drainage conditions, irrigation and landscaping practices, and relevant environmental and operational risks. It shall identify priority locations, practices, intervention needs, and baseline indicators for future monitoring.
End of Month 4	D1 Draft Integrated Mosquito Management Framework and Operational Package	The deliverable shall provide the complete draft Integrated Mosquito Management Framework and the first consolidated version of the bilingual operational package. It shall include the proposed surveillance and source-reduction approach, water and infrastructure-management measures, sustainable landscaping and irrigation guidance, pesticide-stewardship provisions, environmental and occupational safeguards, monitoring arrangements, standards, procedures, protocols, checklists, reporting tools, and the draft pesticide and pest-management decision-support list.
End of Month 5	D2 Final Integrated Mosquito Management Framework,	The deliverable shall present the finalized bilingual framework and application-ready operational package, incorporating the results of field testing, stakeholder consultation, and technical review. It shall include the final standards, procedures, protocols, inspection checklists, monitoring and reporting tools,

	Guidelines, and Operational Tools	corrective-action instruments, sustainable landscaping and water-management guidance, and pesticide and pest-management decision-support list.
During Month 6	D3 Training, Capacity-Building, and Awareness Package	The consultant shall deliver one management and awareness session for decision-makers and hotel managers and one practical technical session for municipal personnel, inspectors, gardeners, irrigation and maintenance staff, and pest-control operators.
End of Month 6	R3 Final Technical Report and Handover Package	The Final Technical Report shall consolidate the assignment methodology, principal findings, results, lessons, limitations, implementation priorities, and recommendations for future action. It shall summarize the development and validation of the framework, identify priority short-, medium-, and longer-term measures, and document any issues requiring further investigation or investment. The handover package shall include all final reports, guidelines, datasets, sampling records, spatial information, monitoring tools, pesticide inventories, editable templates, training resources, and an indexed inventory of all materials produced under the consultancy.

All reports and deliverables shall be submitted in Arabic and English. Each output shall be provided electronically in PDF and editable source formats. Databases, monitoring tools, pesticide inventories, mosquito-sampling records, and spatial information shall be supplied in open, structured, and reusable formats.

Reports and deliverables shall clearly distinguish verified findings, stakeholder-provided information, technical interpretation, and recommendations. All relevant sources, field observations, consultations, sampling locations, analytical methods, and regulatory references shall be documented in a traceable manner.

The Green Sharm El-Sheikh Project Manager shall review each submission within ten working days. Where revisions are requested, the consultant shall submit a revised version and a comments-response matrix within the period agreed with the Project Manager.

6. Qualifications

The assignment shall be undertaken by an individual Egyptian consultant with demonstrated expertise in mosquito surveillance, Integrated Vector Management, and environmentally responsible pest management. The consultant may mobilize qualified supporting specialists or laboratory services where additional expertise is required, while remaining fully responsible for the methodology, coordination, technical consistency, quality, and timely delivery of all outputs.

Education

The consultant shall hold an advanced university degree in entomology, vector biology, environmental health, public health, biology, zoology, pest management, environmental science, or another field directly relevant to the assignment.

A first-level university degree in a relevant field, combined with at least two additional years of directly relevant professional experience, may be accepted in lieu of an advanced degree.

General Professional Experience

The consultant shall have at least 10 years of relevant professional experience in mosquito surveillance and control, vector management, environmental health, Integrated Pest Management, public health pest management, or closely related fields.

Experience limited principally to routine pesticide application, fogging, or space spraying shall not, by itself, satisfy this requirement.

Specific Professional Experience

The consultant shall demonstrate practical experience in designing or implementing mosquito-surveillance and management activities, including larval and adult mosquito sampling, identification of breeding and resting habitats, species identification or supervision of competent taxonomic identification, interpretation of entomological findings, and development of monitoring indicators.

The consultant shall have demonstrated experience in Integrated Vector Management approaches that combine surveillance, source reduction, environmental management, larval control, appropriately targeted adult control, pesticide stewardship, and performance monitoring.

The consultant shall also demonstrate knowledge of Integrated Pest Management and pesticide assessment, including active ingredients and formulations, authorized uses, environmental persistence, occupational and public health safeguards, risks to non-target organisms, resistance management considerations, and preventive, biological, physical, or lower-risk alternatives.

Experience assessing the relationship between mosquito proliferation and water storage, drainage, irrigation, wastewater infrastructure, urban landscaping, and other artificial water sources is required. Knowledge of water-efficient and desert-adapted landscaping, irrigation management, and the environmental implications of fertilizer and pesticide use shall be demonstrated either by the lead consultant or through a named supporting specialist.

The consultant shall have experience translating technical findings into practical operational instruments, including guidelines, standards, standard operating procedures, inspection checklists, decision-support tools, monitoring systems, field manuals, and training materials.

The consultant shall provide evidence of at least two assignments of comparable relevance involving mosquito surveillance, vector or pest management, environmental health, or the development of operational pest-management frameworks.

Training and Stakeholder Engagement

The consultant shall have demonstrated experience delivering technical training and practical capacity-building activities for government personnel, private-sector operators, technical staff, or field personnel.

The consultant shall also have experience consulting and coordinating with public authorities, municipalities, hotels or tourism establishments, pest-control operators, landscape and irrigation teams, laboratories, utilities, or other relevant stakeholders.

The ability to communicate technical and public-health information clearly to both specialist and non-specialist audiences is required.

Country and Sector Experience

Demonstrated professional experience in Egypt and familiarity with relevant Egyptian institutional and pesticide-regulatory arrangements are required.

Experience in South Sinai, the Red Sea region, arid or desert urban environments, coastal tourism destinations, hotels and resorts, or ecologically sensitive and reef-adjacent areas shall be considered an advantage.

Supporting Specialists and Technical Services

The consultant may engage supporting specialists or technical service providers where necessary to complement the lead consultant's expertise. Supporting inputs may include mosquito taxonomy or laboratory identification, pesticide toxicology and regulatory review, sustainable landscaping and horticulture, irrigation and drainage, environmental risk assessment, or training and communication.

The technical proposal shall identify any proposed supporting specialists or service providers and describe their qualifications, responsibilities, expected level of input, and relationship to the lead consultant.

The use of supporting specialists shall not reduce or transfer the lead consultant's contractual responsibility. The lead consultant shall remain accountable for integrating all technical contributions into a coherent methodology and for ensuring the consistency and quality of all reports and deliverables.

Language Requirements

The consultant shall have excellent written and spoken proficiency in Arabic and English and shall be able to prepare professional technical reports, guidelines, operational tools, training materials, and presentations in both languages.

7. Implementation Arrangements

Supervision: The contractor's supervisor will be the project manager.

Activity updates: The contractor will need to submit monthly update reports.

Approval: The project manager will approve reports and deliverables. The approval period is ten working days.

Language: All reports and deliverables should be submitted in Arabic and English.

Timing of consultancy: The consultant is expected to complete the activities identified in this TOR within SIX months of the contract's signature.

Support Provided: The Green Sharm project will support the consultant with its dedicated team operating in Sharm El Sheikh, facilitating the interaction with stakeholders, identifying players to be involved in, and supporting the dialogue with the municipality.

8. Application

A technical proposal (maximum 10 pages) outlining the proposed methodology based on the TOR, including the proposed approach and an implementation plan. The proposal should also include the following:

- Information as detailed in the "Qualifications" section.
- A CV detailing qualifications and experience.
- The names, roles, CVs, expected level of effort, and signed statements of availability of all proposed supporting specialists, together with details of any laboratory or technical-service provider proposed for mosquito identification or other specialist work.
- Background information and reference from previous works.

Any other supporting materials relevant to the proposal.

The financial proposal shall present an all-inclusive lump-sum price in Egyptian pounds, including the consultant's and supporting specialists' fees, laboratory and technical service costs, field equipment

and sampling costs, travel and accommodation, training costs, and all applicable taxes and VAT, where applicable.

Candidates should submit their proposals by 8th of September 2026, to the following e-mail address:

- m.elewa@greensharm.org

9. Evaluation and Selection Criteria

Proposals shall be evaluated through a preliminary eligibility screening, followed by technical and financial evaluation. Only proposals that satisfy all mandatory requirements and achieve the minimum technical score shall proceed to financial evaluation.

The technical evaluation shall account for 70 points, while the financial evaluation shall account for 30 points. The minimum qualifying technical score shall be 49 points out of 70, equivalent to 70 percent. The criteria reflect the qualifications, scope, consultation requirements and deliverables established in the Terms of Reference.

N.	Evaluation Criteria	Scoring Criteria
A	<i>Preliminary screening and mandatory requirements</i>	<i>Yes/No</i>
A1	The applicant is an Egyptian national	
A2	The applicant has submitted all required technical, financial and administrative documents in the prescribed format	
B	<i>Technical Evaluation</i>	<i>Points</i>
B1	Qualification for the assignment The assessment will consider the relevance and level of the applicant's academic qualifications, professional specializations, and technical competencies in relation to the assignment. Particular attention will be given to qualifications in entomology, vector biology, environmental health, public health, Integrated Vector Management, Integrated Pest Management, or related fields, together with demonstrated competence in mosquito surveillance, pesticide management, and environmental risk assessment.	15
B2	Experience for the assignment The assessment will consider the relevance, duration, and quality of the applicant's professional experience and comparable previous assignments. Higher scores will be awarded for demonstrated experience in mosquito sampling and species identification, Integrated Vector Management, pesticide and pest-management assessment, preparation of operational guidelines and procedures, and delivery of technical training. Experience in Egypt, arid or coastal tourism destinations, hotel and municipal operations, and environmentally sensitive areas will be considered particularly relevant.	15
	TOTAL	30
C1	Understanding the TOR objectives and scope of work The proposal will be assessed on the applicant's understanding of the problem to be addressed, the objectives of the consultancy, and the interconnections among mosquito	5

N.	Evaluation Criteria	Scoring Criteria
	management, public health, tourism resilience, water management, sustainable landscaping, pesticide use, and biodiversity protection. The proposal should demonstrate a clear understanding of the required outputs, stakeholders, geographical context, limitations, and intended application of the resulting framework.	
C2	Methodology and approach The assessment will consider the technical soundness, clarity, and completeness of the proposed methodology. The proposal should explain how the consultant will undertake the desk review, stakeholder consultation, site selection, larval and adult mosquito sampling, species identification, assessment of existing control practices, environmental and landscaping analysis, pesticide review, framework development, field validation, and capacity building.	20
C3	Appropriateness of the proposed solutions and approach The proposal will be assessed on whether the proposed approach responds appropriately to the specific environmental, public-health, tourism, and operational conditions of Sharm El-Sheikh. Higher scores will be awarded to proposals that prioritize surveillance, prevention, source reduction, sustainable water and landscaping management, and Integrated Pest Management, while providing a justified and environmentally responsible role for chemical control. Proposed solutions should be feasible, proportionate, and applicable within the Egyptian institutional and market context.	5
C4	Implementation plan and timeline The assessment will consider whether the proposed implementation plan provides a realistic and coherent sequence of activities within the six-month consultancy period. The plan should identify key phases, fieldwork, consultations, dependencies, review periods, validation activities, training, and quality-control arrangements.	5
C5	Deliverables and reporting The proposal will be assessed on the applicant's approach to preparing and managing the reports and deliverables required under the TOR. The proposed reporting arrangements should demonstrate an understanding of the expected content, sequencing, bilingual requirements, editable and reusable formats, evidence and data requirements, field-validation documentation, and review process.	5
	TOTAL	40
<i>D</i>	<i>Financial Evaluation</i>	<i>Points</i>
D1	Proposal lump sum and breakdown in EGP with VAT	30
	TOTAL	30
	GRAND TOTAL	100

The selection will consider only bids that meet the "Qualifications" set out in this TOR (criteria A and B in the previous table).

Proposals that qualify for assessment will be evaluated based on their understanding of the TOR, proposed methodology, appropriateness, implementation plan, deliverables, reporting, and cost.

The proposals will be evaluated using a combined scoring method. The proposed methodology, expertise, and qualifications for the consultancy will be weighted up to a maximum of 70 points, combined with the price offer, which will be weighted up to a maximum of 30 points.

10. Terms of Payment

Compensation will be determined in accordance with UNDP's policies and procedures. In accordance with applicable policies.

The Consultant will be responsible for any needed accommodation, transportation, and travel expenses. The financial proposal will include a detailed cost breakdown of travel expenses.

The following payments will be made according to the schedule below:

- 10% after the contract is signed and the Inception Report is approved.
- 25% after delivery and approval of R2: Baseline Assessment and Diagnosis Report
- 20% after delivery and approval of D1: Draft Integrated Mosquito Management Framework and Operational Package
- 15% after delivery and approval of D2: Final Integrated Mosquito Management Framework, Guidelines, and Operational Tools
- 20% after delivery and approval of D3: Training, Capacity-Building, and Awareness Package
- 10 % after the delivery and approval of R3: Final Technical Report and Handover Package