

TERMS OF REFERENCE

Services of a Naval Architect and Supervision Consultant for Marine Vessel
Construction

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1. Terms of Reference

TERMS OF REFERENCE

Services of a Naval Architect and Supervision Consultant for Marine Vessel Construction

1.1 Background

Agro National Corporation (AgroNat) was formed 21st April 2020 as a State-Owned Enterprise (SOE) with the overall mandate to assist in developing the agricultural sector in the Maldives. AgroNat is working towards enforcing objectives such as enabling an efficient supply-chain for agriculture, providing technical expertise and training to farmers, expanding the role of women in farming, and facilitating access to quality fertilizers across islands. AgroNat will also aim to achieve economic targets relating to food security, import substitution, creation of jobs and improving the trade balance.

The Government of Maldives, in its Strategic Action Plan devised for 2019 – 2023, had proposed to establish a dedicated SOE for agricultural development, with an objective of revitalizing the agriculture sector as per the Blue Economy vision. Despite being an integral part of Maldivian society for ages, the agriculture sector has remained under-developed and unexposed to modern developments in farming techniques and technology. The government under its agenda for economic diversification aims to promote agriculture as a meaningful sector in the Maldivian economy.

AgroNat aims to expedite an efficient supply-chain for local agricultural products that will enable farmers to collect a fair price for their produce. Hence, AgroNat is purchasing locally produced fruits and vegetables from farmers and re-selling the produce to wholesale buyers. In the intermediate term, the corporation aims to work towards an import substitution policy that will reduce imports of certain locally produced crops by 50%.

AgroNat is working on addressing the challenges faced by farmers in maintaining the cold chain and timely delivery of produce to the market. As such, the company is planning to construct purpose build transport vessels, with reduced fuel requirement and solar power for energy production.

The Project for Developing Sustainable Agricultural Economy (PDSAE) builds on the success of the Sustainable Economic Empowerment and Development for SMEs (SEEDS) project and aims to further strengthen local productivity of agricultural produce in the Maldives. By doing so, the project aims to enhance food security in the archipelagic nation, which has very limited arable land, and enable more entrepreneurs interested in the agricultural businesses to enter the sector and facilitate secondary and tertiary production of related commodities including foodstuff and textiles. This will be achieved through three outputs focusing on: 1) strengthening assistance to increase local farmer expertise in agriculture, 2) enhancing agricultural capacities and opportunities to ensure food security and 3) enhancing support industries and value-added services to augment agro businesses.

The project, funded by the Government of Japan, will be implemented through partnership with the United Nations Development Programme (UNDP) in Maldives, the Ministry of Economic Development (MED),

Ministry of Fisheries, Marine Resources and Agriculture (MoFMRA), Agro National Corporation (AgroNat), Maldives Fund Management Corporation (MFMC), the Business Centre Corporation (BCC) and Housing Development Corporation (HDC).

Under this project, AgroNat will establish a sustainable, effective, reliable, and timely transportation mechanism utilizing low-carbon technology for agricultural produce from farmers to markets, clients and customers. The assurance of a dedicated and fit-for-purpose transportation mechanism will help increase entry of new businesses to the market as it provides greater confidence that their produce can be delivered to different markets through the nationwide transport network to be introduced by AgroNat.

1.2 Objective

AgroNat intends to hire a consultancy service of a Boat Building Consultant/firm to provide technical/engineering input/advice, inspect and monitor two vessels during the design, construction, delivery, and testing stage. Under this project 2 vessels will be constructed.

1.2.1 The specific objectives are

- a. The consultant/firm will identify the work areas and prepare bid documents and carryout the technical evaluations of the bids related to procurement.
- b. Evaluate and approve all the designs and technical drawings for the vessels and their structures as well as oversee and monitor the vessels during the construction and testing.
- c. Ensure vessel structure and design is as per the technical specification provided AgroNat.
- d. Coordinate with stakeholder organizations and translate their performance requirements into design specifications. The consultant/firm shall consult with stakeholders such as farmers, MoFMRA, MED and Ministry of Transport and Civil Aviation Authority.
- e. Review performance and ensure engineering and safety standards are met in all interiors, exterior, and structural details of the vessels.
- f. Ensure compliance with current statutory and regulatory requirements as per the national regulations and maintain the best practices used in vessel construction.
- g. Coordinate between the Client and Contractors to ensure smooth execution of the contract.
- h. Provide technical assistance to AgroNat regarding the construction of vessels.
- i. Attend meetings with the contractors, suppliers, vendors, external utilities, professional staff, facility operators and clients as required to ensure the smooth delivery of contract services and compile minutes of meetings and distribute as necessary.

- j. Review contract execution for compliance with the project’s contractual requirements (i.e., labour compliance, Environmental and Social Safeguard Framework etc.), ensure compliance with Contractor’s licenses, review Contractor’s work schedule & method statement, and assess compatibility with the overall work schedule.
- k. Approve and perform all the operational dock trials and sea trials for the vessels in accordance with the requirement provided by AgroNat and testing plans by AgroNat.
- l. Reporting on the construction progress, inspections, delivery of the vessels as per AgroNat’s requirement, and prepare and submit Final Service Delivery Report consisting of the assessments and actual timelines of service.

Ensure the vessels are designed and constructed to reduce carbon emissions through features such as improved hydrodynamics, lightweight material choices/carbon fibre, fuel efficiency, CFC free refrigeration and integration of renewable energy into the operation of the vessel. In addition, it is also desirable to utilize remote monitoring and tracking of both vessel and cargo to ensure fuel efficient travel routing.

1.3 Scope of Services and Expected Deliverables and Payment Schedule

The consultant/firm will be responsible for bid document preparation, technical evaluation, contract coordination, administration and scheduling, evaluation and approval of drawings and designs, supervision, monitoring and control, construction surveys, field inspection and site observation, and quality assurance of materials, equipment, machinery. The Transport Specialist will be responsible for overall co-ordination of the on-site construction process to the extent necessary to ensure that all works will be performed to the level and quality required, and to a schedule which is compatible with the requirements of the overall construction and contract management.

No.	Task	Deliverables	Payment Schedule %
1.	Identify work areas and preparation of bid documents and technical evaluation. (Completion of all bid documents under the project)	1.1 Prepare bid documents. 1.2 Carryout the technical evaluation of the bids received for the design and construction of vessels.	20%
2.	Design Approval.	2.1 Ensure the drawings and designs are as per the technical specification provided by the Corporation. 2.2 Approval of all designs and technical drawings for the vessels and their structures.	5%

3.	Structure and Material Approval	3.1 Approve the structure and materials in compliance with the specifications and requirement provided by the Corporation.	5%
4.	Field Inspection, Site Observation, Monitoring, and Control	<p>4.1 Perform site observations of the construction activities for minimizing defects and deficiencies in the work of the Contractor(s) and to ensure that provisions of the contract documents are being fulfilled.</p> <p>4.2 Coordinate, review and approve Quality Assurance for materials testing. Where Quality Assurance for materials testing results, established by Contractor(s)' workmanship is deficient in any way, the Transport Specialist will ensure corrective actions are undertaken by the Contractor(s) so that the deficiencies are satisfactorily expedited to the Transport Specialist's satisfaction.</p> <p>4.3 Observe and monitor Contractor(s)' compliance with regulatory permits, environmental management and mitigation plans, workplace safety and health standards, and Contractor(s)' work schedule & method statement. Where the Contractor(s)' performance is deficient, the Transport Specialist will ensure corrective actions are undertaken by the Contractor(s) so that the deficiencies are satisfactorily expedited to the Transport Specialist's satisfaction.</p> <p>4.4 Identify the technical issues and escalate them as appropriate, ensure early resolution and facilitate the execution. Take and maintain digital photographs, document the construction progress, and prepare inspection & site observation reports</p>	<p>45%</p> <p>Payment upon submission of monthly Progress Report at the end of each month from the commencement of the construction work. In case of early delivery and acceptance of the vessels, the remaining amount of the allocated percentage will be paid in a lump sum. (45% will be divided for the contractual duration of the vessel construction contract)</p>

		<p>documenting observed construction activities.</p> <p>4.5 Prepare and submit monthly Progress Reports consisting of the updates of the vessel construction and details of all the works carried out during the month including the findings of the field inspections, site observations, etc. to the responsible department head.</p>	
5.	Inspection and Delivery	<p>5.1 Perform routine construction closeout site inspections to determine if units are complete and in compliance with Contract Documents and list corrective actions and prepare recommendations to the Corporation as to the release of payments to the Contractor(s), vendors and suppliers.</p> <p>5.2 Ensure the provision of all the necessary insurance, security, safety maintenance and operation of the vessel by the contractor, prior and during delivery.</p> <p>5.3 Oversee the pre-delivery inspections (Visual, functional, and quantitative check) for each vessel in a location agreed between the Supplier and the Corporation, as per the requirement provided by Corporation.</p> <p>5.4 Carryout inspections post-delivery in accordance with the requirement provided by the Corporation, for each vessel following the delivery.</p> <p>5.5 Submit pre-delivery inspection reports, post-delivery inspection reports.</p>	<p>15%</p> <p>Payment upon submission of inspection reports. (15% will be divided among the number of inspections that will be carried-out for the project).</p>

6.	Testing and Acceptance	<p>6.1 With the assistance of the Supplier, approve and perform the operational dock trials and sea trials in accordance with the requirement provided by AgroNat, for each vessel.</p> <p>6.2 Submit Acceptance Certificate along with the Final Service Delivery Report for each vessel.</p>	<p>10% Payment upon submission of the Acceptance Certificate and Final Service Delivery report for each vessel.</p>
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1.4 Submission format of Deliverables

All deliverables inclusive of all survey and EIA reports and documents should be submitted in digital copy in a USB, as specified below:

- All reports must be submitted pdf format.
- All raw data and processed data must be provided (in .xlsx, dwg format)
- All maps and drawings to be provided in AutoCAD and PDF format.
- All maps and drawings must be provided at 1:1000 scale on A3 or larger sheets.

2 Hard copy of complete final reports should be submitted to the client.

1.5 Competencies of the project team

The consultancy team shall have key personnel with the following minimum qualifications and experiences:

PERSONNEL	QUALIFICATIONS AND EXPERIENCES
1. Naval Architect	<ul style="list-style-type: none"> • An accredited master’s degree in Maritime Technology, Marine Engineering, Naval Architecture, or a field relevant to the assignment. • Must have professional work experience of minimum seven (07) years in a field relevant to the assignment. • At least two similar projects within last seven years. <p>Demonstrated experience in the design and manufacture or inspection and audits of similar vessels will be an added advantage. Sound knowledge of design and construction standards of marine vessels.</p> <p>Excellent command of English with proven communication, presentation, and interpersonal skills.</p> <p>Able to work for extended periods without direct supervision.</p> <p>Familiarity with the legal framework and procedures related to marine vessel design.</p> <p>Analytical skills to interpret technical information and drawings</p>
2. Marine Engineer	<ul style="list-style-type: none"> • Minimum diploma in Engineering (Maritime, Mechanical etc related field)

	<ul style="list-style-type: none"> • Minimum 05 years of experience in relevant field
3. Refrigeration Engineer	<ul style="list-style-type: none"> • Minimum diploma in Engineering (Refrigeration, Mechanical etc related field) • Minimum 05 years of experience in relevant field

1.6 Duration

The successful party must be available to commence the services in April 2022. Estimated duration to complete this assignment for each phase is 12 Calendar Months

The consultant is required to submit and approve a work schedule within 5 working days of signing the contract. The work schedule should include all the necessary milestones.

1.7 Evaluation

Criteria, sub-criteria, and point system for the evaluation of the Full Technical Proposals:

	<u>Points</u>
i) Specific experience of the Consultant (as a firm) relevant to the Assignment:	[20]

The experience of the firm in Naval Architecture.

(ii) Key Experts’ qualifications and competence for the Assignment:	[80]
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[Notes to Consultant: each position number corresponds to the same for the Key Experts in Form TECH-6 to be prepared by the Consultant]

<i>a) Position K-1: Naval Architect</i>	<i>50</i>
<i>b) Position K-2: Marine Engineer</i>	<i>20</i>
<i>c) Position K-3: Refrigeration Engineer</i>	<i>10</i>

The number of points to be assigned to each of the above positions shall be determined considering the following three sub-criteria and relevant percentage weights:

1) General qualifications (general education, training, and experience): 30%

2) Adequacy for the Assignment (relevant education, training, experience in the sector/similar assignments) 70%

Total weight: 100%

**Note: A draft proposal providing further details on the evaluation of key experts are included in Annex 3.*

Total points:	[100]
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Selection will be made based on Consultant’s Qualification-Bases Selection method.

ANNEX 1: Key Expert Evaluation

KEY EXPERT EVALUTION (DRAFT)

#		Percentage	Naval Architect	Marine Engineer	Refrigeration Engineer
1	Education				
1.1	Meets Minimum Requirement	30%	<i>Masters Degree</i>	<i>Diploma</i>	<i>Diploma</i>
	Sub-Total	30%			
2	Experience				
2.1	Meets Minimum Requirement (evaluated in terms of years of experience)	70%	<i>07 years work experience</i>	<i>05 years work experience</i>	<i>05 years work experience</i>
	Sub-Total	70%			
	Grand Total	100%			
	Total Allocated for Key Expert Section	80%	Score will be converted to 80%		

ANNEX 2: CURRICULUM VITAE (CV)

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Country of Citizenship/Residence	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
[e.g., May 2005-present]	[e.g., Ministry of, advisor/consultant to... For references: Tel...../e-mail.....; Mr. Hbbbb, deputy minister]		

Membership in Professional Associations and Publications:

Language Skills (indicate only languages in which you can work): _____

ANNEX 3: Firms Experience

A brief description of the Consultant’s organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant’s role/involvement.

1. List only previous similar assignments successfully completed in the past 15 years (from 2005 onwards). Chronologically
2. List only those assignments for which the Consultant was legally contracted by the Client as a company or was one of the joint venture members. Assignments completed by the Consultant’s individual experts working privately or through other consulting firms cannot be claimed as the relevant experience of the Consultant, or that of the Consultant’s partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. Work completion letters should be submitted as supporting evidence for the most relevant assignments. The Consultant should also be prepared to substantiate the claimed experience by presenting copies of any other relevant documents and references, if so, requested by the Client.

Durati on	Assignment name/& brief description of main deliverables/out puts	Type of Assignme nt	Name of Client & Country of Assignment	Approx. Contract value (in US\$ / MVR equivalent)/ Amount paid to your firm	Role on the Assignment
{e.g., Jan.20 12– Apr.20 13}	{e.g., Concept Design of XXXXXXX}	Residenti al	{e.g., Ministry of, country}	{e.g., US\$1 mill/US\$0.5 mill}	{e.g., Lead partner in a JV A&B&C}
{e.g., Jan- May 2018}	{e.g., Detailed Design of XXXXXX}	Resort / Hotel	{e.g., municipality of....., country}	{e.g., US\$0.2 mil/US\$0.2 mil}	{e.g., sole Consultant}

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Certification:

We, the undersigned, certify that to the best of my knowledge and belief, the information provided in this section correctly describes the firm's qualifications, and our experience. we understand that any misstatement or misrepresentation described herein may lead to disqualification of the firm or dismissal by the Client.

Name of authorized

Signature

Date

(the same who signs the Proposal)