



# **TERMS OF REFERENCE**

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**BUILDING & DELIVERY OF 45FT FIBERGLASS DHOANI**

## **1. BACKGROUND**

Agro National Corporation (AgroNat) was formed 21<sup>st</sup> 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.

AgroNat intends to hire a firm for construction, delivery, and testing of AgroNat vessel.

## **2. SCOPE OF SERVICES AND EXPECTED DELIVERABLES**

- i. Construction of vessel as per the design and specification provided and agreed.
- ii. Supply of necessary documents required for vessel registration.
- iii. 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.

## **3. FACILITATE IN MONITORING**

The firm is expected to work very closely with AgroNat in all projects related matters and will report directly to the Head of Business Development Department. The firm shall assist AgroNat and its technical consultants during routine monitoring of boat building work.

## **4. QUOTATION**

The quotation should have break down price for,

- Mould
- Hull construction

- Other boat equipment and accessories

## 5. MARKING CRITERIA

| # | DETAILS                                   | MARKS |
|---|---|-------|
| 1 | Price                                     | 40    |
| 2 | Duration                                  | 5     |
| 3 | Experience                                | 10    |
| 4 | Warranty                                  | 05    |
| 5 | Technical Evaluation (Building Materials) | 35    |
| 6 | Financial Capacity                        | 05    |

### 5.1 Price (40% of the Total score)

The highest score shall be awarded to the bid with the lowest bid price. For the remaining bids, points will be given to using the formula below:

$$\text{Price Score} = \frac{\text{Lowest proposed total price from among the bids received}}{\text{Particular Bidder's proposed total price}} \times 40\%$$

### 5.2 Duration (5% of the Total score)

The maximum points allocated under this criterion will be awarded to the bidder with the lowest proposed Delivery Period, and the remaining bidders will be awarded points on a pro rata basis in descending order.

The formula thus used for the computation of the score is as follows:

Delivery Period Score:

$$\frac{\text{Lowest Proposed delivery period from among the bids received}}{\text{Particular Bidder's proposed delivery period}} \times 5\%$$

### 5.3 Experience (10% of the Total score)

Experience will be considered for the works completed in the last 10 years related to boat building, boat repairs, and supplying boats.

Work experience letter should be in the contractor's letterhead with the contractor's stamp and signature. Marks will be given to maximum 5 experience letters. Each letter will carry 2 marks.

### 5.4 Warranty (5% of the Total score)

Hull (5 Marks)

$$\frac{\text{Particular bidders warranty on hull}}{\text{Highest Warranty proposed on hull}} \times 5\%$$

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### 5.5. TECHNICAL EVALUATION CRITERIA

| # | DETAILS  | MARKS |
|---|--|-------|
| 1 | Fiber resin mechanical properties / quality (data sheet to be submitted) | 50    |
| 2 | Fiber gelcoat properties (data sheet to be submitted)                    | 30    |

|   |  |    |
|---|--|----|
| 3 | Scantling (Scantling design to be submitted) | 20 |
|---|--|----|

## 5.6 Financial Capacity

Points for financial capacity will only be awarded to those bidders who had submitted bank statement of last month (March 2023) .

Points will be given in the following manner;

| Bank Balance compared to percentage (%) of total Bid price | Points awarded |
|--|----------------|
| Greater than 2% of Bank Balance of Proposed bid amount     | 1 Point        |
| Greater than 4% of Bank Balance of Proposed bid amount     | 2 Point        |
| Greater than 6% of Bank Balance of Proposed bid amount     | 3 Point        |
| Greater than 8% of Bank Balance of Proposed bid amount     | 4 Point        |
| Greater than 10% of Bank Balance of Proposed bid amount    | 5 Points       |

Attach copies of the audited financial statements of the last 2 financial years.

Audited financial statements. (Certified copies of audited balance sheets, income statements, and cashflow statements for most recent 2 years to be enclosed.)

## 6. PAYMENT TERMS

| # | DESCRIPTION  | PERCENTAGE |
|---|--|------------|
| 1 | Advance Payment  | 15         |
| 2 | Payment 2  | 15         |
| 3 | Payment 3  | 15         |
| 4 | Payment 4 – After completion and handover of the vessel  | 50         |
| 5 | Payment 5 – Retention (up to the end of warranty period) | 5          |

\* Payment 2 & 3 will be date shall be assigned, depending on the duration proposed by the bidder.

## ANNEX-1

### TECHNICAL SPECIFICATIONS FOR 45FT VESSEL

| DESCRIPTION               | SIZE/MATERIALS | UOM    |
|---------------------------|----------------|--------|
| Hull Materials            | FIBERGLASS     |        |
| Length Overall            | 13.716         | M      |
| Beam Max                  | 4.449          | M      |
| Length On DWL             | 11.820         | M      |
| Depth at Mid Ship         | 1.957          | M      |
| Draft                     | 1.053          | M      |
| Displacement Light        | 14             | TONS   |
| Engine HP                 | 150-200        | HP     |
| Engine Displacement (Max) | 6.5            | LITERS |
| Fuel Capacity             | 1000           | LITERS |
| Fresh Water Capacity      | 400            | LITERS |

#### 45FT VESSEL WITH STANDARD SPECIFICATION INCLUDING THE FOLLOWING FEATURES:

- White gelcoat finishing on hull & deck exteriors, FRP hardtop, laminate-glass front & side windscreens as per shared drawings
- Hydraulic steering system.
- Wiring should be DC tin coated AWG cables.
- Fiberglass mat thickness of the vessel (As per scantling).
- AgroNat logo and name to be in gelcoat.
- Non-skid deck to be in gelcoat.
- Cargo storage compartments underneath deck with 2 NOS with access hatches.
- Cabin with fiberglass gelcoat finished dashboard and cabinets (dashboard fitted with COMPASS).
- Standard toilet with marine electric toilet, wash basin, showerhead, towel holder.
- Electrical wiring (with DC 200AH house battery x 1, battery switch, engine room blower, cabin and deck lights, switches, 12G switch panel, USB charger, navigation light set & search light
- Engine foundation, engine's seawater-line, fuel and water tank connections and fittings.
- Details of fibreglass materials (Resin and Gelcoat) to be used for building must be provided by the bidder at time of bid submission.

## VESSEL EQUIPMENTS AND ACCESSORIES

| DETAILS  | UOM | QTY |
|--|-----|-----|
| Maintenance free Battery 200AMP (house & engine start battery) | NOS | 1   |
| Battery switch (On/Off)  | NOS | 1   |
| Blige pump 2000GPH 12V with float switch                       | NOS | 1   |
| Bilge alarm system 12V   | NOS | 1   |
| Fresh water pump 26LPM 12V                                     | NOS | 1   |
| Engine exhaust blower  | NOS | 1   |
| Marine electric toilet 12V                                     | NOS | 1   |
| Engine room light 12V  | NOS | 2   |
| Cabin and Cargo compartment lights 12V                         | NOS | 8   |
| USB charger port dual  | NOS | 1   |
| Search light 12V (remote control type)                         | NOS | 1   |
| Navigation light set 12V                                       | NOS | 1   |
| Marine compass   | NOS | 1   |
| Captain seat   | NOS | 1   |
| Steering System  | NOS | 1   |

### DOCUMENTATION

- All documents required for vessel registration.

### WARRANTY FOR

- Hull

### REQUIRED SPECIFICATIONS FOR RESIN

Bidders must submit product datasheets specifying mechanical properties with test methods, nature of chemical, applications or principal properties and certificate of approval from an established classification society for boat building.

#### Required specifications and mechanical properties.

| Property                    | Value                |
|-----------------------------|----------------------|
| Tensile Strength            | 90 MPa               |
| Tensile E-modulus           | 3900 MPa             |
| Elongation at break         | 4.6 %                |
| Flexural Strength           | 133 MPa              |
| Flexural E-modulus          | 4000 MPa             |
| Impact res-unnotched        | 27 KJ/m <sup>2</sup> |
| Heat Deflection Temperature | 87 °C                |
| Hardness (barcol)           | >40                  |

### REQUIRED SPECIFICATIONS FOR GELCOAT

Bidders must submit product datasheets specifying characteristics of cured product, water absorption of cured product, specifications of base gelcoat, principal properties, and manufacturer recommended applications and certificate of approval from an established classification society for boat building. Bidders shall make sure the datasheets mention test methods.

#### Required specifications.

| Characteristics   | Typical Value for Brush Application (Base Gelcoat) | Typical Value for Brush Application (Base Gelcoat) |
|---|--|--|
| Barcol Hardness   | 40-45  | 45-45  |
| Tensile Strength  | 50±5 MPa   | 50±5 MPa   |
| Tensile Modulus   | 3650±150 MPa                                       | 3800±150 MPa                                       |
| Elongation at Break   | ≥2.5   | ≥2.5   |
| Flexural Strength   | 95±5 MPa   | 85±5 MPa   |
| Flexural Modulus  | 3300±150 MPa                                       | 3600±150 MPa                                       |
| HDT 66 psi  | ≥95 °C   | ≥95 °C   |
| Water absorption of cured product at 40°C after 16hrs (RINA/LRS approved) | <60 mg   | < mg   |



# ANNEX 2

## DRAWINGS

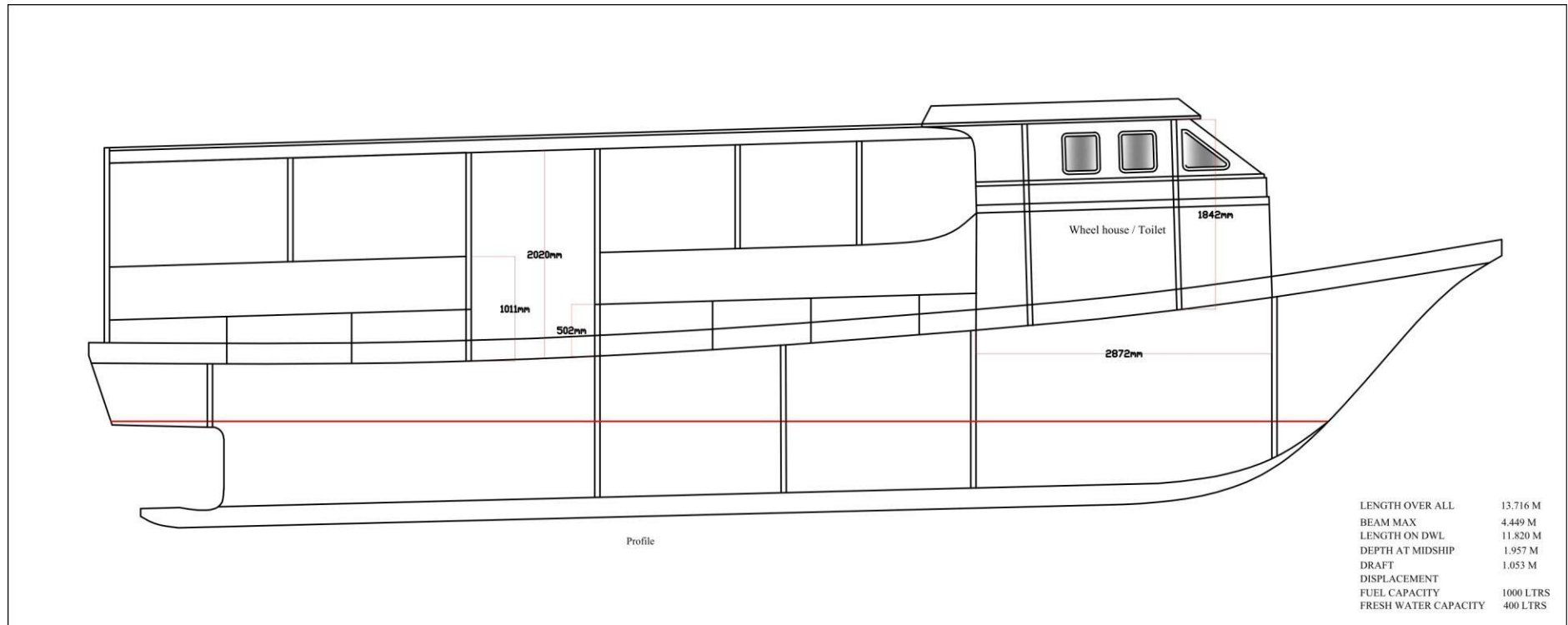
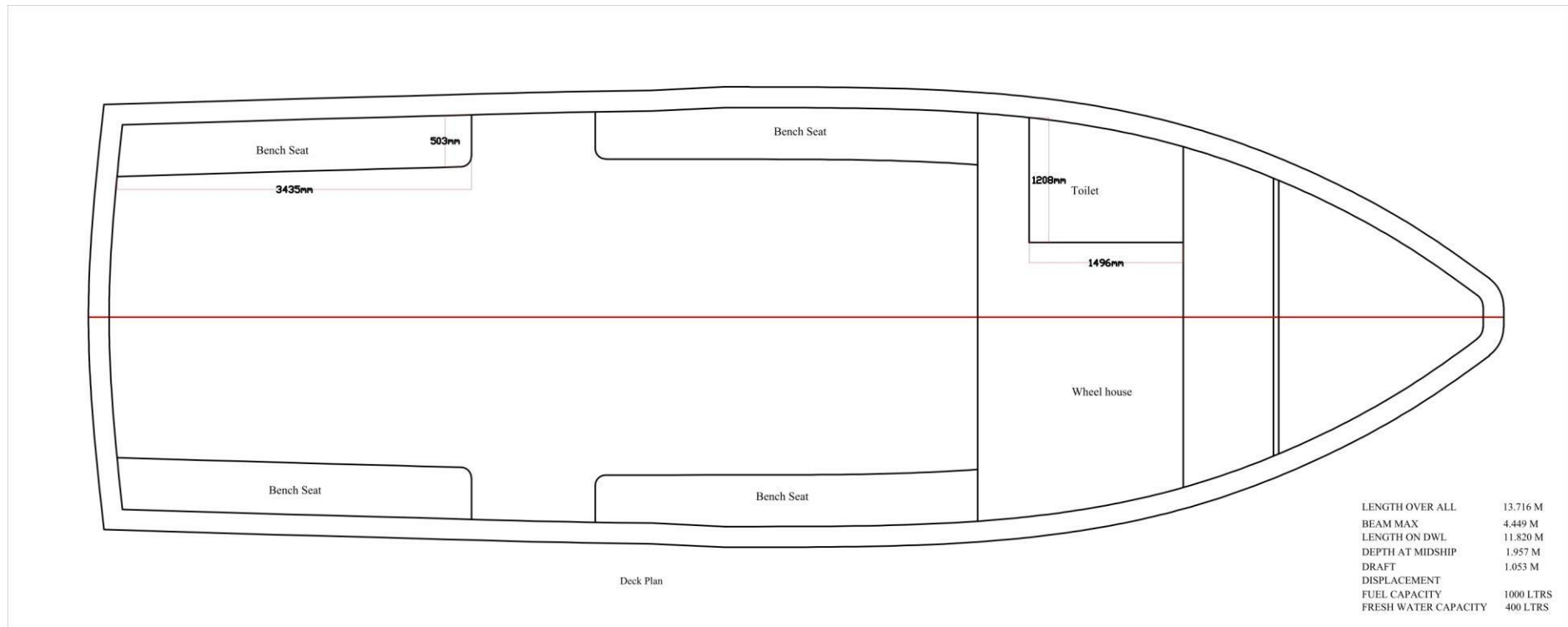
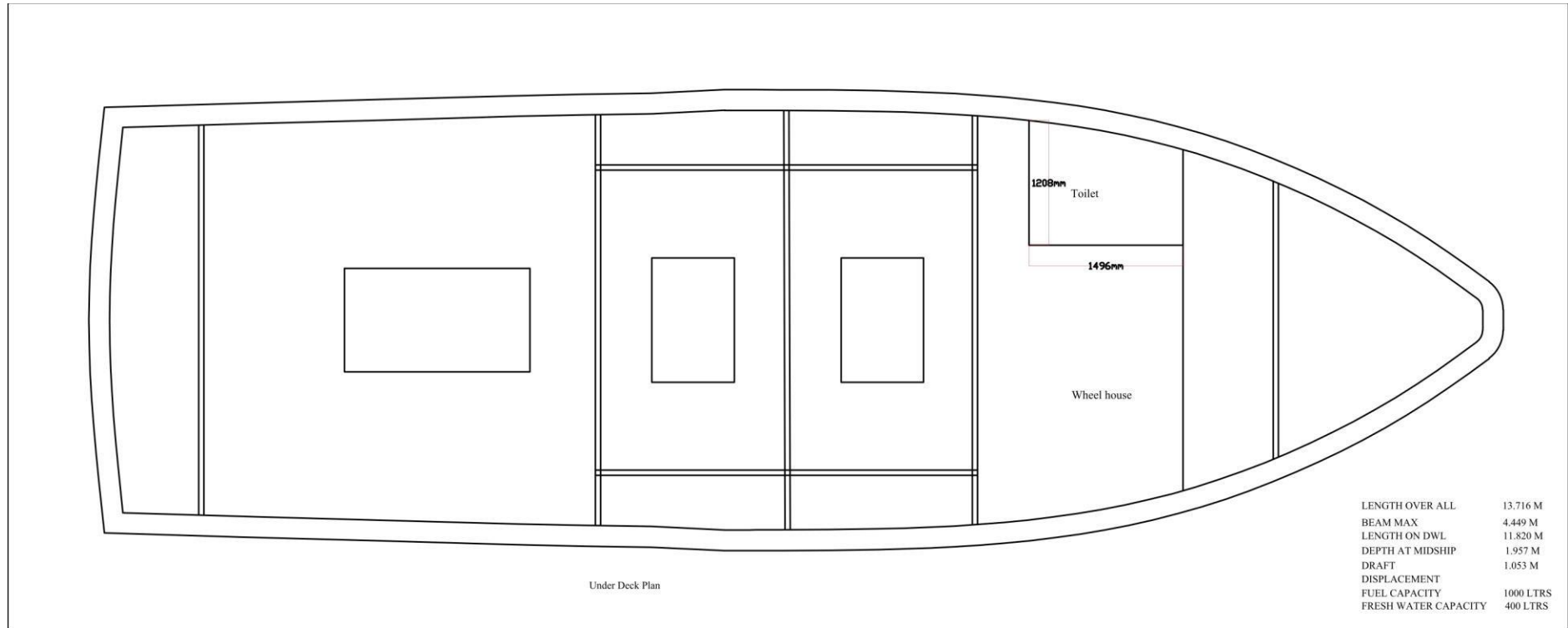


Figure 1: General Arrangement (Profile View)



**Figure 2: General Arrangement (Plan View)**



**Figure 3: General Arrangement (Plan View)**

