

## Detailed Technical Specifications and Standards

**Important notes:**

1. The Equipment should be suitable for tropical use and now available in Sri Lanka.
2. Bidders should clearly state the actual specification pertaining to the offer in respect of each of the items described in the specifications.
3. Deviations from the specifications if any should be stated clearly.
4. Manufacturers printed specifications should be annexed to the offer, photo copies are not considered for evaluation.
5. Bidders are advocated to read Information and instructions to Bidders and Terms and Conditions of Procurement Method" attached herewith, before furnishing this document

### Lot-01-Technical Specification of Amphibious Weed Cutting Machine (Qty-02 Nos)

Item	Description	Minimum Specification Required	Bidder Response		Remarks Mark (X) where Necessary
			Yes	No	
<b>1.0</b>	<b>General</b>				
1.1	Make / Brand	Please specify			
1.2	Model	Please specify			
1.3	Country of Origin	Please specify			
1.4	Country of Manufacture	Please specify			
1.5	Year of Manufacture	2019			
1.6	Machine should be brand new & unused.				
1.7	Machine should be manufacturer's standard production.				

1.8	Machine should be latest design.			
1.9	Must be one man controlled.			
1.10	The machine and tools shall be hydraulically operated , capable to cut and remove plants from water, as well as the removal of floating trash and comparable items. Additionally, this machinery shall be fully amphibious to work in shallow areas and make transportation easy. travelling overland by means of hydraulically driven tracks which are fitted around the pontoon Furthermore the machine shall be designed to carryout excavation work, Dredging and hammering.			
1.11	The manufacturer shall be certified with ISO 9001 and ISO 14001, or equivalent certifications. (Please provide the proof)			
1.12	The machine shall suite the environmental conditions of Sri Lanka (tropical condition)			
1.13	Tracks for driving in shallow waters and on muddy ground			
1.14	Weight without working tools not more than 3,000 kg			
1.15	Rake shall be foldable			
<b>2.0</b>	<b>Engine</b>			
2.1	Four cylinder Diesel powered and turbocharged.			
2.2	Power at rated rpm should be 40-60 kw.			
2.3	Electrical start required			
2.4	Water cooled required			
2.5	Comply with emission regulation tier 3 / Euro 3 or above			

2.6	Lockable fuel tank with tank capacity as machine shall be operated minimum 8 hrs			
2.7	Engine shall be Installed in a lockable compartment.			
2.8	Engine shall provide automatic cutoff in the event of overheating			
2.9	Oil drain pan under the engine shall provide			
<b>3.0</b>	<b>Overall Dimension</b>			
3.1	Maximum Transport length shall be not more than 4.8 m.			
3.2	Maximum Transport width shall be not more than 2.5 m.			
3.3	Maximum Transport height shall be not more than 2.5 m.			
3.4	Maximum draft unloaded shall be less than 1.0 m.			
<b>4.0</b>	<b>Working Boom</b>			
4.1	Two Part folding Arm shall be provided			
4.2	Length of working boom shall be not less than 2.0 m.-Maximum reach			
4.3	Minimum swivel range of 270°.			
4.4	Lifting capacity not less than 380 kg at max reach.			
4.5	Work tools shall be easily exchangeable.			
4.6	Reach of boom with backhoe bucket- Not less than 1.6 m at water surface .			
4.7	Maximum unloading height shall not be less than 1.8 meter above water surface.			
4.8	Dredging depth with concentric Auger not less than 1.8m			

<b>5.0</b>	<b>Navigation</b>			
<b>5.1</b>	<b><i>In water</i></b>			
5.1.1	Navigation of the water should be by means of powerful two separate propulsion drive units and with proper steering ability.			
5.1.5	variable speed regulation shall provide			
5.1.6	Minimum forward cruise speed not less than 5 km/h.			
5.1.7	Minimum backwards cruise speed not less than 3 km/h.			
5.1.8	Minimum forward working speed not less than 4 km/h.			
<b>5.2</b>	<b><i>On land</i></b>			
5.2.1	Reinforced rubber or any other strength and material suitable for travelling in muddy and land condition, Crawler drivers with variable speed control with track width not less than 30cm			
5.2.2	Land speed not less than 5 km/h.			
5.2.3	Self loading and unloading from trailer required			
5.2.4	Ground pressure shall not exceed 0.14 Kg/ cm <sup>2</sup>			
5.2.5	Minimum ground clearance shall be not less than 35cm.			
<b>6.0</b>	<b>Operator Cabin</b>			
6.1	360-degree visibility on work unit required			
6.2	Shall provide sun and rain protection for the operator.			
6.3	Operating levers shall be easy to reach and installed in an ergonomic order.			
6.4	Roll-over bar for driver's safety required			

6.5	Better overview for cutting and unloading process			
6.6	Lockable aluminum cover to prevent vandalism damages.			
<b>7.0</b>	<b>Hull</b>			
7.1	The hull shall be made of high quality seawater resistant aluminium			
7.2	Hull shall be Aluminum or steel with proper surface preparation and painting as per ISO 1M3 or equivalent, mill certificate shall be attached.			
7.3	Length-not less than 3.7m			
7.4	Width -not less than 1.2m			
7.5	Height-not less than 0.9m			
7.6	The machine shall be fully balanced without additional pontoons or water ballast tanks.			
7.7	The hull shall be made in mono-hull design or catamaran			
7.8	Engine and hydraulic pump shall be mounted in a enclosed protective environment			
<b>8.0</b>	<b>Hydraulic System</b>			
8.1	The hydraulic components shall be reputable brands. (Please specify brand)			
8.2	Lockable Hydraulic tank with not less than 70 litre capacity.			
8.3	Hydraulic operating pressure shall not be less than 260 bar.			
8.4	All functions shall be fully hydraulic.			

9.0	<b>Electric system</b>				
9.1	Secured Sealed Connectors to protect from water and dust. (Water proof)				
9.2	12V Electrical system required				
10	<b>Instrument panel should be indicate</b>	low oil pressure			
		High engine temperature			
		Hour meter			
11	<b>Attachments</b>				
11.1	Quick Coupler required				
11.2	Backhoe Bucket working width not less than 0.6m and capacity not less than 80 litres				
11.3	Clearing Rake-To remove vegetation and trash-working width not less than 3.5m				
11.4	Hydraulically operated self sharpening T-Cutter Bar cutting width not less than 2.10 m and cutting depth not less than 1.40m				
11.5	Hydraulically operated self sharpening Side cutter bar required				
11.6	Aluminium mowing and collecting basket-frame height not less than 30cm				
11.7	Cutting /Collecting width not less than 1.90m				
11.7	Suction pump with agitator- capacity 250m <sup>3</sup> /hr or higher				
11.8	Total weight-not more than 4.5 Ton				
12	<b>Following additional parts shall be provided with the machine</b>				
12.1	02 sets of cutting knives				
12.2	Three sets of filter elements(air, fuel, oil and hydraulic)				
12.3	Three nos. of life jackets				

<b>13.0</b>	<b>Tools</b>			
13.1	All standard tools, including heavy duty grease gun, day to day maintenance tool kit should be provided with lockable and water proof tool box. (All tools should be branded)			
<b>14</b>	<b>Manuals</b>			
14.1	Spare parts manual for whole unit should be provided (Original)			
14.2	O & M manual for whole unit should be provided (Original)			
14.3	Workshop manual for whole unit should be provided (Original)			
14.4	All manual should be in English (original)			
<b>16.0</b>	<b>Warranty</b>			
16.1	The successful bidder should provide the Comprehensive warranty for equipment for a period of 24 months or 1,000 Meter Hours, whichever occurs first from the date of receipt on good working condition by the purchaser. All defects on manufacturer found in the equipment during the warranty period should be made good such defects by the supplier at his own cost. During the warranty period, the recommended free services should be done by the supplier at own expenses. (Labor Free)			
<b>17</b>	<b>General</b>			
17.1	The bidder shall provide at least Two days on site training for operation and maintenance.			
17.2	Supplier shall indicate or display "CRIP-2019" by steel name plate attached to the machine and relevant accessories			

We certify that the above particulars are correct and we agree to supply same if we are awarded the Contract.

Bidders Name : .....  
Authorized Signature : .....  
Date : .....

### Lot 02- Technical Specification of Amphibious Weed Harvester (Qty-02 Nos)

Item	Description	Minimum Specification Required	Bidder Response		Remarks
			Mark (X) where Necessary	Yes No	
1.0	<b>General</b>				
1.1	Make / Brand	Please specify			
1.2	Model	Please specify			
1.3	Country of Origin	Please specify			
1.4	Country of Manufacture	Please specify			
1.5	Year of Manufacture	2019			
1.6	Machine should be brand new & unused.				
1.7	Machine should be manufacturer's standard production.				
1.8	Machine should be latest design.				
1.9	Must be one man controlled.				
1.10	The powerful machine for cutting and collecting of water plants such as water hyacinth, Water Lettuce, water spinach, etc and garbage, wood and other impurities in small and medium scale reservoirs/lakes in any part of Sri Lanka. Self discharging without crane, travels from the lorry directly into the water. Front face U shaped cutter bar to cut the water planta and large loading capacity through effective material drainage and pressure				



1.11	The bidder and the manufacturer shall be certified with ISO 9001 and ISO 14001, or equivalent certifications. (Please provide proof)		
1.12	The machine shall suite the environmental conditions of Sri Lanka (tropical condition)		
1.13	Weight without working tools not more than 9500 kg		
1.14	Ability to work in shallow waters		
1.15	Payload not less than 5.0m <sup>3</sup>		
1.16	Discharge height from the waterline-not less than 1.8m		
1.17	Discharge width from boat hull-not less than 2.0m		
1.18	Mowing depth-not less than 1.50 m		
1.19	All signs and instructions in the equipment shall be in English		
<b>2.0</b>	<b>Engine</b>		
2.1	Four cylinder Diesel powered and turbocharged required		
2.2	Power at rated rpm -Not less than 60kw required		
2.3	Intake system-turbo charged required		
2.4	Electrical start required		

2.5	Water cooled required			
2.6	Comply with emission regulation tier 3 / Euro 3 or above			
2.7	Lockable fuel tank with tank capacity as machine shall be operated minimum 8 hrs			
2.8	Primary and secondary filters with water separator			
2.9	Engine shall be Installed in a lockable compartment.			
2.10	Engine shall provide automatic cutoff in the event of overheating			
2.11	Oil drain pan under the engine required			
<b>3.0</b>	<b>Overall Dimension</b>			
3.1	Maximum Transport length shall be not more than 12.5m.			
3.2	Maximum Transport width shall be not more than 3.0 m.			
3.3	Maximum Transport height shall be not more than 3.0 m.			
3.4	Maximum draft unloaded shall be less than 1.0 m.			
<b>4.0</b>	<b>Navigation</b>			
<b>4.1</b>	<b>In water</b>			
4.1.1	Hydraulically operated two augers for propulsion and direct steering in water required			
4.1.2	Special cutting knife at the Auger to cut weed for the uninterrupted of rotation required			
4.1.3	Side and Bottom protection of Augers required			
4.1.4	Auger drive can be rotated and tilted in all directions			

4.1.5	variable speed control at least 0-5 km/hr.		
4.1.6	Minimum forward cruise speed not less than 5 km/h.		
4.1.7	Minimum backwards cruise speed not less than 3 km/h.		
4.1.8	Minimum forward working speed not less than 4 km/h.		
4.1.9	Augers and rubber tracks shall be useable at the same time.		
<b>4.2</b>	<b><i>On land</i></b>		
4.2.1	Reinforced rubber Crawler drivers with variable speed control with track width not less than 30cm		
4.2.2	Land speed not less than 2.5 km/h.		
4.2.3	Self loading and unloading from trailer.		
4.2.4	Ground pressure shall be between 1.0 Kg/ cm <sup>2</sup> -1.2Kg/ cm <sup>2</sup>		
4.2.5	Minimum ground clearance shall be not less than 35cm.		
<b>5.0</b>	<b>Operator Cabin</b>		
5.1	The manufacturers standard walk through design with one door. At least One shall be provided		
5.2	Fully enclosed, lockable, fully glazed and weatherproof construction required		
5.3	360-degree visibility on work unit shall be provided		
5.4	Shall provide sun and rain protection for the operator.		
5.5	Operating levers shall be easy to reach and installed in an ergonomic order.		

5.6	Roll-over bar for driver's safety required			
5.7	Better overview for cutting and unloading process required			
<b>6.0</b>	<b>Hull</b>			
6.1	Marine grade Aluminum or steel with proper surface preparation and painting as per ISO 1M3 or equivalent. mill certificate shall be attached.			
6.2	The hull shall be sand blasted and painted with multiple layers of marine epoxy paint.			
6.3	The machine shall be fully balanced without additional pontoons or water ballast tanks.			
6.4	Length not more than 6.2m			
6.5	Width not more than 3.1m			
6.6	Height not more than 1.1m			
6.7	Engine and hydraulic pump shall be mounted inside the hull			
6.8	At least four anodes shall be mounted on the hull for protection against corrosion and for long lifetime			
6.9	Easy to access to engine room and enough space for maintenance required			
<b>7.0</b>	<b>Hydraulic System</b>			
7.1	The hydraulic components shall be reputable brands. (Please specify brand)			

7.2	Lockable Hydraulic tank with not less than 80 litre capacity.			
7.3	Hydraulic operating pressure shall not be less than 260 bar.			
7.4	All functions shall be fully hydraulic.			
<b>8.0</b>	<b>Electric system</b>			
8.1	Secured Sealed Connectors to protect from water and dust. (Water proof) required			
8.2	Heavy Duty starter and Alternator required			
8.3	12V and 90 Ah Battery required			
<b>9</b>	<b>Instrument panel should be indicate</b>	low oil pressure		
		High engine temperature		
		Hour meter		
<b>10</b>	<b>Harvester</b>			
10.1	U-shaped double -knife. mowing depth not less than 1.40m. mowing width not less than 2.0m			
10.2	Harvesting Depth not less than 1.5m			
10.3	Hydraulically operated with sensors and indicators for monitoring required			
10.4	U cutting knives cut the aquatic weed on the bottom and both sides, required			
10.7	protection mechanism of blades against submerged hard materials required			
<b>11</b>	<b>Conveyer</b>			

11.1	Conveyor belts shall be high strength glass-fibre reinforced plastic rods and are mantled with rubber to get the stability			
11.2	Front conveyor collect the aquatic weed and bring it to the storage conveyor belt			
11.3	Load conveyor equipped with special removable double cross bar required			
11.4	Maximum discharged height not less than 1.8m			
11.5	Width of load/unload conveyor not less than 1.8m			
11.7	Cutting depth adjustable with the front conveyor belt required			
11.8	Unloading within 15-20 seconds			
11.9	Production rate not less than 10m <sup>2</sup> /hr			
12	<b>Accessories</b>			
12.1	The machine shall be equipped with			
12.2	Service hour meter required			
12.3	Electric windscreen wipers required			
12.4	working lights. required			
12.5	Door locks. required			
12.6	Travel alarm required			
12.7	Bilge pump required			
12.8	Electric horn required			
12.9	Rear view mirrors (RH, LH, Cabin) required			
13	<b>Following additional parts shall be provided with the machine</b>			
13.1	Three sets of filter elements(air, fuel, oil and hydraulic)			

13.2	Three Nos of life jackets			
13.4	02 sets of cutting knives			
<b>14.0</b>	<b>Tools</b>			
14.1	All standard tools, including heavy duty grease gun, day to day maintenance tool kit should be provided with lockable and waterproof tool box. (All tools should be branded)			
<b>15.0</b>	<b>Manuals</b>			
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<b>16.0</b>	<b>Warranty</b>			
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<b>17.0</b>	<b>General</b>			
17.1	The bidder shall provide at least five days on site training for operation and maintenance.			
17.2	Supplier shall indicate or display "CRIP-2019" on the machine and relevant accessories.			

We certify that the above particulars are correct and we agree to supply same if we are awarded the Contract.

Bidders Name : .....

Authorized Signature : .....

Date .....  
*[insert date]*

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