

Section II: Schedule of Requirements

A. Summary of Requirements

This ITB is comprised of the following requirements:

- Combine Harvester with spareparts- Quantity 2

B. Technical specifications for Goods

No	UNOPS minimum technical requirements	
	Item Name: Combine Harvester	
1	Manufacturer Information	Brand: to be specified by the bidder
		Model: to be specified by the bidder
		Manufacturer : to be specified by the bidder
		Country of origin : to be specified by the bidder
		Year of manufacture : to be specified by the bidder
		Link to the proposed model: The participant must provide a link to the proposed model on the Manufacturer's website in English.
2	General Operating Conditions	The Self-propelled combine harvester (wheeled type) shall be suitable for harvesting various grain crops under harsh field conditions (sunny, dusty, windy environments).
		Compatible with Ethiopian climatic and topographic conditions.
		Operating temperature: 0–55°C
		Operating altitude: 365–2500 masl
		Suitable for humid to arid climatic conditions- Relative humidity: 40–90%
		Suitable for light, abrasive, alluvial, and heavy clay soils
		Suitable for operation on uneven terrain (equipped with self-leveling (hillside stability) technology). OEM slope operation certification compliance.

3	Machine Performance	Multi-crop (wheat, barley, maize, and pulse crops) harvesting capability using Interchangeable Headers.
		Performs cutting operation
		Performs feeding operation
		Performs threshing operation
		Performs separation operation
		Performs cleaning operation
		Performs unloading operation
		Field efficiency (75-85%)
		Cleaning efficiency $\geq 97\%$
		Total grain loss $\leq 3.5\%$
		Total grain breakage loss $< 3\%$
		Grain Yield Output/Throughput capacity (8 – 12 tonnes/hour)
		Suitable for grain moisture content 12–13%
		The machine shall minimize excessive chopping and damage to straw during harvesting operations.
		The machine shall provide detailed breakdown of information on grain loss (grain loss monitoring system)
4	Header/Cutting Unit	The reel speed shall be adjustable and shall operate at 25%–50% faster than ground speed.
		Serrated knife requirement with case-hardened edge
		Sealed bearings OR dust-protected lubrication system
		Dividers explicitly stated to assist lodged/entangled crop handling
		Strong corrosion protection
		Effective cutting width: 4.0–6.0 m
		Cutting frequency ≥ 1050 cuts/min
		Reel/pick-up tines provided
		Crop dividers provided
		Cutter bar provided
		Adjustable reel position
		Adjustable reel speed
		Auto Header Height Control (Hydraulic Floatation)

		<p>Cutting elements comply with ISO equivalent</p> <p>The cutting section shall be protected against corrosion by anti-corrosive varnish or an equivalent protective coating suitable for agricultural operating conditions.</p>
5	Feeding System	<p>Explicit inclusion of front (infeed) beater</p> <p>Explicit requirement for continuous feeding stability under all crop conditions</p> <p>Feeder/conveyor system provided</p> <p>Feed chain provided</p> <p>Suitable for continuous crop feeding</p>
6	Threshing Drum	<p>Drum length: 2,600mm –3,400 mm</p> <p>Drum diameter: 610mm–765 mm</p> <p>Drum speed: 250 rpm–1200 rpm</p> <p>Adjustable concave clearance</p> <p>Threshing elements shall be manufactured from alloy steel or heat-treated carbon steel (AISI 1040–AISI 1055 or equivalent).</p> <p>The threshing system shall be of multi-crop capability suitable for different grain types. (wheat, barley, maize, and pulse crops). Adjustable threshing mechanism capability</p> <p>Threshing pattern; Axial-Flow (Rotary) System</p> <p>The concave shall be adjustable at both front and rear to regulate clearance with the rotor.</p> <p>Concave wrap angle: minimum 105°–125°, and heavy-duty rasp bars ; minimum 6–8 bars</p> <p>The threshing system shall include a rare discharge beater or equivalent technology.</p> <p>Stone trap provided</p>
7	Separation and Cleaning System	<p>Adjustable fan speed</p> <p>Sieving area: 3.0–4.8 m²</p> <p>Easily removable sieves/sieves need to be provided for target crops as per description (wheat, barley, maize, and pulse crops). Variable cleaning system</p> <p>The cleaning system shall be based on a combined aerodynamic and mechanical separation principle.</p>

		The cleaning system shall include a tailings auger for recirculation of unclean grain.
		The cleaning system shall ensure efficient separation using air blast and screening mechanisms.
		Easily cleanable sieves
8	Straw Handling System	The combine harvester shall be equipped with one of the following straw handling systems: straw spreader, straw chopper-spreader, or straw ejector system. The selected straw handling system shall ensure uniform distribution of straw across the working width
		System shall ensure uniform distribution of straw depending on selected option
9	Grain Handling System	Grain auger provided
		The grain tank shall be designed to prevent grain bridging during unloading and storage.
		The grain tank shall be equipped with external steps and handrails for safe access and maintenance.
		Grain elevator provided
		Grain collector provided
		Grain tank capacity ≥ 5000 litres
		Grain Unloading rate (L/min); 4200-5100
		Hydraulic unloading system provided
		90° auger swivel or equivalent provided
10	Engine and Fuel System	Diesel engine
		Engine power ≥ 200 HP
		Specific fuel consumption at rated engine speed: ≤ 220 g/kWh
		Engine emissions compliance: UN/ECE R96 Stage IIIA, EPA Tier 3, or equivalent international off-road standard.
		6-cylinder engine, wet type liner
		Aspiration: Turbocharged air-to-air intercooler
		Rated speed: 1900–2200 rpm
		Direct fuel injection system
		Water-cooled engine
		Tropicalized radiator fitted
		Fuel tank capacity ≥ 250 litres
		Suitable for extended field operation

11	Transmission and Drive	Hydrostatic or equivalent transmission
		Forward travel capability
		Reverse travel capability
		Maximum ground speed: 21- 40 km/hr, Operational ground working speed: 1.5–12.0 km/h
		Wheel type: Radial, interchangeable and suited for different soil conditions; shall fit to good load capacity, traction effective and robustness type without causing damage to the soil. One spare tyre each should be supplied with the Machine
12	Steering and Braking System	Adjustable and Power steering system
		Maximum turning radius: ≤ 7.50 m without steering brakes
		Hydrostatic actuated independent or locked together or better technology
		Parking brake: Hand lever operated and mechanically independent
		Safe operation on agricultural terrain
13	Hydraulic System	Hydraulic lifting system provided
		Hydraulic operational controls provided
		Header hydraulic lift capacity: minimum $\geq 2,500$ kg across the full lifting range
		Hydraulic pump main flow rate: minimum ≥ 60 L/min at rated engine RPM
14	Operator Cabin and Controls	Enclosed operator cabin
		Air conditioning system provided
		Dust protection provided
		Ergonomic controls
		Adjustable operator seat
		The operator cabin shall ensure low noise levels during operation (Noise level ≤ 85 dB)
		The machine shall ensure vibration reduction through proper dynamic balancing of rotating parts.
		The cabin shall maintain comfortable working conditions including temperature control suitable for prolonged operation.
15	Instruments and Monitoring	Coolant temperature gauge
		Engine oil pressure indicator
		RPM meter

		Hour meter
		Fuel gauge
		Grain loss indicator
		Grain level indicator
		GPS assist technology included
		Warning lights and alarms provided
		Display language must be English
16	Electrical System	Battery system provided
		Starter motor provided
		Alternator provided
		Voltage regulator provided
		Factory-fitted LED work lighting package for night operation: minimum 4 forward cab-mounted working lights, 2 header lights, 1 unloading auger light, and 2 rear working lights (minimum 1,500 lumens each)
17	Safety and Environmental Features	Safety guards on moving parts
		Belt guards provided
		Emergency stop system
		Belt adjustment mechanism provided
		The combine harvester shall be designed for low noise emission during operation.
		The machine shall be designed to prevent oil leakage during operation.
		The machine shall be designed to prevent fuel leakage under all operating conditions.
		Rotating parts shall be dynamically balanced to minimize vibration and ensure smooth operation.
		Engine and cooling systems 100% free of asbestos and ozone-depleting substances (ODS) in accordance with the Montreal Protocol.
		The machine shall be fitted with a Slow Moving Vehicle (SMV) emblem at the rear.
		The machine shall ensure that all exposed parts are free from sharp edges except cutting blades.
		The machine shall provide Fire extinguisher and first aid kit

18	Documentation and Training	The supplier shall provide all relevant technical documentation in English, including operator manuals, service manuals, repair/workshop manuals, and spare parts catalogues, and shall conduct operator and maintenance training for the end users upon delivery of the machine in Addis Ababa, Ethiopia.
		The operator manual shall include installation, operation, maintenance, spare parts ordering, and safety precautions.
		The supplier shall provide comprehensive on-site training for operators and maintenance personnel upon delivery.
19	Spare Parts, Tools and Accessories	Air compressor with hose provided, capable of tyre inflation and cleaning of the air cleaner, intercooler, radiator, and engine cooling system components with Integrated onboard air compressor with minimum working pressure of 8.0 bar (116 psi), minimum 10 m hose, inflator nozzle, and calibrated pressure gauge.
		Manufacturer's standard field kits, accessories and tools necessary for operation, adjustment and routine maintenance of the machine shall be provided (minimum one complete set).
		The supplier shall provide a detailed list of recommended spare parts, spare parts catalogue, and basic accessories and spare parts, in addition to those listed, should be supplied free of charge together with the machine (as part of delivery).
		After-sales service support, including availability of maintenance facilities, technical support, and spare parts, shall be provided. Bidders should provide contact details of their local authorized service provide for the after-sales support

		The supplier shall ensure the operator customization training, on-site training for operators, availability of local authorized service provider for maintenance support, workshop services, technical assistance, spare parts, and recommended lubricants/oils for the proper operation and maintenance of the machine throughout the warranty period and beyond.
21	Standards and Compliance	ES 4045:2016 compliance or equivalent
		ES ISO 262:2003 compliance or equivalent
		The combine harvester shall comply with ES ISO 4254-7:2014 or equivalent safety standards for agricultural machinery.
		The machine shall comply with applicable PAES 224.2005 or equivalent ISO material standards for components.
		ES ISO 4253: 2014 compliance or equivalent
22	Warranty and Certification	Warranty period minimum 24 months or 2000 machine hours, whichever comes first
		Replacement of defective parts free of charge
		ISO/OECD or equivalent international test certificates provided
23	Labeling & Marking	The combine harvester shall be clearly marked with manufacturer name and trademark.
		The machine shall display model designation and size code.
		The machine shall include batch or serial number identification.
		The machine shall indicate year of manufacture.
24	Weight and Dimension of combine Harvester	Weight of combine Harvester with header: Bidder to specify
		Dimension with header and chopper: Bidder to specify
		Width and height, based on recommended tire: Bidder to specify
		Height with cab: Bidder to specify
		Ground clearance: Bidder to specify

List of Spare Parts for Self Propelled Combine Harvesters (Price lists should also be attached under Form C)

No	Item Description	Unit of Measure	Quantity
1	Engine oil filter	Pcs	6
2	Fuel filter (Primary)	Pcs	6
3	Fuel filter (Secondary)	Pcs	6
4	Fuel filter (3rd / Water separator)	Pcs	6
5	Air cleaner element (Inner)	Pcs	4
6	Air cleaner element (Outer)	Pcs	4
7	Fuel cutoff solenoid	Pcs	2
8	Engine oil drain plug	Pcs	2
9	Thermostat	Pcs	2
10	Radiator cooling fan belt	Pcs	2
11	Blower fan belt (Rotary screen drive)	Pcs	2
12	Upper radiator hose	Pcs	2
13	Lower radiator hose	Pcs	2
14	Radiator cap	Pcs	2
15	Hydraulic oil filter	Pcs	4
16	Hydraulic double pump	Pcs	2
17	Header drive belt	Pcs	2
18	Wobble box drive belt	Pcs	2
19	Reel speed variator belt	Pcs	2
20	Knife sections (sickle blades)	Pcs	60
21	Double fingers / Rock guards	Pcs	30
22	Knife with frame complete (complete sickle bar)	Pcs	2
23	Knife drive ball joint	Pcs	4
24	Drum (Rotor/Cylinder) speed variator belt	Pcs	2
25	Sieve pan drive belt	Pcs	2
26	Sieve pan bushing	Pcs	8
27	Flat belt (General drive)	Pcs	2

NB: Bidders shall provide a detailed list of recommended spare parts, spare parts catalogue, and basic accessories and spare parts, in addition to the above listed. These should be supplied free of charge together with the machine (as part of delivery).

C. Delivery, Sustainability and Right to Vary requirements -- Comparative Data Table

UNOPS Requirements	
Delivery time	<p>Bidder shall deliver the goods to FCA port origin within 90-120 days. Bidders should specify the FCA port of Origin.</p> <p>Bidder shall deliver the goods within 120 - 150 days to DAP Ministry of Agriculture, Addis Ababa, Ethiopia</p>
Delivery place and Incoterms rules	<p>FCA named port of origin, as per Incoterms 2020 + PDI, Assembly and Training Services.</p> <p>DAP Addis Ababa, Ministry of Agriculture Warehouse as per Incoterms 2020 including customs clearance, handling, delivery and offloading services + PDI, Assembly and Training Services.</p> <p>UNOPS reserves the right to Award a contract on FCA or DAP Incoterms to the best interest of UNOPS and the partner.</p>
Consignee details	<p>Ministry of Agriculture, King George VI Street, Addis Ababa, Ethiopia</p>
Gender and Social Inclusion - Equality opportunity, Diversity and inclusion	<p>The bidder shall provide documentation that details their approach to ensuring equal opportunity, diversity, and inclusion within their organisation (e.g. equal pay policy, parental leave, the ratio of female to male employees, % of females in management positions, grievances disaggregated by gender, transparency of promotion criteria, sexual harassment policies). Bidders are encouraged to take the WEPs Gender Gap Analysis Tool to identify strengths, gaps, and opportunities to improve their performance on gender equality.</p>
UNOPS Right to vary requirements	<p>At the time a contract is awarded, UNOPS reserves the right to vary the quantity of the goods and associated services specified above, provided this does not exceed +/- 20%, without any change in the unit prices or other terms and conditions of the ITB.</p>

The offered goods and related services (if applicable) are in accordance with the required specifications and requirements specified in Section II: Schedule of Requirements:

☐ Yes ☐ No

ANY DEVIATION MUST BE LISTED BELOW:

Inspections and tests

The following inspections and tests shall be performed:

UNOPS or its representative reserve the right to inspect and/or test any or all items of the goods to confirm their conformity to the contract, prior to dispatch from the manufacturer's/supplier premises. Such inspection and clearance will not prejudice the right of the consignee to inspect and test the goods on receipt at destination.

If the goods fail to meet the laid down specifications, the supplier shall take immediate steps to remedy the deficiency or replace the defective goods to the satisfaction of the purchaser.

The offered goods and related services (if applicable) are in accordance with the required specifications and requirements specified in Section II: Schedule of Requirements.

☐ Yes ☐ No

ANY DEVIATION MUST BE LISTED BELOW:

I, the undersigned, certify that I am duly authorized by [insert full name of bidder] to sign this bid and bind [insert full name of bidder] should UNOPS accept this bid:

Name : _____

Title : _____

Date : _____

Signature : _____