Section 6: Schedule of Supply

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1. List of (Equipment) Goods and Related Services

Package No. G-13			
Package Name: G-13 Procurement of Lab Equipment RDTC Floriculture and Medicinal Plants			
Item No.	Description	Unit	Qty
1	Tissue culture incubator and growth chamber	No.	1
2	Polytunnel for orchid cultivation	No.	4
3	Work benches with cabinet	No.	12
4	Storage cabinets	No.	6
5	Water purification system	No.	2
6	Heating plates with magnetic stirring	No.	2
7	Turmeric pulveriser	No.	1
8	Amla deseeder machine	No.	1
9	Pumpkin Seed peeling machine	No.	1
10	Herbal soap stamping machine	No.	1
11	Herbal capsule making machine	No.	1
12	Digital perfume liquid filling machine	No.	1
13	Herbal motorised tablet making machine	No.	1
14	Herbal powder mixing machine	No.	1
15	Semi-commercial automated steam distillation unit	No.	1
16	Heat pump dryer for food	Set	1
17	Heat pump heater for greenhouse	Set	1
18	Multispectral crop mapping drone	Set	1
19	Agricultural spray drone	Set	1
20	IoT based smart irrigation system	Set	1
21	Gas chromatograph with flame ionization detector	Set	1
22	Rotary vacuum evaporator with chiller and solvent recovery	Set	1
23	Automatic herbal tea filter bag packaging machine	Set	1
24	Automatic vertical steam autoclave	Set	1

25	Automatic agricultural weather station	Set	1
26	Automated fertigation system	Set	1
27	Water-powered proportional dosing station	Set	2

2. Delivery and Completion Schedule

The delivery period shall start as of the date of supply order (Equipment).

Item No.	Description	Location	Required Arrival Date of Goods or Completion Date for Related Services
1	Tissue culture incubator and growth chamber	RDTC, Zhemgang	The goods should be delivered to RDTC-Zhemgang within 120 days from the date of supply order.
2	Polytunnel for orchid cultivation		
3	Work benches with cabinet		
4	Storage cabinets		
5	Water purification system		
6	Heating plates with magnetic stirring		
7	Turmeric pulveriser		
8	Amla deseeder machine		
9	Pumpkin Seed peeling machine		
10	Herbal soap stamping machine		
11	Herbal capsule making machine		
12	Digital perfume liquid filling machine		
13	Herbal motorised tablet making machine		
14	Herbal powder mixing machine		
15	Semi-commercial automated steam distillation unit		
16	Heat pump dryer for food		
17	Heat pump heater for greenhouse		
18	Multispectral crop mapping drone		
19	Agricultural spray drone		
20	IoT based smart irrigation system		
21	Gas chromatograph with flame ionization detector		
22	Rotary vacuum evaporator with chiller and solvent recovery		

23	Automatic herbal tea filter bag packaging machine		
24	Automatic vertical steam autoclave		
25	Automatic agricultural weather station		
26	Automated fertigation system		
27	Water-powered proportional dosing station		

3. Technical Specifications for Equipment

1. Tissue culture incubator and growth chamber

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			
Specification	Temperature: Controlled between 15°C to 30°C Humidity: Maintained at 20% to 98% RH Lighting: Cool LED or fluorescent lamps with adjustable intensity, specialized red/blue spectrums, and programmable day/night cycles. 150-200 litre capacity Construction: Corrosion-resistant stainless steel interiors with multi-tier adjustable shelves and uniform forced-air circulation. Minimum of 12 months warranty. 		

2. Polytunnel for orchid cultivation

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Size: 5 meters wide by 20 meters long. Frame: High-tensile, galvanized structural steel hoops (42mm+ diameter). Hoop Spacing: Spaced at intervals of 1.5m to 2 along the length. Cover: UV-stabilized polyethylene or EVA greenhouse film (150–250 microns). Wind Resistance: Engineered for wind speeds up to 85–100 km/h (50–60+ mph). Doors & Ventilation: 1m wide steel-framed access doors with optional side-rolling ventilation. Minimum warranty of 2 years for frame and installation; 1 year for covering film against manufacturing defects and premature UV degradation under specified conditions. 		

3. Work benches with cabinet

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Surface Materials: phenolic resin Dimensions: Height approx. 1.5 metres, with a length of approx. 5 metres and a width of approx. 1 metre. Load Capacity: Approx. max 100kg. Under-Bench Storage: Open bottom shelves, modular drawer stacks with locking cabinets. Minimum of 12 months warranty. 		

4. Storage cabinets

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Type: Laboratory chemical/reagent storage cabinet suitable for organized storage of laboratory chemicals, reagents, glassware and supplies. Construction: Durable powder-coated steel, stainless steel or chemical-resistant polypropylene construction. Dimensions: Approximately 800–1000 mm wide × 450–600 mm deep × 1800–2100 mm high, or equivalent. Shelves: Minimum 4 adjustable shelves with raised edges/spill containment; minimum shelf load capacity 50–70 kg per shelf. Minimum of 12 months warranty. 		

5. Water purification system

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Type: Laboratory water purification system providing purified and/or ultrapure water for analytical, microbiological and molecular laboratory applications. Treatment: Minimum RO + deionization (DI) system; optional polishing stage/UV/ultrafiltration preferred for ultrapure water. Water Quality: Type I ultrapure water target up to 18.2 MΩ·cm at 25 °C where Type I output is required; Type II purified water output is also acceptable for routine laboratory use. Minimum of 12 months warranty. 		

6. Heating plates with magnetic stirring

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Type: Laboratory digital hotplate magnetic stirrer combining controlled heating and variable-speed magnetic stirring. Plate: Ceramic-coated, ceramic or stainless-steel corrosion-resistant heating surface; minimum plate size approximately 180 × 180 mm. Temperature: Ambient to at least 300 °C; temperature control accuracy approximately ±1–2 °C or better. Stirring Speed: Approximately 100–1500 rpm or wider range. Minimum of 12 months warranty. 		

7. Turmeric pulveriser

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Electric food-grade pulveriser, 5–10 kg/hr capacity or higher, 2–3 HP motor, SS 304 food-contact parts, interchangeable screens for fine grinding, suitable for turmeric/spices/grains, with overload protection and safety guard, 220–240 V AC, 50 Hz, single phase. Minimum of 12 months warranty. 		

8. Amla deseeder machine

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			
Specification	semi-automatic, capacity 50–100 kg/hr, stainless steel, 1 HP motor, SS304 food-contact parts. Minimum of 12 months warranty. 		

9. Pumpkin Seed Peeling Machine

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			
Specification	semi-automatic, capacity 10–20 kg/hr, stainless-steel construction with SS 304 food-contact parts, suitable for removal of pumpkin seed husks, with separate husk and kernel separation. Minimum of 12 months warranty. 		

10. Herbal soap stamping machine.

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			
Specification	Semi-automatic soap bar stamping/embossing machine with a capacity of 20–50 bars/min, stainless-steel construction, manual/semi-automatic operation, customizable or interchangeable stamping dies for different soap sizes, shapes, logos and designs. Minimum of 12 months warranty. 		

11. Herbal capsule making machine

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			
Specification	Manual capsule filling machine with 300 holes, suitable for filling vegetal capsules with herbal/Ayurvedic formulations, with a production capacity of approximately 5,000 capsules/hour, designed for efficient and consistent capsule filling. Minimum of 12 months warranty. 		

12. Digital perfume liquid filling machine

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Semi-automatic single-head perfume filling machine with a filling range of 250 mL, filling speed of approximately 20 bottles/min, time-based metering, electric operation, SS304 body construction, digital display. Minimum of 12 months warranty. 		

13. Herbal motorised tablet making machine

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			
Specification	Automatic motorized tablet-making machine, Model AL-1421, with a capacity of approximately 120 tablets/minute, durable cast-iron construction, ½ HP motor, 220 V power supply, high-speed and efficient operation, with customizable tooling and versatile operation for producing tablets of different sizes and shapes. Minimum of 12 months warranty. 		

14. Herbal powder mixing machine

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			
Specification	Semi-automatic U-type herbal powder mixing machine, Model 08, with a 25 kg batch capacity and approximately 1000 kg production capacity, constructed from SS 304 stainless steel The source gives no time basis for the approximately 1,000 kg production capacity; confirm. Minimum of 12 months warranty. 		

15. Semi-commercial automated steam distillation unit

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Semi-commercial automated steam-distillation essential oil extraction unit, constructed from SS 304 stainless steel, with a customizable capacity of approximately 50–100 kg of plant material per batch, electrically operated, equipped with adjustable temperature and pressure controls, automated operation, steam distillation system, condenser and essential-oil separator. Minimum of 12 months warranty. 		

16. Heat pump dryer

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Batch heat-pump food dehydrator with recirculating air, dehumidification and condensate drainage; suitable for herbs, spices, fruits, vegetables and flowers. Nominal 100 kg fresh prepared material per batch; at least 24 removable trays. Adjustable drying temperature covering 30–75°C; digital temperature and humidity display, programmable timer, forced-air circulation and over-temperature protection. Heat-pump unit, chamber, trays, controls, condensate fittings, delivery, installation, commissioning and operator training. Minimum 12-month warranty. 		

17. Heat pump heater for greenhouse

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Air-source, air-to-water heat-pump space-heating system with hot-water fan coils and controls suitable for a humid greenhouse. Provisional 18–22 kW nominal thermal-output class for one 100 m² polytunnel. Adjustable heating-water supply approximately 35–55°C; automatic defrost. Bidder to state net heating output, electrical input and COP at 7°C outdoor air/45°C water and at the agreed winter design condition. Greenhouse air thermostat, adjustable approximately 10–30°C; air-temperature display and flow, pressure, over-temperature and frost protection. Outdoor heat pump, adequately sized fan coils, circulation pump, buffer vessel where required, insulated pipes, valves, controls, delivery, installation, commissioning and training. Minimum 12-month warranty. 		

18. Multispectral crop mapping drone

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Agricultural mapping UAV with RTK positioning, RGB camera of at least 20 MP, and separate green, red, red-edge and near-infrared sensors of at least 5 MP each. Georeferenced imagery, automatic survey planning, return-to-home and obstacle sensing. Export orthomosaics and NDVI/NDRE maps; demonstrate the complete workflow on existing workstations. Controller, three flight batteries in total, charger, case, spare propellers and calibration procedure. Include RTK correction access or an appropriate base solution and first-year mapping software. Deliver a mapped training plot, editable data and instructor training. Minimum of 12 months warranty. 		

19. Agricultural spray drone

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Complete ready-to-fly agricultural UAV with nominal 10 L tank, GNSS guidance, adjustable flow, automatic return and emergency stop. Route planning, flow calibration and low-level height control. Bidder must declare empty weight, maximum take-off mass, permitted operating load, endurance and suitability at the campus elevation. Controller, three compatible battery sets in total, matched charger, spare propellers, nozzles, maintenance tools and carrying/transport protection. Demonstrate uniform water application, safe shutdown and cleaning; train instructors and provide logs/manuals. Minimum 12-month warranty. 		

20. IoT based smart irrigation system

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Integrated field irrigation controller, gateway and mobile/web dashboard. Four field-grade FDR/TDR volumetric soil-moisture probes, 0–100% range, with compatible interfaces. State accuracy, installation depth and calibration for the training soil or substrate. Four controlled valves; flow, pressure and tank-level monitoring; interface to the existing pump starter through suitable protected control circuitry. Time, volume and moisture-threshold modes; adjustable start/stop thresholds, maximum run time, low-water/no-flow shutdown and manual override. Retain local control during internet outages. Configurable 5–60 minute logging, time-stamped trends, alarms, user accounts and CSV export. Weatherproof outdoor controller enclosure, minimum IP65; sealed probes, matched node power and controller backup. Include installation, commissioning, manuals, instructor training and minimum 12-month warranty. 		

21. Gas chromatograph with flame ionization detector

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	New benchtop GC with FID, split/split less capillary inlet and programmable column oven spanning approximately ambient +10°C to 350°C or wider. Include an essential-oil capillary column, syringes, vials, certified starter standards and licensed acquisition/integration software compatible with an existing workstation. Include matched carrier and FID fuel/air supplies: suitable cylinders or generators, regulators, purification traps, tubing and secure mounting. Supplier must specify gas purity and flow. UPS, delivery, installation, leak checks, performance verification and instructor training using a reference oil. Minimum 12-month warranty. 		

22. Rotary vacuum evaporator with chiller and solvent recovery

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Pilot teaching system with nominal 10 L rotating flask, condenser and receiving flask; borosilicate glass and solvent-compatible seals. Digital bath temperature and rotation control, controllable vacuum and powered bath/flask lift. Rotation range to include approximately 20–140 rpm; over-temperature and dry-bath protection. Include a suitably sized recirculating chiller, solvent-resistant vacuum pump, vapor trap, coolant, tubing, clamps and compatible glassware. State cooling duty, achievable vacuum and approved solvents. Demonstrate recovery from an agreed teaching mixture and train staff in cleaning and glassware handling. Include delivery, commissioning and minimum 12-month warranty. 		

23. Automatic herbal tea filter bag packaging machine

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	**Machine:** Automatic single-chamber filter-bag forming, filling and sealing machine suitable for cutting dried herbs. Adjustable fill covering at least 1.5–2.5 g; nominal capacity approximately 40 bags/min. Food-contact parts in SS 304 or equivalent food-safe material; accessible product path for cleaning. Include thread/tag system, adjustable dosing and seal-temperature controls; no outer-envelope wrapper is required. Machine guards, interlocks, spare sealing parts and starter filter paper, thread and tags. Include compressor and air treatment if required by the machine offered. Prove filling and sealing with the institution's actual herbs; state dose variation, particle-size limits and waste. Bidder to confirm voltage, phase, connected load and air demand. Include delivery, commissioning, training and minimum 12-month warranty. 		

24. Automatic vertical steam autoclave

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	**Chamber:** Automatic electrically heated vertical steam autoclave, nominal chamber volume approximately 100 L; corrosion-resistant stainless-steel chamber, baskets and drain arrangement. **Cycle:** Programmable temperature and holding time with a 121°C sterilisation cycle, digital temperature/pressure display and cycle record by printer or data export. State usable loading volume and supply requirements. **Protection:** Pressure-rated vessel with safety valve, door/lid pressure interlock, low-water cut-out, over-temperature protection and controlled exhaust/cooling appropriate for liquid media. **Package:** Include baskets, installation fittings, initial indicators, calibration documentation and loading/cycle validation demonstration. Provide delivery, commissioning, operator training and minimum 12-month warranty. State cycle time and electrical load; do not assume sterilisation from temperature alone. 		

25. Automatic agricultural weather station

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Outdoor air temperature and relative humidity in a radiation shield; wind speed/direction, tipping-bucket rainfall, solar radiation and barometric pressure. Configurable interval including 1–60 minutes, time-stamped storage, USB/SD export in CSV format and offline analysis software. State accuracy and calibration method for every sensor. Include mast/tripod, solar supply, rechargeable battery, weatherproof logger enclosure, earthing/lightning protection and required mounting hardware. Confirm a representative open campus site. Include any required first-year connectivity charges, commissioning, calibration checks and instructor training. Minimum 12-month warranty. 		

26. Automated fertigation system

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Include two nutrient channels, one pH-adjustment channel, controller, sensors and injection manifold. State water-flow/pressure range, minimum stable dosing and power requirements. LF catalogue suction capacity is up to 160 L/h, with 1½-inch connections; final duty must suit campus demonstration plots. Programmable recipes, irrigation schedules and EC/pH targets; no-flow interlock, abnormal-dosing alarm and shutdown. Frame, matched booster where required, three labelled stock containers of approximately 100 L each, suction strainers, filtration, backflow protection, isolation valves, gauges, flow measurement and four controlled demonstration outlets. Demonstrate sensor calibration and stable target control at the actual plot flow. Minimum of 12 months warranty. 		

27. Water-powered proportional dosing station

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Make			
Model			
Country of origin			

Description	Minimum Requirement	Bidder's Response (Yes/No)	If No Bidder's Comments
Specification	Externally adjustable 0.2–2% ratio (approximately 1:500 to 1:50). Body, seals and suction assembly compatible with the intended soluble fertilisers; supplier to declare chemical limitations. Each station doses one compatible stock solution at a time. Injector, mounting support, approximately 100 L stock container, suction hose/strainer, upstream filter, three-valve bypass, backflow prevention, gauges, water-flow measurement and short demonstration pipework. Confirm sufficient residual pressure for downstream irrigation; no electronic EC/pH feedback is included. Minimum of 12 months warranty. 		

Note:

a. The photos of the items are provided just for clarity purpose and no particular brand or model is preferred.

b. The bidders are requested to submit the brochures/catalogues containing technical specifications and model numbers of the items. Any item without catalogues with the technical specification and model number of the item would form enough basis for rejection of the item.

4. Drawings