

Annex A for RFQ-IRQ-017722 - Hydroponic System improvement items

General Notes:

1. The cost for all the items listed below includes the provision of materials, equipment, transportation, installation, and any other necessary accessories and work. Any relocation or modification of existing items or services will be directed by DRC Team and the Research Department.
2. Samples of the items and materials to be used in this project must be provided to DRC team to be approved.
3. Any damaged parts in the existing structure due to the work in the site , will be responsibility of contractor.

#	ITEMS DESCRIPTION	UNIT	QTY	Unit Price	Total Price (IQD)	SAMPLE (PICTURE)
1	Construction of underground water tank: Supply all the materials and manpower to construct hollow cement block underground water tank with reinforced concrete floor according to the below description: - Excavate the area and dispose of any underground water. - Clear area: (3.2x1.5x1.8 m) 1- Floor "Base" : -Compacting the bottom ground until its firm, Sub-base of 15 cm compacting well, Spread one layer of sand-cement mix thickness = 1 cm, one layer of nylon sheet thickness =200 micron (Agricultural nylon), Reinforced concrete thickness= 10 cm, with iron mesh of 16 mm @ 150 mm spacing both ways. 2- Concrete wall: - C15 Reinforced Concrete wall : Thickness= 15 cm, Reinforcement : Vertical bar 10 mm @ 200 mm spacing, horizontal bars 10 mm @ 150 mm, with concrete cover for steel 3 mm 3- Divider block wall: - Use hollow block 40*20*20 cm as a divider in the middle, embed steel bars inside the divider wall at suitable spacing for strengthen the wall. And fill the grout of the hollow with mortar. ** Must use Sika in the mixture of the concrete for both floor & walls - After curing time for the concrete, Paint the walls and floor with Epoxy paint from high brands like Juton. - UPVC cover for water tank: Supply and installation according to: - Frame: 6.5cm. - Hinges (Internal): 8.5cm. - Accessories: hinges, handles. The cost include close all gaps around the cover The work includes providing rectangular hollow iron tube fram (1.5*3") inch (2 mm) for functional installation	LS	1			
2	Casting concrete: Supply all the materials and manpower needed to cast the concrete for the ground according to the below descriptions: - Thickness: 5 cm. - use one layer of sub-base thickness= 5 cm and compacting it well. - Concrete Strength of 15 MPa. - Sulfate resistant cement, gravel, and sand mix with water cement ration not more than 60%. - one layer of nylon sheet must supplied with thickness = 200 micron (Agricultural nylon) to be layed under the concrete -An iron mesh measuring of suitable thickness with an opening of 15 cm must be provided and placed on the surface on which the concrete will be poured. - Smoothing the concrete surface to be fair-face.	M³	1			

3	Relocation & Re-installation: Prepare material and manpower to: - Disconnect cooling pad system and its supporting stand of blocks and its items of water tank and motors from one end of the plastic house and re-install it in the opposite end " in place of the sandwich room & fans" - Diconcst the sandwich room and 4 industrial fans with the frame and electrical board and re-install them in place of the cooling pads system - Ensure all electrical wires and connection are safely disconnected, relocated and reconnected for fans and cooling pads. - Restore any structural or finish work affected by the relocation like the supporting hollow blocks for the cooling pads approx=50 block , and lean concret floor approx 4 m² - The cost includes dismantling,reinstallation, electrical wiring modifications if needed.	LS	1			
4	Construction of water return tank: Supply materials and manpower to construct water return tank for the cooling pads: - Spread a layer of subbase or fine gravel, and then one layer of lean concrete base thickness 5 cm - Use concrete hollow block 40 x20 20 cm for the tank dimensions = 8 m (L) x 0.8 m (W) x 0.6 m (H) - The price includes plastering the insides and outside of the tank with cement plaster.	LS	1			
5	Red Sand: Supply one truck "Lorry" of red sand	Truck	1			
6	Sandwich Panels for Roof: Supply and intall sandwich panels for roofs according to the below specifications: - Materials: Galvanized, pre-fabricated, painted in white color - Insulations: Polyurethane foam - Thickness: 5cm -Slope :3% - Structure: using rectangular hollow iron tube 1.5" x 3"inch., plate thickness 2mm over the existing walls Two way Latitudinal (along short side dimension), paint the holow iron tube by one layer of anti-rust paint and two layer of oil paint, the work must includes providing drain chanel at the proper sloping area.	M ²	22			
7	Sandwich Panels for Walls: Supply and install sandwich panels for walls according to the below description - Materials: Galvanized, pre-fabricated, painted in white color. - Insulations: Polyurethane foam. - Thickness: 5cm. - Structure: Using right angle iron 3", plate thickness 4mm , as frame around the walls, painting the iron by one layer of anti-rust paint and two layer of oil paint.The work supplied must includes openings for the doors - All the openings or gaps must be closed	M ²	52.30			
8	PVC Doors: -Material : PVC -Dimensions of 2 m * 0.85 m. - Frame and stile : 6.5cm thickness -Hinges(Mullions): 8.5cm. - Accessories: three hinges, stop door, handles and locks. - All accessories and any other parts that it is needed must be provided for proper installation. - All the openings or gaps must be closed	No.	1			
9	Square shape Exhaust Fan : Supply and installation an exhaust fan according to: - Power: 220 V, 50 Hz, 32 Watt. - Type: square. - Sweep: 300mm, 12". - 5 Plastic Blades. the work includes make proper opening in the sandwich wall with suitable frame for functional installation,Electrical wiring and switch approx length= 30 meter of 2*2.5 mm	No.	1			
10	Bulb light 60 Watt: Supply and install a Bulb light and base, the light shall be CE marked with the below specifications: - Type: LED Bulb 60 Watt. - Light color: 6000 K. - The price includes its holder and wiring and switch	No.	2			

11	Double-Light Switch: Supply and install a Double Switch, the product should be CE marked according to the below specifications: - Rated Current: 6 Amp. - Color: White. - Type: wall mounted. - Accessories: galvanized electrical junction box.	No.	1			
12	pH sensor: Supply online pH meter: - Operation Temp.: 0-50 C - LCD Display - High precision electrodes - controlling via mobile app	No.	1			
13	TDS sensor: Supply online TDS monitor with mobile control - Operation Temp.: 0-50 C - LCD Display - High precision electrodes - controlling via mobile app. - Similar to photo	No.	1			
14	Water filter: Supply water filter for water recycling and treatment with mesh screen , flow rate 2-3 m³/h	No.	2			
15	UV lamp: Supply and installtion of UV lamp for water distillation Material : Item dimension: 20L x 0.5W x 0.5H cm	No.	2			
16	Potassium nitrate (Powder) bag=25 Kg - Physical sample required - Preferred to be from European origin	Bag	4			
17	Calcium nitrate - White grains - Physical sample required - Preferred to be from European origin	Bag	4			
18	Magnesium sulfate , Bag= 25 Kg - Physical sample required - Preferred to be from European origin	Bag	4			
19	85% Phosphoric acid : one jellycan = 35 Kg , concetration 85% , Food grade - High quality - Physical sample required	Jellycan	1			
20	Iron" chelated "fertilizer: Supply cheltaed iron with 6% concetrated -Preferred to be from European origin -Physical sample required	Kg	3			
21	Abamectin 1.8 pesticide: Supply Abamectine with 1.8 EC - Preferred to be Jordanian origin - Physical sample required	Ltr	1			
22	Propamocarb pesticide: -Preferred to be from European origin -Physical sample required	Ltr	1			
23	Uniform Pesticide: -Preferred to be from European origin -Physical sample required	Ltr	1			
24	MKP fertilizer 0-52-34: - Bag weight: 25 kg -Preferred to be from European origin -Physical sample required	Bag	4			
25	Agricultural medium "perlite": Provide an inorganic porous material, preferably perlite - Preferred to be Turkish origin	Ltr	12,800			
26	Acetamidrid 20% SP: - Preferred to be from goof origin.	Ltr	1			

27	Cucumber Seeds : Provide cucumber seeds envelope specific for plastic house - Type: Neddal F1, Similar to photo	No.	3			
28	Covering Nylon film : Supply high quality nylon with follows specifications: - Thickness is 200 microns. - The dimensions are (34*14 m), Yellowish green colour (transparent), UV not less than 5%. -The light transmittance should be 85%,light distribution 45% - Anti-cracking by UV at least 5-9%. Have at least 3 years guarantee and have ISO certification.	No.	1			
29	Dutch Bucket: Supply and installation dutch bucket with all needed accessories must be provided for proper useage. - Material : plastic - Volume :16 litter with all the accessories that it is needed for the work - Similar to photo	No.	800			
30	Plastic drippers 2L: Supply and install drippers for the sprinkle system Material : plastic , 2 ltr - The work includes all the accessories and parts that is needed.	No.	1,300			
31	Water misting system: Supply and installation of water misting system according to the below specification: - Pressure: 10 bar - Copper nozzles #80 - Motor : 0.75 HP with pressure regulator & pressure gauge. - Main line: 1/2" PVC or PE tube, 10 meter - Branch lines: 1/4" tubing, 80 meter -the price includes all accessories of Elbow,connectors,end caps and electrical wiring with suitable size and length of 5 meter.	No.	1			
32	Horizontal Storage Tank 3000 Ltr: Supply high quality PVC water tank according to the bellow descriptions: - Size: 3000 L - Type: Horizontal - Structure: PVC water tank, (3 layers of polyethylene) - Preferred to be Saudi or Indian	No.	6			
33	Storage Tank 300 Ltr: Supply PVC water tank according to the bellow descriptions: - Size: 300 L - Type: vertical - Structure: PVC water tank, (3 layers of polyethylene) -includes supplying PPR pipe 1/2" ,3 meter length with necessary fittings (elbow, tee, valves, female elbow, floating valves,water faucet etc.).	PIECE	3			
34	Corrugated Sheets Shed: Supply and installation a shed according to the following specifications: - Area: 8*4 meter - Materials: Galvanized. - Thickness: 0.8mm - Structure: Using hollow iron tube 5 x 5 cm, plate thickness 2mm, as frame and as Vertically support every 150 cm C/C angle tube thickness 2 mm with proper fixation in the soil	LS	1			
35	Non-woven fabric cover: Provide non-woven cover for plants according to the below specifications: - Material: 100% Polypropylene - Basis Weight: 25 GSM - Color: White - Roll Size: 400 X 3 meter The cover must be from high material, heat-treated and protects the plant from UV rays at 5%. - Preferred to be Emirates or similar.	Roll	1			

36	2" UPVC Pipe: Supply and installation UPVC pipes according to the below specifications: - Size: 2". - Temperature: 60C. - Fittings: elbow, connector, female elbow, male elbow, tee, fixings fittings, cap, etc. -The price includes a fixation plate to be put at each 4 meter of the pipe to secure it on the concrete ground. - Must be Turkish origin	ML	150			
37	2" End cap: Supply plug end caps according to the below specifications: - Size: 2" - Material: UPVC	No.	16			
38	2" Pipe connector: Supply pipe connectors according to the below specifications: - Size: 2" - Material: UPVC	No.	32			
39	2" pipe elbow: Supply pipe elbow according to the below specifications: - Size: 2" - Material: UPVC	No.	3			
40	Water hose: Supply felxible , durable , high quality and lightwight water hose with the below specifications: material: HDPE , Black -Size: 1" , Length= 100 meter	Roll	1			
41	Twine reel: Supply twine reel according to the below specifications: - Material: Polyester - Color: White	Kg	20			
42	Circuit breaker switch: Supply and installation Smart crircuit breaker switch according to the below specifications: - Rated current: 50 A, 1P - Type: Smart edition - Rated frequency/ Voltage: 50 Hz/ 230V - The cost includes wiring, and needed accessorise to work correctly.And must be compatible with Tuya.	No.	2			
43	Two side Steel ladder: Supply a sturdy ladder of Steel Aluminium with two sides that could withstand minimum 150 kg -Material: steel Steps, Non-slip feet for safety -Height: 2.5 meters -Step rise: 25 cm , Step width= 50-60 cm -Non-slip feet for safety	No.	1			
44	Work Suite 2 Pcs: Supply work suit consist of 2 pcs 65/35% Polyester / Cotton • Double stitching Mercerised & sanforized Overlock stitching for extra strength Weight: 155gsm Two chest pocket Two swing pocket and back pocket Elasticated waist band for extra comfort - Sizes: 2XL= 3, XL= 3	PIECE	6			
45	Respirator Safety Mask: Supply half mask bi-filter - Material:polypropylene (PP).Thermplastic (TPE) overmould & Elastic straps.Must come with filters - Similar to photo	PIECE	6			
46	Safety Goggles: Supply Lightweight PVC safety goggles with Soft Rubber Gasket, Ventilation Channels that offers breathability and reduces fogging and Elastic Cloth Head Strap.	PIECE	6			

47	Plant Tying Tool for Gardening: Supply plant tying tool set with below specification: - Size: 12.5" - Tape Size Compatibility: W11mm x L25, 30M - Staple Size: C7mm x L4mm x W0.55mm Must Includes stretch garden tie tape and 200 staples. - Similar to Ingco	PIECE	1			 12.5" 200 Staples 25m/1 Roll
48	Harvest crate: Supply harvest crate made of HDPE material with dimensions of :400x500x220 cm - Similar to photo	No.	5			
49	Heavy Duty Large 4 Tier Trolley: Supply all-welded steel heavy duty trolleys for industrial use with resilient rubber tier: - Capacity: 250 kg - Dimension: 1 m (L) x 0.7 m (W) - Distance between shelves = 55 cm Must comes with handles for easy moving - Similar to photo	No.	2			
50	Electrical hand mixer: Supply electrical mixer used for mixing chemical materials,with below specification: Motor Power:1000 watt - Add arm length instead of the stainless steel mixer hand made of PPR pipe with the end the shape of a cross , hand length approx 60 cm -Similar to photo	No.	1			
51	Multi-Purpose Tool Kit: Supply Multi-Purpose Tool Kit similar to Proskit -External attached photo contain all specific items name.	No.	1			
52	Pruning Shear : Supply pruning shear used for pruning plants: Material: #55 Carbon Steel, heat-treated for sharpness. Maximum Cutting Diameter: 10mm. Handle: PVC dipped for comfort. Ideal for: Pruning plants	PIECE	2			 READY STOCK FOR RAPID DELIVERY TOLSEN TOOLS AND MORE INDUSTRIAL DISTRIBUTORS
53	Cordless Pruning Shears 20V: Supply cordless shears for precise pruning with below specification: -Motor: Brushless -Voltage: 20 V -Cutting Diameter: 0-25 mm -The price included Accessories: Sharpening stone, oil bottle,Battery and charger. - Similar to photo from Wadrow brand.	PIECE	1			
54	Digital Electronic Scale: Supply digital electronic scale made of Stainless Steel LCD Display - Capacity: 40 kg - Accuracy (Graduation): 2 g - Power Supply: 220~240V AC, - Usage: Suitable for agricultural, commercial, or field use - Similar to Ingco	No.	1			

55	Solar Panels: Supply and installation of high-quality solar of 710W, 10 A. The minimum technical specifications for the solar panels are: - Type: Bifacial - No less than 26BB connections - Panel power 710W -Life expectancy 30 years -Product warranty is 10 years. -Operate at temperatures above 80 degrees Celsius and the coefficient of thermal change should be 0.35% or less for each temperature above 25 degrees. - Must be from Maxima solar (to be connected with existing panels)	PIECE	6				
56	Installation Solar system: Supply and installation a galvanized steel structure type two-tier ground mounted frame with concrete fixations "For 12 panels". According to the below specifications: - Legs: square cross-section2"x2" thickness 2 mm every 80 cm - Rafters:" top beams": 2"x1" and thickness 2 mm , 4 Rafters with welded vertical beams every 80 cm. - Bracing: Angle 40°40°2.5 mm (diagonal between lags) -Clamps at mid and end for panels. - The structure must be anchored to precast concrete for all legs. -The price includes painting the steel structure with one layer of antirust paint then three layers of oil paint of good quality. According to the instruction of DRC staff. -Provide and extend DC electrical wiring single 6 mm approx.= 50 meter -The price includes painting the steel structure with one layer of antirust paint then three layers of oil paint of good quality.	LS	1				
TOTAL PRICE (IQD)							-