



Terms of Reference

Provide equipment and set up the RAS models in Bac Lieu and Soc Trang provinces

1. Introduction

The International Union for Conservation of Nature (IUCN), with funding from the TCCF, invites qualified service providers to tender for the supply, installation, and commissioning of 07 Recirculating Aquaculture System (RAS) models in Hoa Binh district Bac Lieu Province, Vietnam. This project aims to establish sustainable, climate-resilient aquaculture practices within the region, addressing critical environmental challenges such as water scarcity, salinization, and the need for efficient resource use.

Bac Lieu, a key player in Vietnam's aquaculture sector, is highly susceptible to climate change impacts. Traditional aquaculture practices often exacerbate resource strain, leading to excessive water consumption, effluent discharge, and heightened vulnerability to environmental fluctuations. By introducing RAS technology, this project seeks to foster a sustainable aquaculture model that minimizes water use, optimizes water quality, and enhances resilience to climate-related risks.

The TCCF, recognizing the urgency of climate-adaptive solutions, has committed financial support to this project, while IUCN will oversee implementation. IUCN brings extensive expertise in conservation and sustainable resource management, ensuring that this project aligns with regional conservation goals and supports local economic stability. The selected service provider will work closely with IUCN and local stakeholders to deploy these RAS models successfully.

2. Proposal details

2.1 Objectives: This tender seeks a service provider with proven experience in RAS technology and aquaculture infrastructure to achieve the following:

- i. **Installation and Operating:** Deliver and install high-quality RAS components, including Drum filter, Ozone disinfection system, Recirculation pump, Water paddle wheel aerator, Complete solar aeration system, Electrical control cabinet system for operating equipment, PVC water pipe and valve assembly, 110 mm diameter, included with the machine and auxiliary equipment filtration systems, ensuring each system is fully operational.
- ii. **Training and Handover:** Provide comprehensive training to local operators on system maintenance, water quality management, and operational best practices to support long-term sustainability.

2.2 Implementation duration: 09 July 2025 – 30 September 2025 (including delivery, installation, training and handover)

2.3 Requirements:

The scope of work for the selected service provider will include:

- Conducting detailed site assessments and consultations with IUCN and farm operators.
- Installing RAS setups tailored to specific site conditions and species farmed.
- Procuring and installing RAS equipment according to the design specifications for each specific farm
- Testing and commissioning each RAS model to ensure seamless operation.
- Providing training sessions and technical support to local farm operators.

This project represents a critical investment in sustainable aquaculture for Bac Lieu, with the potential to set a regional benchmark for environmentally conscious and economically viable

practices. IUCN encourages experienced service providers to participate in this tender to contribute to a pioneering initiative in climate-resilient aquaculture.

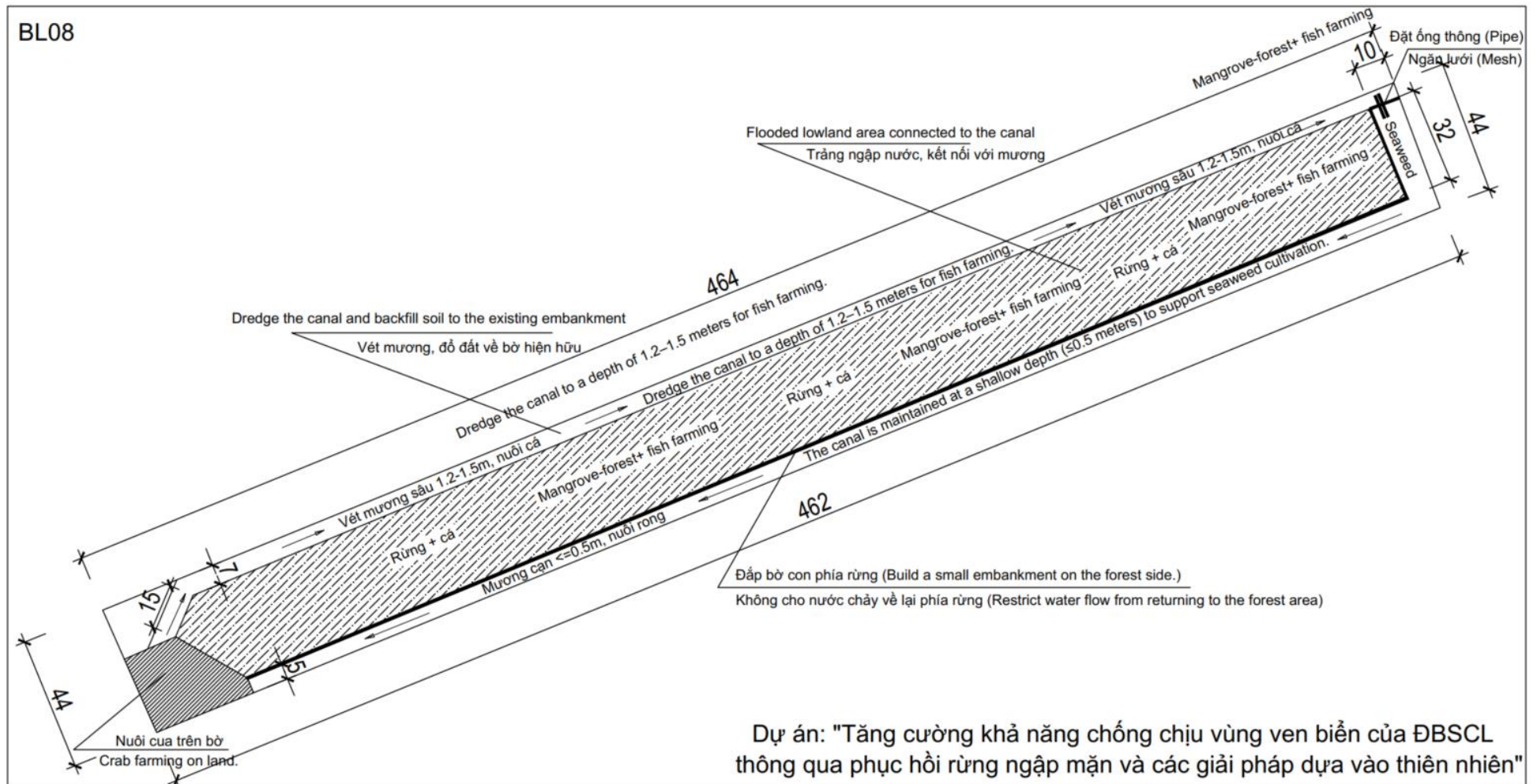
3. Detail requirements

a. Bạc Liêu Province

Farm 1 (BL08): Complete IMTA-RAS integrated recirculating crab farming module combined with mangrove system

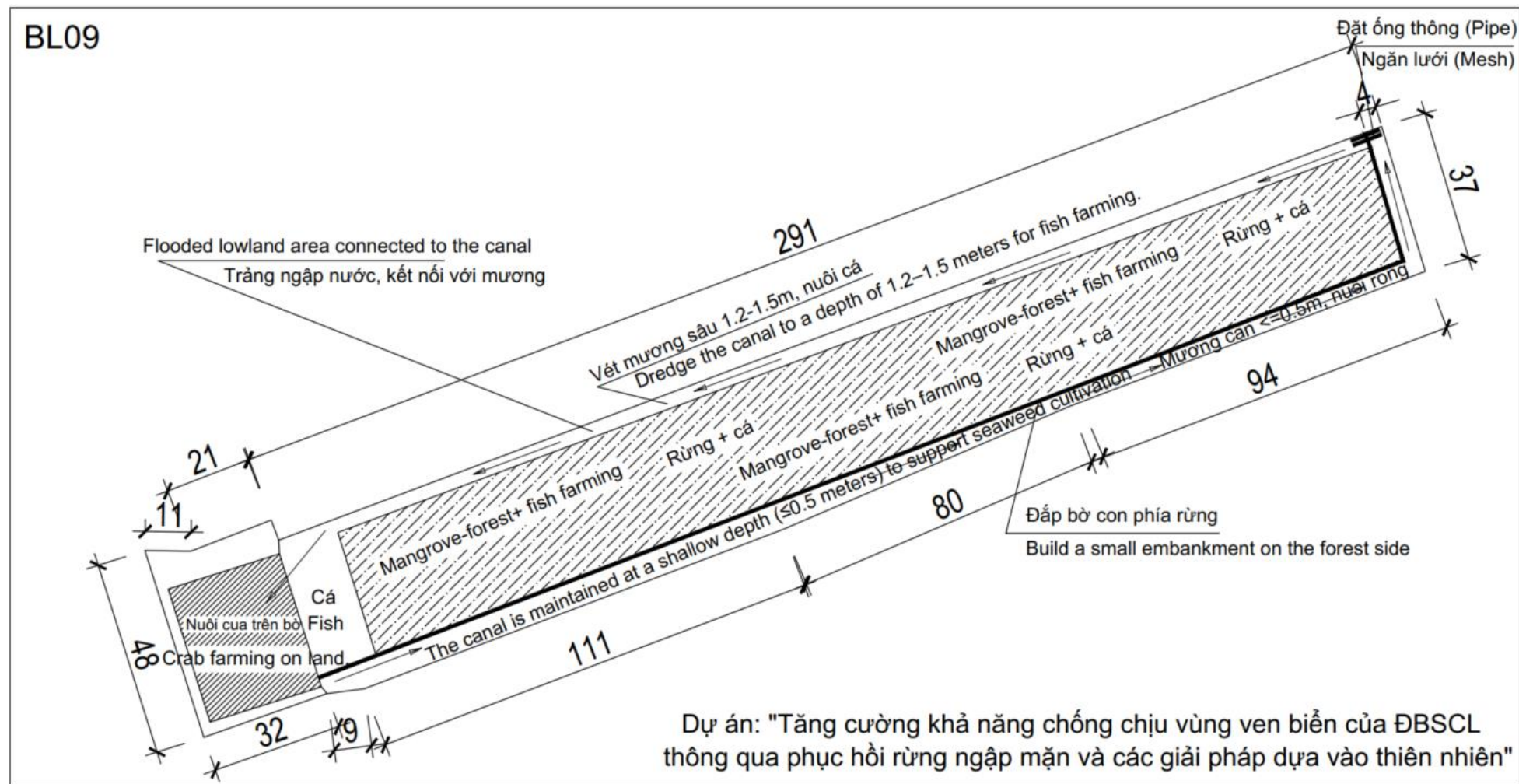
No	Component	Origin	Technical Specifications	Unit	Quantity
1	Recirculating crab housing unit	Vietnam	Each crab box measures 35 x 30 x 17 cm (L x W x H), with a double partition for additional crabs. A total of 150 boxes with a maximum capacity of 300 crabs per production cycle. Connected with PVC inlet and outlet pipes, and control valves integrated into a unified multi-tiered frame structure.	set	1
2	Biological filtration system (bead filter type)	Vietnam	Bead filter made of plastic, PVC or stainless steel, height 2–2.5 m, diameter 300–500 mm, with inlet and outlet ports, including PVC inlet/outlet piping. Integrated with passive solid waste separation and backwashing features. Functions to remove ammonia and total suspended solids (TSS).	set	1
3	UV sterilization chamber with beadfilter accessories	Vietnam	Power capacity: 50–55 W, used for water sterilization.	Unit	1
4	Recirculating water pump	Taiwan	Flow rate $\geq 3.5 \text{ m}^3/\text{h}$, used for recirculating water within the system.	Unit	1
5	Control cabinet + internal wiring	Vietnam	Controls pumps, bead filter system, and UV sterilization unit.	Unit	1
6	Recirculating water storage tank	Vietnam	Made of corrosion-resistant materials, capacity $\geq 200\text{L}$.	Unit	1
7	Intake water pump	Taiwan	Flow rate $> 3.5 \text{ m}^3/\text{h}$, used to pump water from mangrove area into the system.	Unit	1
8	Base platform for crab system	Custom-built	Constructed using high-strength load-bearing materials to support the entire crab housing unit.	set	1

BL08



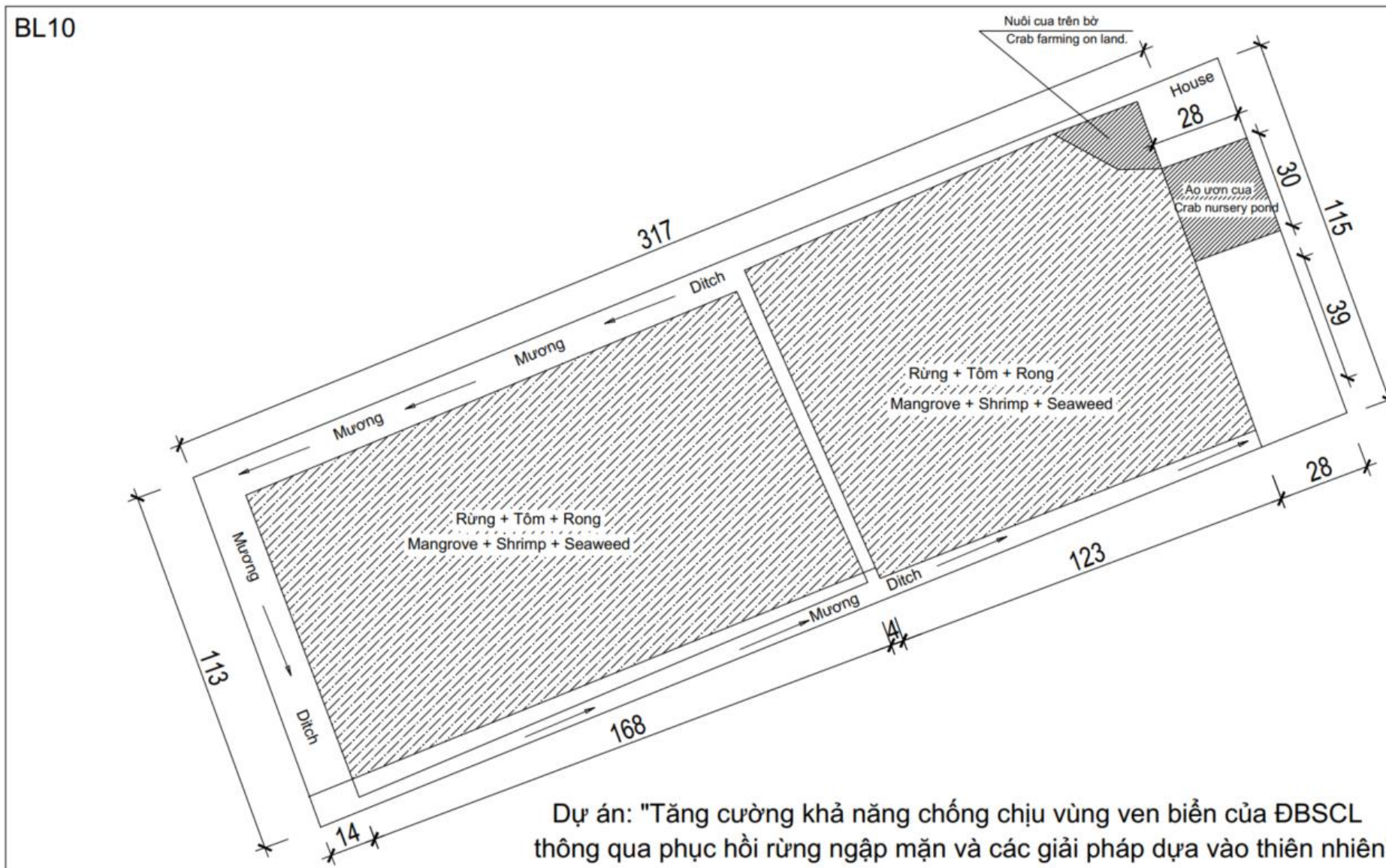
Farm 2 (BL-09): Complete IMTA-RAS integrated recirculating crab farming module combined with mangrove system

No	Component	Origin	Technical Specifications	Unit	Quantity
1	Recirculating crab housing unit	Vietnam	Each crab box measures 35 x 30 x 17 cm (L x W x H), with a double partition for additional crabs. A total of 150 boxes with a maximum capacity of 300 crabs per production cycle. Connected with PVC inlet and outlet pipes, and control valves integrated into a unified multi-tiered frame structure.	set	1
2	Biological filtration system (bead filter type)	Vietnam	Bead filter made of plastic, PVC or stainless steel, height 2–2.5 m, diameter 300–500 mm, with inlet and outlet ports, including PVC inlet/outlet piping. Integrated with passive solid waste separation and backwashing features. Functions to remove ammonia and total suspended solids (TSS).	set	1
3	UV sterilization chamber with beadfilter accessories	Vietnam	Power capacity: 50–55 W, used for water sterilization.	Unit	1
4	Recirculating water pump	Taiwan	Flow rate $\geq 3.5 \text{ m}^3/\text{h}$, used for recirculating water within the system.	Unit	1
5	Control cabinet + internal wiring	Vietnam	Controls pumps, bead filter system, and UV sterilization unit.	Unit	1
6	Recirculating water storage tank	Vietnam	Made of corrosion-resistant materials, capacity $\geq 200\text{L}$.	Unit	1
7	Intake water pump	Taiwan	Flow rate $> 3.5 \text{ m}^3/\text{h}$, used to pump water from mangrove area into the system.	Unit	1
8	Base platform for crab system	Custom-built	Constructed using high-strength load-bearing materials to support the entire crab housing unit.	set	1



Farm 3 (BL-10): Complete IMTA-RAS integrated recirculating crab farming module combined with mangrove system

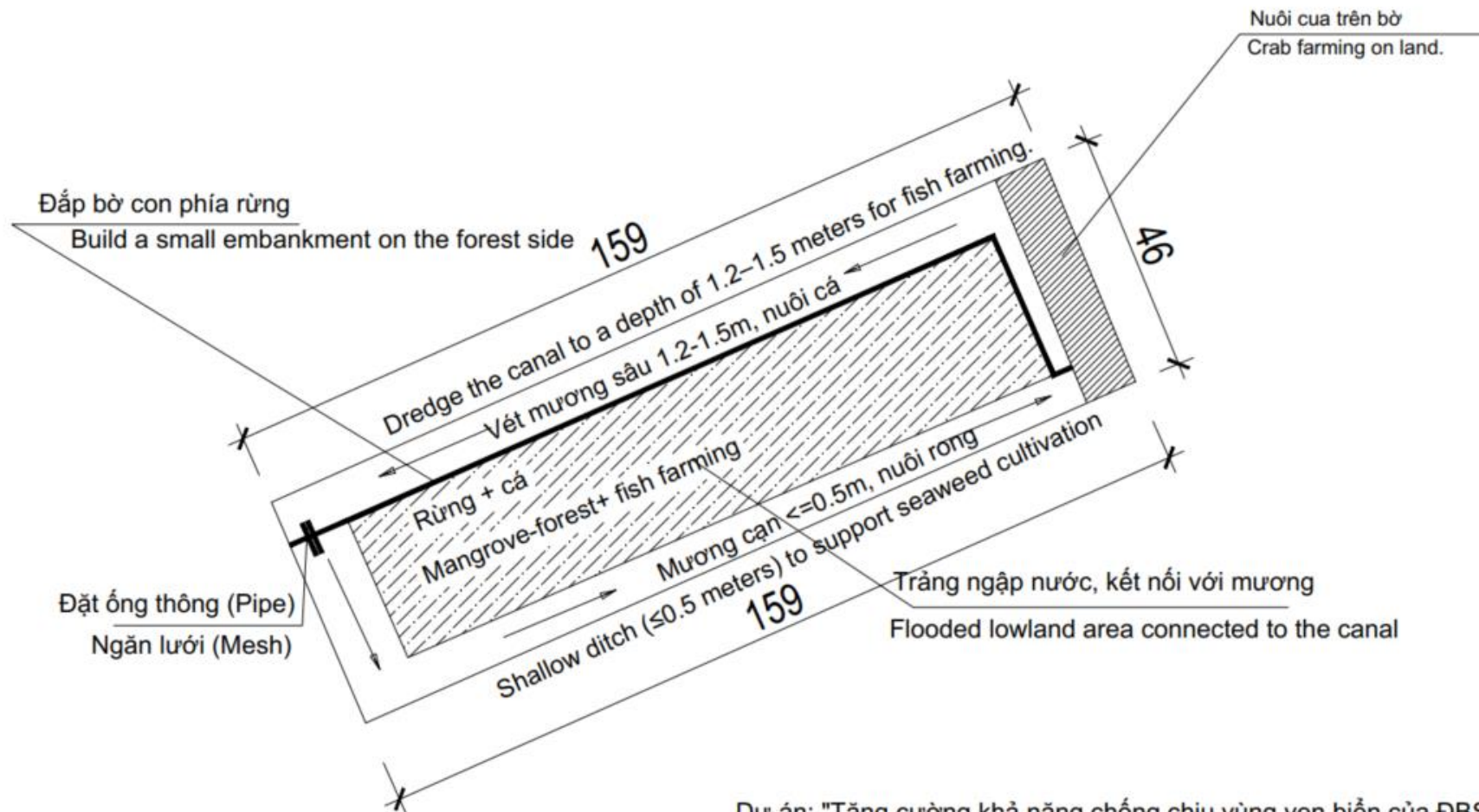
No	Component	Origin	Technical Specifications	Unit	Quantity
1	Recirculating crab housing unit	Vietnam	Each crab box measures 35 x 30 x 17 cm (L x W x H), with a double partition for additional crabs. A total of 150 boxes with a maximum capacity of 300 crabs per production cycle. Connected with PVC inlet and outlet pipes, and control valves integrated into a unified multi-tiered frame structure.	set	1
2	Biological filtration system (bead filter type)	Vietnam	Bead filter made of plastic, PVC or stainless steel, height 2–2.5 m, diameter 300–500 mm, with inlet and outlet ports, including PVC inlet/outlet piping. Integrated with passive solid waste separation and backwashing features. Functions to remove ammonia and total suspended solids (TSS).	set	1
3	UV sterilization chamber with beadfilter accessories	Vietnam	Power capacity: 50–55 W, used for water sterilization.	Unit	1
4	Recirculating water pump	Taiwan	Flow rate $\geq 3.5 \text{ m}^3/\text{h}$, used for recirculating water within the system.	Unit	1
5	Control cabinet + internal wiring	Vietnam	Controls pumps, bead filter system, and UV sterilization unit.	Unit	1
6	Recirculating water storage tank	Vietnam	Made of corrosion-resistant materials, capacity $\geq 200\text{L}$.	Unit	1
7	Intake water pump	Taiwan	Flow rate $> 3.5 \text{ m}^3/\text{h}$, used to pump water from mangrove area into the system.	Unit	1
8	Base platform for crab system	Custom-built	Constructed using high-strength load-bearing materials to support the entire crab housing unit.	set	1



Farm 4 (BL-11): Complete IMTA-RAS integrated recirculating crab farming module combined with mangrove system

No	Component	Origin	Technical Specifications	Unit	Quantity
1	Recirculating crab housing unit	Vietnam	Each crab box measures 35 x 30 x 17 cm (L x W x H), with a double partition for additional crabs. A total of 150 boxes with a maximum capacity of 300 crabs per production cycle. Connected with PVC inlet and outlet pipes, and control valves integrated into a unified multi-tiered frame structure.	set	1
2	Biological filtration system (bead filter type)	Vietnam	Bead filter made of plastic, PVC or stainless steel, height 2–2.5 m, diameter 300–500 mm, with inlet and outlet ports, including PVC inlet/outlet piping. Integrated with passive solid waste separation and backwashing features. Functions to remove ammonia and total suspended solids (TSS).	set	1
3	UV sterilization chamber with beadfilter accessories	Vietnam	Power capacity: 50–55 W, used for water sterilization.	Unit	1
4	Recirculating water pump	Taiwan	Flow rate $\geq 3.5 \text{ m}^3/\text{h}$, used for recirculating water within the system.	Unit	1
5	Control cabinet + internal wiring	Vietnam	Controls pumps, bead filter system, and UV sterilization unit.	Unit	1
6	Recirculating water storage tank	Vietnam	Made of corrosion-resistant materials, capacity $\geq 200\text{L}$.	Unit	1
7	Intake water pump	Taiwan	Flow rate $> 3.5 \text{ m}^3/\text{h}$, used to pump water from mangrove area into the system.	Unit	1
8	Base platform for crab system	Custom-built	Constructed using high-strength load-bearing materials to support the entire crab housing unit.	set	1

BL11



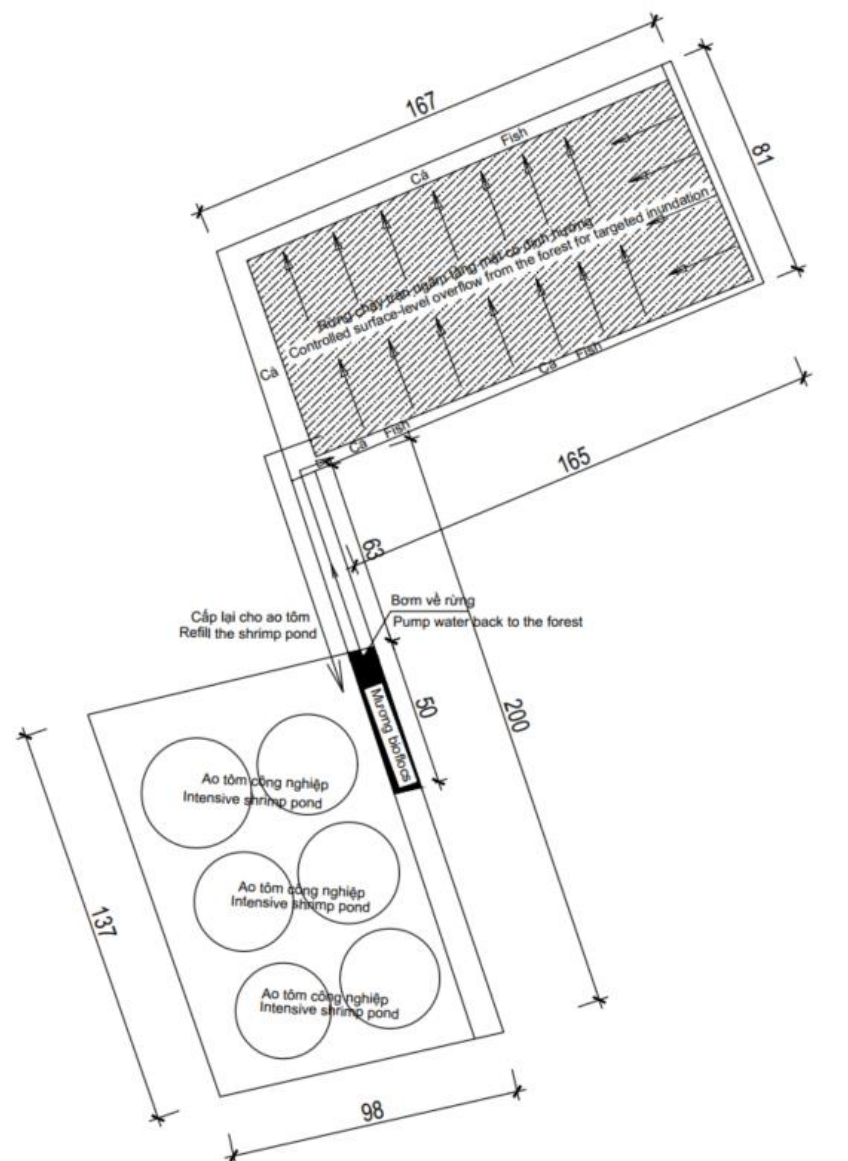
Dự án: "Tăng cường khả năng chống chịu vùng ven biển của ĐBSCL thông qua phục hồi rừng ngập mặn và các giải pháp dựa vào thiên nhiên"

Farm 5 (BL-12):

No.	Item	Origin	Technical Specifications	Unit	Quantity
1	High-lift water paddle wheel aerator	Vietnam	– 3HP motor, 220V single-phase, speed: 96 rpm– Motor box size: 64 × 32 × 32 cm, weight: 45 kg– – 3 paddle floats, 1.6 m long, 6.5 kg each – Cast paddle with stainless steel core, 6 blades, 2 kg, diameter: 65 cm– Frame: 8 mm thick stainless steel, 25 mm rim	unit	2
2	Custom-assembled water supply ozone treatment system	Vietnam	Water flow rate $\geq 90 \text{ m}^3/\text{h}$; corrosion-resistant; outlet pipe diameter: 114 mm; ozone generator: 10 g/h; integrated with venturi injector and control cabinet	set	1
3	Solar-powered waste discharge pump	Vietnam	Power: 200 W, 12V battery; floating aeration system for flow creation; includes bank-side mounting support	set	1
4	Biofloc solid waste aeration system	Taiwan	Longtech 80 includes: motor, base, tensioner, belt, inlet/outlet fittings, and control cabinet	set	1

Supply of ...

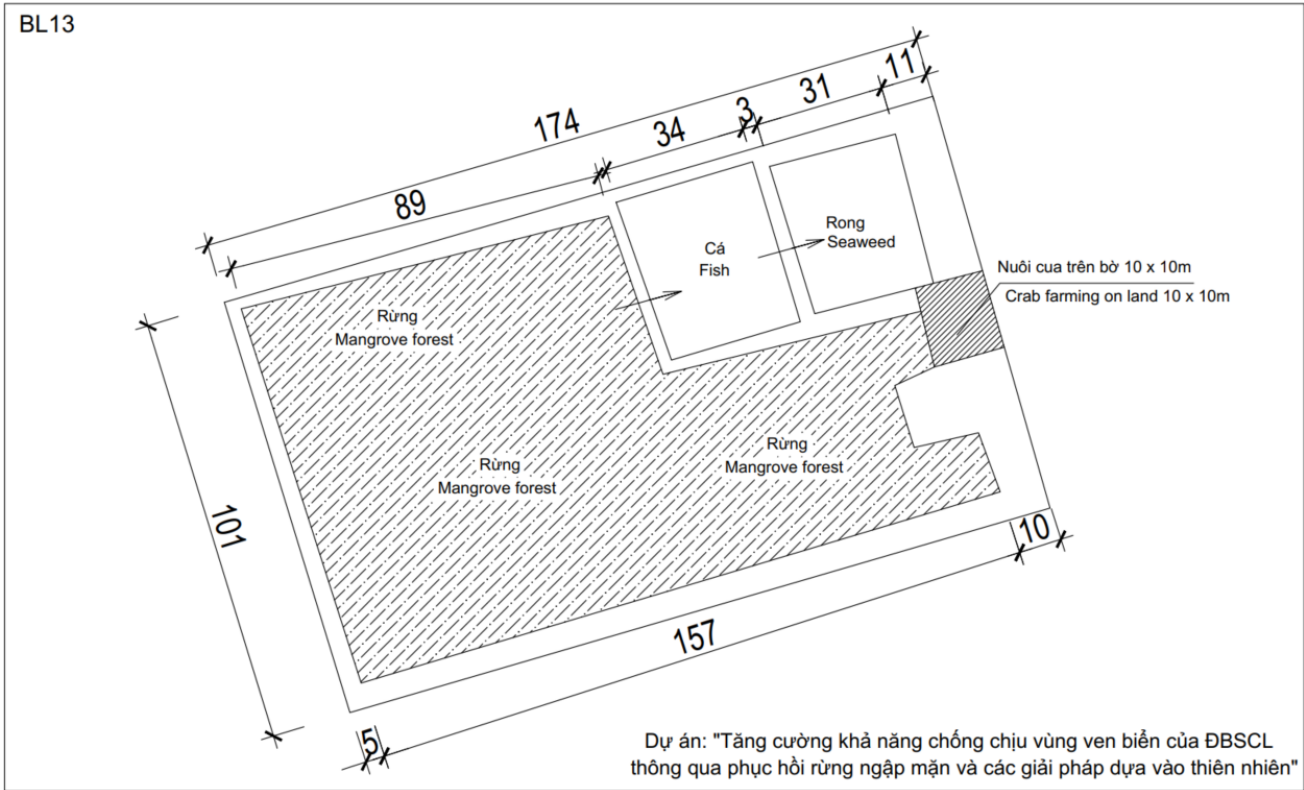
BL12



Dự án: "Tăng cường khả năng chống chịu vùng ven biển của ĐBSCL thông qua phục hồi rừng ngập mặn và các giải pháp dựa vào thiên nhiên"

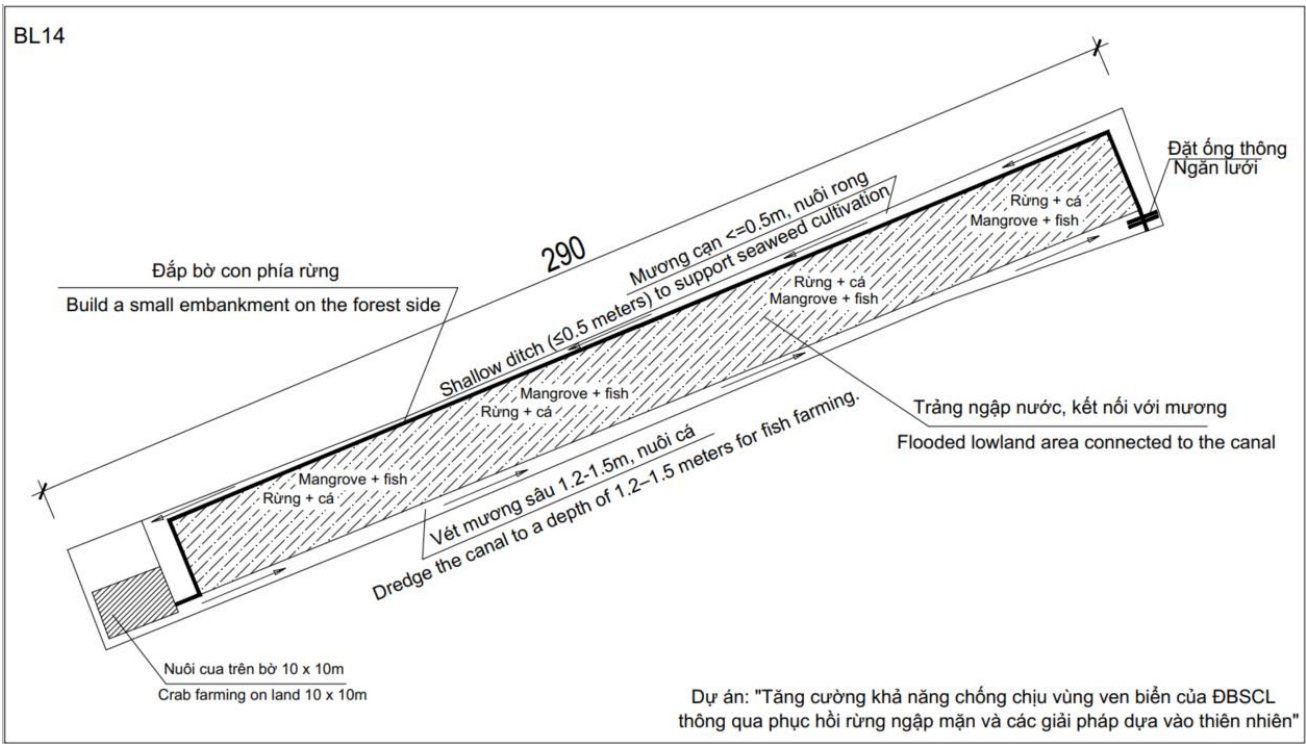
Farm 6 (BL-13): Complete IMTA-RAS integrated recirculating crab farming module combined with mangrove system

No	Component	Origin	Technical Specifications	Unit	Quantity
1	Recirculating crab housing unit	Vietnam	Each crab box measures 35 x 30 x 17 cm (L x W x H), with a double partition for additional crabs. A total of 150 boxes with a maximum capacity of 300 crabs per production cycle. Connected with PVC inlet and outlet pipes, and control valves integrated into a unified multi-tiered frame structure.	set	1
2	Biological filtration system (bead filter type)	Vietnam	Bead filter made of plastic, PVC or stainless steel, height 2–2.5 m, diameter 300–500 mm, with inlet and outlet ports, including PVC inlet/outlet piping. Integrated with passive solid waste separation and backwashing features. Functions to remove ammonia and total suspended solids (TSS).	set	1
3	UV sterilization chamber with beadfilter accessories	Vietnam	Power capacity: 50–55 W, used for water sterilization.	Unit	1
4	Recirculating water pump	Taiwan	Flow rate $\geq 3.5 \text{ m}^3/\text{h}$, used for recirculating water within the system.	Unit	1
5	Control cabinet + internal wiring	Vietnam	Controls pumps, bead filter system, and UV sterilization unit.	Unit	1
6	Recirculating water storage tank	Vietnam	Made of corrosion-resistant materials, capacity $\geq 200\text{L}$.	Unit	1
7	Intake water pump	Taiwan	Flow rate $> 3.5 \text{ m}^3/\text{h}$, used to pump water from mangrove area into the system.	Unit	1
8	Base platform for crab system	Custom-built	Constructed using high-strength load-bearing materials to support the entire crab housing unit.	set	1



Farm 7 (BL-14): Complete IMTA-RAS integrated recirculating crab farming module combined with mangrove system

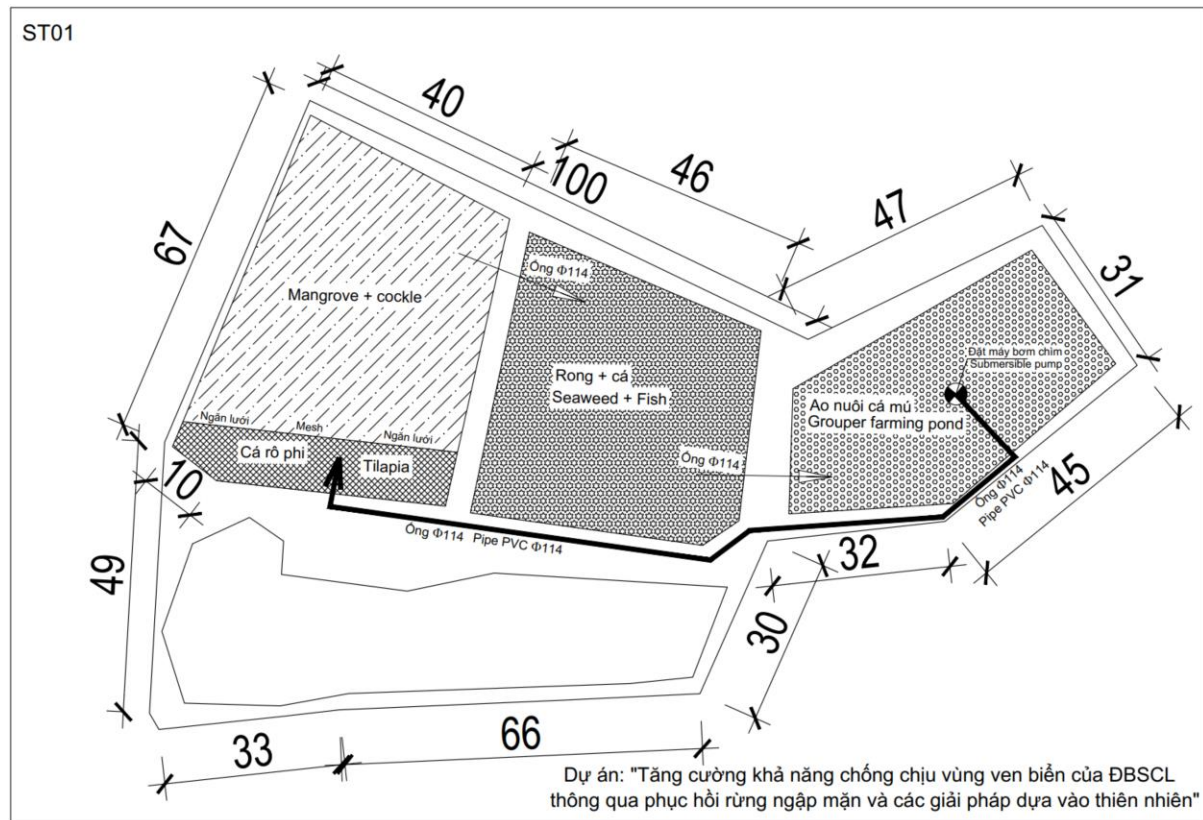
No	Component	Origin	Technical Specifications	Unit	Quantity
1	Recirculating crab housing unit	Vietnam	Each crab box measures 35 x 30 x 17 cm (L x W x H), with a double partition for additional crabs. A total of 150 boxes with a maximum capacity of 300 crabs per production cycle. Connected with PVC inlet and outlet pipes, and control valves integrated into a unified multi-tiered frame structure.	set	1
2	Biological filtration system (bead filter type)	Vietnam	Bead filter made of plastic, PVC or stainless steel, height 2–2.5 m, diameter 300–500 mm, with inlet and outlet ports, including PVC inlet/outlet piping. Integrated with passive solid waste separation and backwashing features. Functions to remove ammonia and total suspended solids (TSS).	set	1
3	UV sterilization chamber with beadfilter accessories	Vietnam	Power capacity: 50–55 W, used for water sterilization.	Unit	1
4	Recirculating water pump	Taiwan	Flow rate $\geq 3.5 \text{ m}^3/\text{h}$, used for recirculating water within the system.	Unit	1
5	Control cabinet + internal wiring	Vietnam	Controls pumps, bead filter system, and UV sterilization unit.	Unit	1
6	Recirculating water storage tank	Vietnam	Made of corrosion-resistant materials, capacity $\geq 200\text{L}$.	Unit	1
7	Intake water pump	Taiwan	Flow rate $> 3.5 \text{ m}^3/\text{h}$, used to pump water from mangrove area into the system.	Unit	1
8	Base platform for crab system	Custom-built	Constructed using high-strength load-bearing materials to support the entire crab housing unit.	set	1



b. Soc Trang province

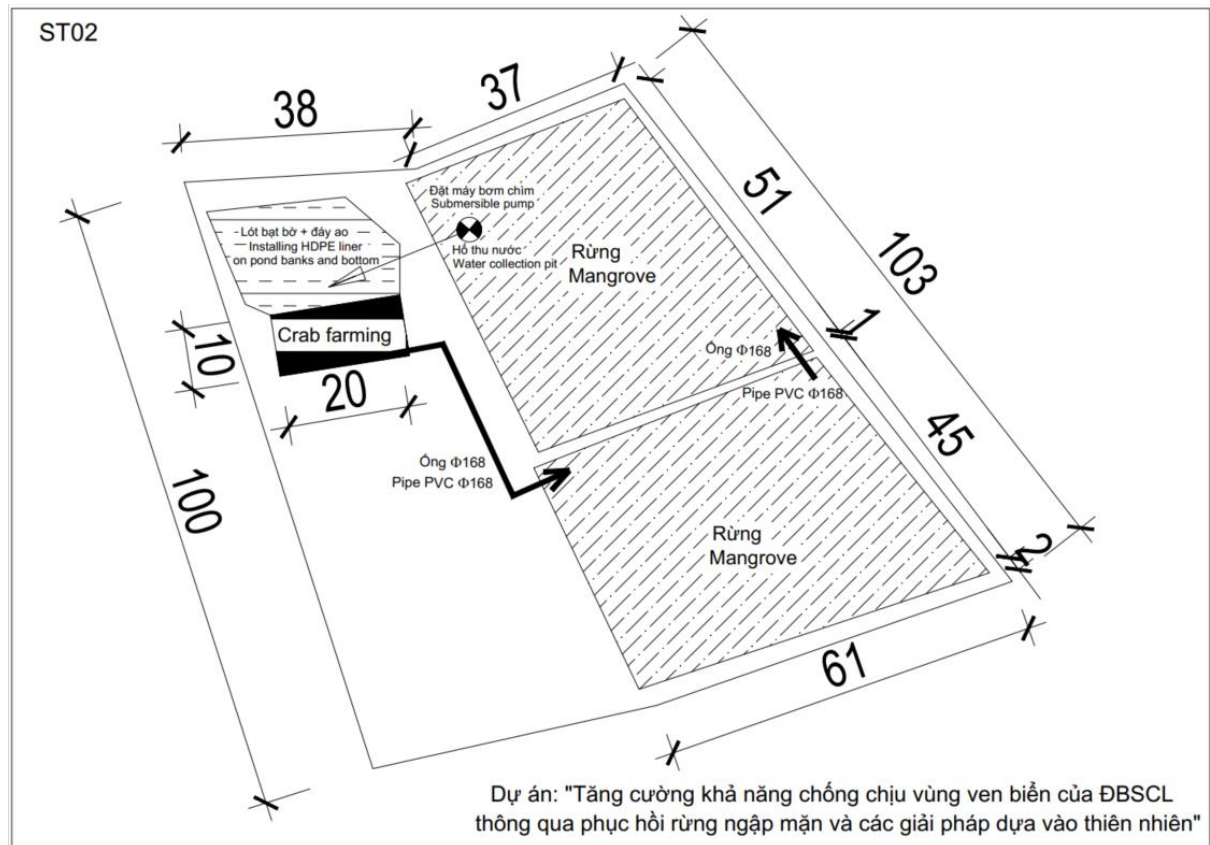
Farm 8 (ST 01)

No.	Item	Origin	Technical Specifications	Unit	Quantity
1	Grouper fingerlings	Vietnam	Size: 7–10 cm	Ind.	1000
2	Paddle wheel aerator	Vietnam	– 3HP motor, 220V single-phase, speed: 96 rpm– Motor housing size: 64 × 32 × 32 cm, weight: 45 kg– 3 paddle floats, 1.6 m long, 6.5 kg each– Cast paddle blades with stainless steel core, 6 blades, 2 kg, diameter: 65 cm– Stainless steel frame: 8 mm thick, 25 mm rim	unit	2
3	Water pump	Vietnam	Water flow rate $\geq 90 \text{ m}^3/\text{h}$; corrosion-resistant; outlet pipe diameter: 114 mm	unit	2
4	Flexible water hose	Vietnam	Diameter: 114–200 mm	m	150
5	Solar-powered venturi aerator	Vietnam	Power: 200 W, 12V battery; floating aeration system for water circulation; includes bank-side mounting stand and control cabinet	unit	2



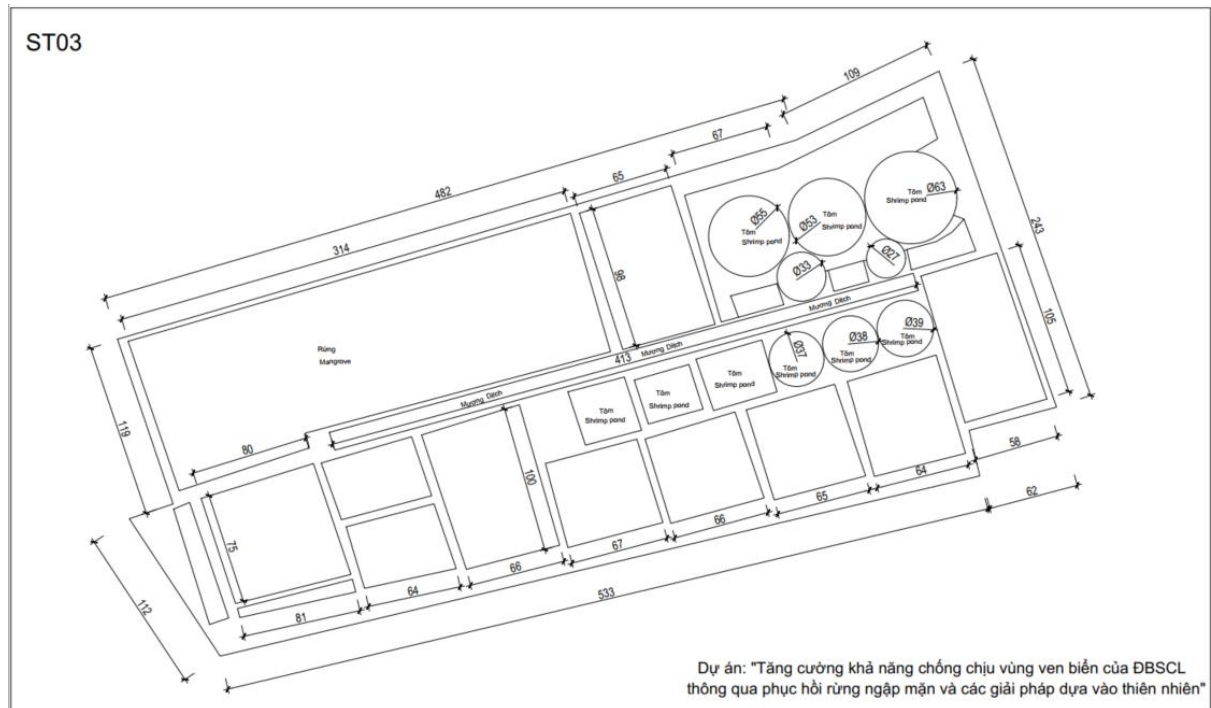
Farm 9 (ST-02): Complete IMTA-RAS integrated recirculating crab farming module combined with mangrove system

No	Component	Origin	Technical Specifications	Unit	Q'ty
1	Recirculating crab housing unit	Vietnam	Each crab box measures 35 x 30 x 17 cm (L x W x H), with a double partition for additional crabs. A total of 150 boxes with a maximum capacity of 300 crabs per production cycle. Connected with PVC inlet and outlet pipes, and control valves integrated into a unified multi-tiered frame structure.	set	1
2	Biological filtration system (bead filter type)	Vietnam	Bead filter made of plastic, PVC or stainless steel, height 2–2.5 m, diameter 300–500 mm, with inlet and outlet ports, including PVC inlet/outlet piping. Integrated with passive solid waste separation and backwashing features. Functions to remove ammonia and total suspended solids (TSS).	set	1
3	UV sterilization chamber with beadfilter accessories	Vietnam	Power capacity: 50–55 W, used for water sterilization.	Unit	1
4	Recirculating water pump	Taiwan	Flow rate $\geq 3.5 \text{ m}^3/\text{h}$, used for recirculating water within the system.	Unit	1
5	Control cabinet + internal wiring	Vietnam	Controls pumps, bead filter system, and UV sterilization unit.	Unit	1
6	Recirculating water storage tank	Vietnam	Made of corrosion-resistant materials, capacity $\geq 200\text{L}$.	Unit	1
7	Intake water pump	Taiwan	Flow rate $> 3.5 \text{ m}^3/\text{h}$, used to pump water from mangrove area into the system.	Unit	1
8	Base platform for crab system	Custom-built	Constructed using high-strength load-bearing materials to support the entire crab housing unit.	set	1



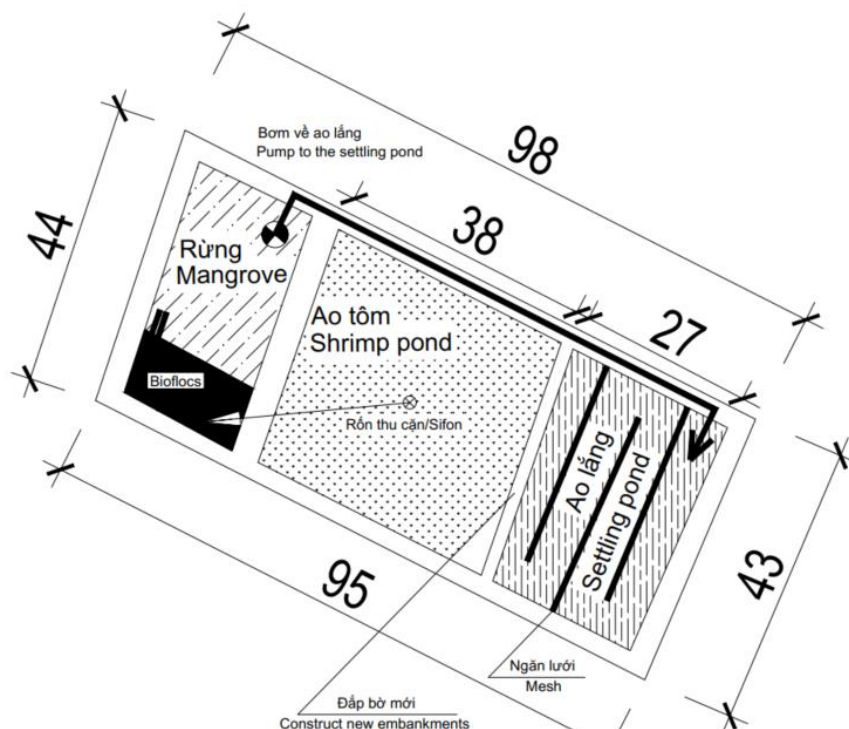
Farm 10 (ST-03):

No.	Item	Origin	Technical Specifications	Unit	Quantity
1	Submersible oxygen aerator	Vietnam	Oxygen Pump – Submersible Type • Power: 1.5 HP • Voltage: 220V • Motor weight: 15 kg • Float system: Two double floats supporting the motor • Design: The motor is fully submerged in water • Function: An air intake pipe draws in atmospheric air, combining with a propeller to create a vortex water flow mixed with fine air bubbles	unit	4
2	Drumfilter	Vietnam	Wastewater filtration capacity $\geq 100 \text{ m}^3/\text{hr}$. Composite or stainless steel casing. Dimensions suitable for RAS system: width 0.9 m $\times$ height 1–1.1 m $\times$ length 2.1 m. Equipped with two water inlets (114 mm diameter each) and two outlets (114 mm diameter). Operates on single-phase or three-phase electricity. Includes waste collection and secondary filtration system.	unit	1
3	Water pump	Vietnam	Water flow rate $\geq 90 \text{ m}^3/\text{h}$; corrosion-resistant; outlet pipe diameter: 114 mm	unit	2
4	Electrical cabinet	Vietnam	One per equipment unit	unit	7



Farm 11 (ST-04):

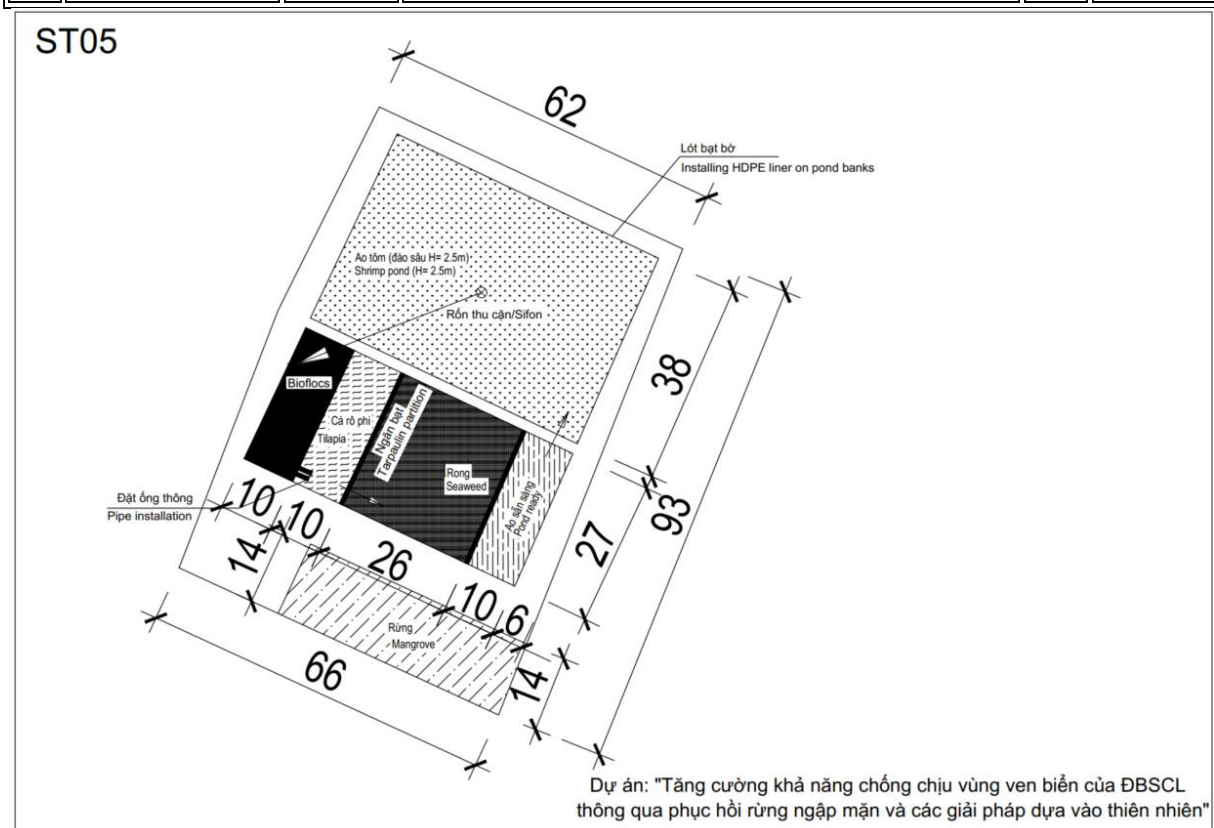
No.	Item	Origin	Technical Specifications	Unit	Quantity
1	Water fan	Vietnam	– Motor: 3HP, 220V single-phase – Speed: 96 rpm – Motor housing dimensions: 64 × 32 × 32 cm – Weight: 45 kg – 3 paddles, 1.6 m long, 6.5 kg each – Cast fan blades, stainless steel core, 6 blades, 2 kg each, 65 cm diameter – Stainless steel frame: 8 mm thick, 25 mm wide	unit	5
2	Recirculation pump	Vietnam	Water flow rate $\geq 90 \text{ m}^3/\text{h}$; corrosion-resistant; outlet pipe diameter: 114 mm	unit	1
3	Electrical cabinet	Vietnam	Control panel cabinet type with motor	unit	6
4	Electrical wiring for equipment	Vietnam	For installation of fans and water pumps	set	1

ST04

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Farm 12 (ST-05)

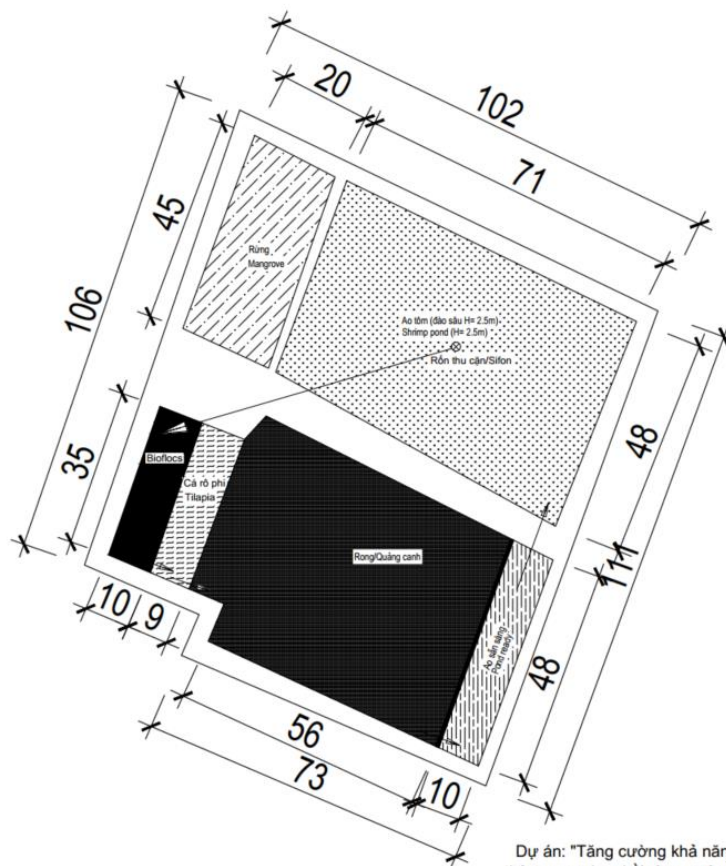
No.	Item Description	Origin	Technical Specifications	Unit	Quantity
1	Water Fan	Vietnam	- Motor: 3HP, 220V single-phase – Speed: 96 rpm - Motor housing dimensions: 64 × 32 × 32 cm - Weight: 45 kg 3 paddles, 1.6 m long, 6.5 kg each - Cast aluminum fan blades, stainless steel core, 6 blades, 2 kg each, 65 cm diameter - Stainless steel frame: 8 mm thick, 25 mm wide	unit	5
2	Recirculation Pump	Vietnam	Water flow rate $\geq 90 \text{ m}^3/\text{h}$; corrosion-resistant; 114 mm outlet pipe	unit	1
3	Electrical Cabinet	Vietnam	Control cabinet type with motor included	unit	6
4	Equipment Wiring	Vietnam	For installation with fans and pumps	set	1



Farm 13 (ST-06)

No.	Item Description	Origin	Technical Specifications	Unit	Quantity
1	Water Cooling Fan	Vietnam	- Motor: 3HP, 220V single phase, speed: 96 rpm - Motor box dimensions: 64 x 32 x 32 cm; weight: 45 kg - 3 paddle blades, 1.6 m long, 6.5 kg each - Cast fan blades with stainless steel core, 6 blades, 2 kg total, 65 cm diameter - Stainless steel frame: 8 mm thick, 25 mm rim	pc	5
2	Recirculation Pump	Vietnam	Water flow rate $\geq 90 \text{ m}^3/\text{h}$; corrosion-resistant; outlet pipe diameter: 114 mm	pc	1
3	Electrical Control Cabinet	Vietnam	Control panel type, integrated with motor	pc	6
4	Power Cable for Equipment	Vietnam	Assembled for fan and pump operation	pack	1

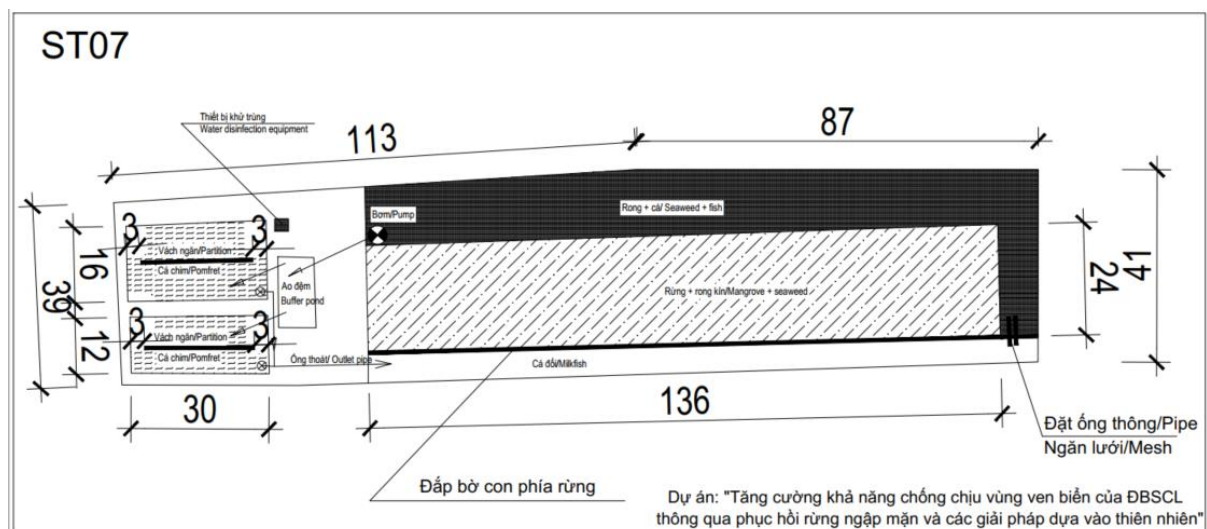
ST06



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Farm 14 (ST-07)

No.	Item Description	Origin	Technical Specifications	Unit	Quantity
1	Water Cooling Fan	Vietnam	- Motor: 3HP, 220V single phase, speed: 96 rpm - Motor housing dimensions: 64 x 32 x 32 cm, weight: 45 kg - 3 paddle blades, 1.6 m long, 6.5 kg each - Cast fan blades with stainless steel core, 6 blades, weight 2 kg, diameter 65 cm - Stainless steel frame: 8 mm thick, 25 mm rim	pc	2
2	Solar Venturi Aerator	Vietnam	Power: 200 W, 12V battery; floating aeration venturi system for water circulation; pole mounted at pond bank; includes electrical control box	pc	1
3	Water Pump	Vietnam	Flow rate $\geq 90 \text{ m}^3/\text{h}$; corrosion-resistant; outlet pipe diameter: 114 mm	pc	1
4	Drum Filter	Vietnam	Filtration capacity $\geq 100 \text{ m}^3/\text{hr}$. Casing made of composite or stainless steel. Suitable for RAS systems. Dimensions: 0.9 m (W) x 1–1.1 m (H) x 2.1 m (L). Includes 2 water inlets ($\text{Ø}114 \text{ mm}$) and 2 outlets ($\text{Ø}114 \text{ mm}$). Operates on single or three-phase power. Includes sludge collection and secondary waste filtration system	pc	1
5	Electrical Control Cabinet	Vietnam	Dedicated control unit for each motor	pc	4
6	Electrical Wiring	Vietnam	For internal electrical installation within the pond system	set	1



SUMMARY LIST OF EQUIPMENT FOR 14 RAS MODELS

◆ Integrated Crab Farming System (IMTA-RAS with Mangrove Integration)

Applies to Farm: BL08, BL09, BL10, BL11, BL13, BL14, ST-02

No.	Equipment	Description	Origin	Unit	Total Qty
1	Recirculating crab housing unit	Modular unit with 150 boxes (35×30×17 cm each), double partitioned, capacity up to 300 crabs. Integrated piping and multi-tiered frame.	Vietnam	Set	7
2	Biological filtration system (bead filter type)	Bead filter (plastic/PVC/stainless steel), H: 2–2.5 m, D: 300–500 mm. Removes ammonia and TSS. Includes solid waste separation and backwash.	Vietnam	Set	7
3	UV sterilization chamber	Power: 50–55W; sterilizes water, integrated with beadfilter accessories.	Vietnam	Unit	7
4	Recirculating water pump	Flow rate $\geq 3.5 \text{ m}^3/\text{h}$; for internal system circulation.	Taiwan	Unit	7
5	Control cabinet + wiring	Manages pump, bead filter, and UV system.	Vietnam	Unit	7
6	Recirculating water storage tank	Corrosion-resistant, capacity $\geq 200\text{L}$.	Vietnam	Unit	7
7	Intake water pump	Flow rate $> 3.5 \text{ m}^3/\text{h}$; pumps water from mangrove into system.	Taiwan	Unit	7
8	Base platform for crab system	Custom-built high-strength base to support housing unit.	Custom-built	Set	7

◆ Aeration, Waste Management, and Grouper Support Systems

Applies to Farm: BL-12, ST-01, ST-03, ST-04, ST-05, ST-06, ST-07

No.	Equipment	Description	Origin	Unit	Total Qty
9	High-lift paddle wheel aerator	3HP, 220V motor, 96 rpm; with 3 floats, 6-blade cast paddles, stainless steel frame.	Vietnam	Unit	4
10	Submersible oxygen aerator	Submersible design for oxygenation.	Vietnam	Unit	4
11	Water supply ozone system	Water flow ≥ 90 m ³ /h, outlet 114 mm; ozone 10 g/h with venturi injector and cabinet.	Vietnam	Set	1
12	Biofloc solid waste aeration system	Longtech 80, with motor, base, tensioner, belt, fittings, cabinet.	Taiwan	Set	1
13	Solar-powered waste discharge pump	200W, 12V battery, floating aeration, bank-side support.	Vietnam	Set	1
14	Solar-powered venturi aerator	200W, 12V, with float and control system.	Vietnam	Unit	2
15	Drumfilter	≥ 100 m ³ /h, composite/stainless steel, 0.9×1.0×2.1 m; 2×114 mm inlets/outlets. Includes secondary filtration.	Vietnam	Unit	1
16	Water pump	≥ 90 m ³ /h, corrosion-resistant, 114 mm outlet pipe.	Vietnam	Unit	6
17	Flexible water hose	Diameter: 114–200 mm.	Vietnam	Meter	150
18	Electrical cabinet	One per equipment unit; electrical distribution and control.	Vietnam	Unit	7
19	Grouper fingerlings	Size: 7–10 cm; seed stock.	Vietnam	Ind.	1000