



## Terms of Reference

<b>Title</b>	<b>: Laboratory Equipment and Techniques</b>
<b>Client</b>	<b>: Phuoc Binh, Toan Thang and Hoa Nho coop</b>
<b>Country</b>	<b>: Vietnam</b>
<b>Project number</b>	<b>: 24ATVN-9764</b>
<b>Period</b>	<b>: February to November 2025</b>
<b>Cooperative advisor (CA)</b>	<b>: Tran Quang Dieu</b>

### *Introduction cooperative*

**Toan Thang Aquaculture Cooperative (TTC)**, located in Vinh Hiep commune, Vinh Chau township, Soc Trang province, Vietnam, started in 2016 with 24 members and has since grown to 72 members. Over the past eight years, TTC has achieved notable progress, including increased membership, a solid business foundation with robust supplier and buyer relationships, and clear goals for enhancing the shrimp value chain.

Established in 2020, **Phuoc Binh Cooperative** is a burgeoning community in Tra Vinh. Despite its recent inception, the cooperative has attracted 18 dedicated primary members. It places a significant emphasis on engaging young people in its activities, as evidenced by its inclusion of 1 youth member. Phuoc Binh Cooperative is poised to grow and make a notable impact in the region.

**Hoa Nho Cooperative** (Soc Trang Province) operates over 53 hectares with 25 members, primarily producing for high-value export markets. Since its inception in 2016, Hoa Nho Cooperative has grown to 25 primary members, managing 53 hectares of shrimp farming. The cooperative produces 3,012 MT of shrimp annually, much of which is exported to high-value markets, including the EU, USA, Japan, and South Korea.

### *Background of the assignment*

After conducting the Strategic Business Plan (SBP) and some technical audit with several private sector partners such as Nutreco/Skretting, VNF, and Bio Global Holdings, Agriterra identified significant challenges faced by Toan Thang Phuoc Binh and Hoa Nho Cooperative in disease control and shrimp health management. These issues were primarily attributed to the lack of necessary equipment and knowledge for monitoring water quality and diagnosing shrimp diseases. Farmers in these cooperatives largely rely on their own experience and observation to manage shrimp culture, which limits their ability to address health and environmental challenges effectively. To ensure improved shrimp farming performance within the cooperatives by monitoring water quality, identifying potential health risks, and preventing diseases, Agriterra recommends organizing a specialized training course. This course will focus on shrimp health management, disease control, water quality analysis, and bacteria count using professional laboratory techniques. Priority should be given to training 1–2 young cooperative members,

preferably women, to foster skill development, promote gender inclusion, and enhance knowledge transfer within the cooperatives

### **Main objective**

To enhance shrimp farming performance and sustainability within the Toan Thang, Phuoc Binh, Hoa Nho, and other cooperatives by equipping selected members with the knowledge and technical skills needed for water quality monitoring, disease control, and shrimp health management through professional lab technician training.

### **Specific objectives**

- Train 4 - 5 young members (preferably women) from each cooperative to build capacity in shrimp health management, water quality analysis, disease diagnosis, and bacteria counting using professional laboratory techniques.
- Strengthen cooperatives' ability to monitor and manage water quality effectively, ensuring healthier shrimp farming practices and reduced disease outbreaks.
- Promote knowledge transfer and gender inclusion by empowering trained members to share acquired skills with other cooperative members.
- Establish a foundation for improved shrimp farming productivity and sustainability through the application of scientific and data-driven techniques.

### **Expected results**

1. Improved Technical Skills: Trained members gain expertise in water quality monitoring, disease diagnosis, and lab-based techniques.
2. Better Shrimp Health: Enhanced disease control minimizes outbreaks, improving shrimp survival rates and overall health.
3. Increased Productivity: Sustainable practices boost yields, reduce costs, and enhance profitability for cooperatives.
4. Empowerment and Inclusivity: Training young members, especially women, promotes gender inclusion and strengthens cooperative resilience.

### **Specific tasks of the consultant**

1. Design and Deliver Training: Develop and conduct a comprehensive curriculum on shrimp health management, water quality monitoring, and lab-based disease diagnosis.
2. Practical Guidance and Equipment Setup: Provide hands-on demonstrations for using laboratory equipment and techniques for water analysis and shrimp health diagnostics.
3. Capacity Building and Knowledge Transfer: Train participants to document, analyze, and apply laboratory results, ensuring long-term skill development within the cooperatives.
4. Post-Training Support and Reporting: Offer follow-up support, provide feedback on challenges, and prepare reports with recommendations to enhance farming practices.

### **Required Qualifications for the Consultant**

- A MSC degree in Aquaculture or Pathology or a related field.
- Advanced certifications or training in laboratory management, water quality analysis, or shrimp health management would be highly beneficial.
- Proven experience in aquaculture, specifically in shrimp farming, disease management, and water quality monitoring.
- Hands-on experience in laboratory settings for water quality testing, disease diagnosis, and bacteria counting in aquatic species.

- Previous involvement in conducting technical training or workshops related to aquaculture or laboratory techniques.
- In-depth knowledge of water quality parameters (e.g., pH, ammonia, dissolved oxygen, salinity) and their impact on shrimp health.
- Expertise in laboratory techniques for disease diagnosis, including PCR testing, bacteria culture, and pathogen identification.

### **Application Process**

1. **Submission of Application:** Interested aquaculture experts are required to submit their applications, including
  - 05-page max proposal with specific timelines and activities align with the Arterra’s assignment. The proposal should demonstrate experience in sustainable aquaculture practices and technology adoption following different models of shrimp farming from low to high stocking density with suitable infrastructure of cooperatives. Detailed will be discussed during interview.
  - Daily consultancy rate and estimated total cost

Application should be submitted in English by email with the subject mentioning “name, aquaculture technical support consultancy” to [vietnam@agriterra.org](mailto:vietnam@agriterra.org)  
 The closing date for application: 17.00, February 15, 2025

2. **Interviews and Selection:** Shortlisted candidates will be contacted for interviews, where they will discuss their proposed approach, methodology, and relevant experience. The final selection will be made based on the candidate's alignment with the assignment goals and the MACIB project needs.

### **Budget**

The budget will be developed in close coordination with Agriterra, the cooperatives and private sectors (If needed) through co-investment. Key budget items include:

- Demonstration Farms: Infrastructure and technology setup.
- Monitoring and Evaluation: Travel expenses, field visits, and reporting costs.

### **Assignment details**

- Composition of the Agriterra assignment team:
  - Tran Quang Dieu – CA
  - Pham Nguyen Duy – CA
  - Nguyen Thi Thang Trang - CA
- Duration of the assignment: The time frame of the assignment will be 12 days in the period of 3/02/2025-28/02/2025 (including 2 days for proposal preparation, 5 days for training course including equipment like shrimp sample preparation, test kits and lab, 5 days for reporting)
- Arrangements: Agriterra will arrange and cater for flight, hotel, transportation, programme for the Agriterra assignment team.

## Agriterra, for cooperatives

We are a purpose-driven organisation, aimed at strengthening farmer cooperatives in 13 countries in Africa and Asia. Agriterra's wheel of impact depicts how strong farmer cooperatives contribute to societal development and the relevance to many of the Sustainable Development Goals of the United Nations.

Positively impacting farmer cooperatives is at the heart of our identity and is reflected in our legal entity as a Dutch non-profit foundation.



Agriterra provides high quality and hands-on advice, training and exchange services to farmer cooperatives with maximum impact to support dynamic, economic and sustainably strong and productive rural areas. We draw on a century of cooperative knowledge in the Netherlands shared through our extensive network in the Dutch agri-food sector. These Agripool experts from farmer organisations across the world work with Cooperative advisors from our country offices, supported by staff teams in the Netherlands.

In 2022 Agriterra worked together with 579 farmer organisations, trained 8,989 people and 3,808,366 farmers were reached.