



## 3<sup>rd</sup> INTERNATIONAL SYMPOSIUM INTEGRATED AGRICULTURE AND AQUACULTURE AND WATER RESOURCE MANAGEMENT

### Executive Summary

The Food and Agriculture Organization of the United Nations is convening the International Symposium on Integrated Agriculture Aquaculture (IAA), with a special focus on Integrated Water Resources Management (IWRM). The symposium will take place from 19-21 September 2024 in Shanghai, China.

This event, the third in a series, will be hosted by the Centre for Ecological Aquaculture of the Shanghai Ocean University, China. It aims to provide a platform for decision-maker, scientists, students, practitioners and other stakeholders engaged in IAA practices around the world to exchange knowledge and experiences on how IAA practices have contributed to integrated water resource management. Participants will also explore how these practices contribute towards achieving the FAO Four Betters, Blue Transformation, and the FAO Guidelines for Sustainable Aquaculture and other global development agendas.

### Background

Integrated Agriculture Aquaculture (IAA) can increase food production while simultaneously conserving the environment and enhancing resilience to climate change. IAA improves food security and nutrition by promoting the integration of aquaculture within the wider farming system, thereby contributing to dietary diversity and livelihood diversification. Hence, IAA is increasingly regarded as an effective strategy for addressing challenges of achieving development goals related to food production, the effective utilization and management of water for agricultural production, and the promotion of sustainable development in the aquaculture sector.

The global food system, including the aquaculture sector, faces many challenges, including climate change, degradation of ecosystems, biodiversity loss, natural resources scarcity, water access and quality limitations, and many others. Water is a common thread to many of these challenges, whether it be from drought or floods, changing rainfall patterns, rising sea level and salt inundation, or agricultural or industrial pollution. FAO's "The State of the World's Land and Water Resources for Food and Agriculture: Systems at breaking point" indicates that land, soil, and freshwater systems are being pushed to their productive limits, underscoring that transformation in the global food system is urgently needed. FAO's Guidelines for Sustainable Aquaculture, adopted by the 36<sup>th</sup> Session of the FAO Committee on Fisheries, identifies holistic and integrated approaches as a guiding principle, urging stakeholders to recognize, adopt and implement the Ecosystem Approach to Aquaculture as a key strategy for the integration of aquaculture activities within the wider ecosystem such that it promotes sustainable development, equity, and resilience of interlinked social-ecological systems and ensures effective coordination among the various relevant sectors and reconciles economic, social, and environmental objectives, and ensuring the integration of aquaculture in a sustainable food system approach.

In March 2023, the UN Water Conference was held in New York and called on stakeholders from all sectors to accelerate implementation and increase their influence to address the broad challenges surrounding water, and to mobilize all other water related departments to improve the management and utilization of water resources, helping to achieve water actions in the 2030 Agenda for Sustainable Development.

Noting this context, FAO and SHOU have identified “Integrated Water Resource Management” as the overarching theme for the 3<sup>rd</sup> International Symposium on IAA. Participants will present a detailed overview of past, current, and future trends of IAA and IWRM towards improved food production, diets, water management and conservation.

## **Purpose**

The symposium will provide an opportunity to share short narratives about their work on the development of IAA farming strategies and technologies. These narratives or stories will highlight significant changes at the farmer/community level, illustrating how the promotion of IAA, within the context of IWRM, has contributed towards the FAO Four Betters (*better production, better nutrition, a better environment, and a better life, leaving no one behind*), Blue Transformation, and the Guidelines for Sustainable Aquaculture as well as wider global agendas such as biodiversity conservation, climate change adaptation and wetlands conservation (e.g. the Global Biodiversity Framework, the Ramsar Convention, the Paris Agreement, and Agenda 2030).

The symposium objectives are as follows:

- Understand the trends of integrated agriculture and aquaculture and water resource management, noting the opportunities for contributing to global developmental agendas
- Share progressive IAA technologies, innovations, strategies, models, and findings
- Document successful stories and case studies on how IAA contributes to wider sustainable development to support advocacy for IAA’s inclusion in broad development strategies

A Proceedings Report will document the presentations and case studies, and the information will be summarized as a background document to support future advocacy of the inclusion of aquaculture in integrated water management strategies, highlighting the additional benefits for enhancing climate change resilience and conserving biodiversity.

## **Approach and Process**

This 3-day symposium will consist of keynote addresses, a series of case study presentations, and field visits. The symposium will compile a series of impactful and engaging stories about the beneficial changes that IAA, in the context of IWRM, have brought to farming families and communities.

## **Participation**

Participants will be represented by research and development institutions, and government representatives.

A “call for abstracts” was circulated by FAO, and submitted proposals were evaluated by a selection committee. Selected Authors will be invited to present their case study or story as a brief presentation during the symposium, and submit a short background paper to be published as part of the symposium proceedings.

The symposium is open to invited members of the Global Sustainable Aquaculture Advancement Partnership, a platform for supporting and sharing innovation in aquaculture.

## **Date and Location**

The symposium will be held in Shanghai, China from 19–21 September 2024 and hosted at Shanghai Ocean University in Shanghai, China.

### **Hotel**

#### **Taorui Hotel**

No. 266, Lane 699,

Huchenghuan Road, Lingang New City,

Pudong New Area, Shanghai

Website: [www.trip.com/hotels/shanghai-hotel-detail-108653849/taorui-hotel/](http://www.trip.com/hotels/shanghai-hotel-detail-108653849/taorui-hotel/)

### **Symposium venue**

**Shanghai Ocean University**

Room 109, Marine Technology Building,  
No.999, Huchenghuan Road,  
Pudong New Area, Shanghai

## Symposium contacts and travel

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### The contact at FAO:

Mr Austin Stankus  
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### The contact at SHOU:

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### Logistics and costs

International travel (round trip economy airfare), airport transfers, full accommodation, and meals for invited participants are fully covered by the organizers. Other participants are also encouraged to attend on their own funding.

For invited participants, flight reservations for international travel will be arranged by SHOU. No arrangements or payments will be made for accompanying spouses/partners.

### Visa:

Please contact the Chinese Embassy or Chinese Consulate in your area to request your visa for travel to China. SHOU will assist in preparing the invitation letter and other materials required for visa application. **Visas are the responsibility of the participants.**

## Symposium Overview of Activities

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### Day 0: 18 September

Arrival and registration: SHOU will arrange vehicles to pick participants up to the hotel from the airport based on confirmed flight information.

### Day 1: 19 September

The main events include the opening of the symposium, keynote speeches and thematic presentations. After the opening ceremony and invited keynote speeches outlining the current development status and trends of the IAA in improving IWRM, participants will present their work on IAA and IWRM. They will highlight the current state of IAA development in the context of IWRM in their respective countries, and use case studies to illustrate its application to achieving development objectives, including sustainable food production and food security.

### Day 2: 20 September

Continuing from day 1, the participants will share their experiences in implementing IAA, including presentations on emerging IAA technologies and innovations, and discuss the specific impacts of IAA in achieving the Four Betters. During the closing session, participants will summarize and express their views on how IAA farming strategies and technologies have contributed to and promoted IWRM. They are expected to produce a concise narrative about how IAA has facilitated progress towards the FAO Four Betters.

### Day 3: 21 September

The goal of this day is to visit three field sites, including: 1) The Qingpu Water Management Area, a demonstration project which incorporates elements of scientific research and ecological teaching for effective management of aquaculture effluent and sediment control; 2) The Jinhai Lake ecological bank protection project, a comprehensive ecological construction project that integrates multiple functions such as flood control and drainage, urban ecological tourism, urban water resources, comprehensive utilization and treatment, ecological water conservation and ecological service improvement; and 3) The Chongming Dongtan Wetland Park, rice-fish farming demonstration which serves as critical habitat for birds.

The purpose of these field visits is to enable participants to understand the importance and necessity of IWRM for IAA. This understanding will help in determining the aspects of IAA's IWRM that deserves more attention, and provide additional insights for the participants, offering guidance for future and ongoing actions to achieve the common goals and expectations of this symposium.

### Departure: 22 September

SHOU will arrange vehicles to transport the participants to the airport or train station according to the travel demands.

## Provisional Agenda of Activities

DAY 1: 19 SEPTEMBER	
<b>Opening ceremony</b>	
08:30-09:00	<p>Opening ceremony</p> <p><b>Li Lifeng tbc</b> Director, Land and Water Division, FAO</p> <p><b>TBD</b> Bureau of Fisheries, Ministry of Agriculture and Rural Affairs of China</p> <p><b>Rong Wan</b> President, Shanghai Ocean University</p> <p><b>TBD</b> Shanghai Municipal Education Commission</p>
09:00-09:30 <i>Group photo + tea break</i>	
<b>Keynote speeches</b>	
09:30-12:00	<p>Integrated Water Resources Management for Fisheries and Aquaculture</p> <p><b>Amani Alfarrar tbc</b> Food and Agriculture Organization</p> <p>Water: connecting agriculture and aquaculture</p> <p><b>Nicholas Innes-Taylor</b> Food and Agriculture Organization</p> <p>Sustainable development in Lao PDR through integrated watershed management</p> <p><b>TBD</b> Department of Livestock and Fisheries, Lao People's Democratic Republic</p> <p>Questions and answers</p>
12:00-13:30 <i>Lunch</i>	
<b>Session 1: Better production</b>	
13:30-15:00	<p>Changing the food production landscape in Nigeria through farm diversification process – modifying rice fields for fish production</p> <p><b>Emmanuel Ajani</b> University of Ibadan, Nigeria</p> <p>Raising fish in the terraced paddy ecosystem enhances water storage and production in hilly area of southern China</p> <p><b>Xin Chen</b> College of Life Sciences, Zhejiang University, China</p> <p>The status of rice-fish co-culture and rice-fishery in Cambodia</p> <p><b>Somony Thay</b> Department of Aquaculture Development of Fisheries Administration, Cambodia</p> <p>Questions and answers</p>
15:00-15:30 <i>Tea Break</i>	
<b>Session 1 continued: Better production</b>	
15:30-17:00	<p>Integrated multitrophic aquaculture for sustainable and safe food production</p> <p><b>Haokun Liu</b> Institute of Hydrobiology, Chinese Academy of Sciences, China</p> <p>Africa's sustainable fish farms: RAS floponics</p> <p><b>Mulamata Charles</b> Aquaculture Research Development Center, Uganda</p> <p>Eco-friendly tilapia and lettuce production</p> <p><b>San Htet San</b> Fisheries and Aquaculture, University of Yangon, Yangon, Myanmar</p> <p>Insights into rice-fish farming integration in Burundi, Rwanda, and Ethiopia: stakeholder perspectives and field observations</p> <p><b>Kang Li</b> Center for Ecological Aquaculture, Shanghai Ocean University, China</p> <p>Questions and answers</p>
17:00-19:00 <i>Dinner</i>	
19:00-21:00	Forum for Graduate Students
	SHOU

<b>DAY 2: 20 SEPTEMBER</b>		
08:30-09:00	Welcome, and summary of Day 1	<b>Moderator</b>
<b>Session 2: Better nutrition</b>		
	Mudcrabs and mangroves, integration for production and conservation (tbc)	<b>Khor Waiho</b> Institute of Tropical Aquaculture and Fisheries, Universiti Malaysia Terengganu
09:00-10:00	How aquaponics in the Caribbean region is changing the way we farm and how we eat	<b>Kristina Adams</b> Caribbean Aquaproducers Association, Barbados
	The development of rice-fish farming, a catalyst for better water management in Madagascar	<b>Tsiry Randriampeno</b> APDRA Pisciculture paysanne, Antsirabe, Madagascar
	Questions and answers	
10:00-10:30	<i>Tea Break</i>	
<b>Session 3: Better environment</b>		
	Integrated Fish Farming as a Climate-Smart Land Use Strategy in Nigeria	<b>Bamidele Omitoyin</b> University of Ibadan, Nigeria
	Climate Smart Integrated Salt and Artemia Production for Sustainable Coastal Aquaculture in Bangladesh	<b>Muhammad Meezanur Rahman</b> Artemia4Bangladesh, WorldFish
10:30-12:00	Aquaponic system with water and energy conservation for integrated fish farming for sustainable development of desert communities	<b>Khaled Ahmed Mohamed</b> Fish Research Center, Suez Canal University, Egypt
	Seasonal dynamics of fish diversity in Tonle Sap Lake and rice-fish farming in Cambodia	<b>Peng Bun Ngor</b> The Royal University of Agriculture of the Kingdom of Cambodia, Cambodia
	Questions and answers	
12:00-13:30	<i>Lunch</i>	
<b>Session 4: Better life</b>		
	Use of aquaponics of rainbow trout ( <i>Oncorhynchus mykiss</i> ) and ornamental flowers and medicinal aromatic plants	<b>Alejandro Javier Gallardo Valencia</b> Mexican Sustainable Fisheries and Aquaculture Research Institute, Chile
13:30-14:30	Antimicrobial resistant bacteria from integrated poultry-fish farms in Myanmar	<b>Yu Yu Aye</b> Fisheries and Aquaculture, University of Yangon, Yangon, Myanmar
	Integrated Multi-Trophic Aquaculture: A form of IAA that should tick all the boxes but somehow keeps falling short	<b>Catriona Macleod</b> Institute for Marine & Antarctic Studies, University of Tasmania, Hobart, Australia
	Questions and answers	
14:30-15:00	<i>Tea Break</i>	
<b>Session 5 Poster session</b>		
15:00-15:30	Self-guided poster session with informal discussion with students	<b>all</b>
15:30-16:00	Closing session	<b>Halwart Matthias</b> Food and Agriculture Organization <b>TBD</b> Shanghai Ocean University
17:00-19:00	<i>Dinner</i>	
<b>DAY 3: 21 SEPTEMBER</b>		
<b>Field Visit</b>		
08:00	Departure from hotel	
10:00-15:00	Field visit to Qingpu and Jinhai Lake, Shanghai	SHOU
17:00	Return to hotel	