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**WORKSHOP DRAFT AGENDA**

**FAO expert workshop on the status, technological innovations, and industry development needs of mud crab (*Scylla* spp.) aquaculture**

**27–30 November 2023**

**Singapore**

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| **Day 1** | **27 November 2023** |

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| 08:00-08:30 | Official Welcome AIC and FAO | All participants |

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| **Time** | **Speaker** | **Topic: International mud crab industry status reports** |
| 08:30-08:50 | Colin Shelley / A. Lovatelli | Global overview of the mud crab production sector |
| 08:50-09:10 | Vu Ngoc Ut  | Status Report – *Viet Nam* |
| 09:10-09:30 | Yushinta Fujaya  | Status Report – *Indonesia*  |
| 09:30-09:50 | Kandan Shanmugam  | Status Report – *India* |
| **15 mins** | **Short coffee break** |
| 10:05-10:25 | Md. Mojibar Rahman Ripon | Status Report – *Bangladesh*  |
| 10:25-10:45 | Hongyu Ma | Status Report – *China* |
| 10:45-11:05 | Emilia Quinitio | Status Report – *Philippines* |
| 11:05-11:25 | Andrew Ng | Status Report – *Myanmar* |
| 11:25-11:45 | Sukree Hajisamae | Status Report – *Thailand*  |
| 11:45-12:05 | C. Shelley, D. Chan, M.F.M. Hanafiah, T. Sanda | Status Report – *Australia*, *Singapore*, *Malaysia* and *Japan* (5 mins. each) |
| 12:05-12:30 | **Moderator:** Colin Shelley | Discussion of country status reports |
| **90 mins** | **Lunch break** |
| 14:00-14:20 | Rowena Eguia | Domestication and selective breeding |
| 14:20-14:40 | Hongyu Ma  | Domestication and the future of genetically improved mud crabs |
| 14:40-15:00 | Sukree Hajisamae | Broodstock management |
| **15 mins** | **Short coffee break** |
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|  |  | **Working Group: Broodstock** |
| 15:05-16:00 | **Moderator:** Muhammad Ikhwanuddin Abdullah | **WG-1:** Broodstock selection, quarantine, quality, health management and biosecurity measures |
| 16:00-17:00 | **Moderator:** Muhammad Ikhwanuddin Abdullah | **WG-2:** Broodstock maintenance / management, feeds, treatments of crabs/egg mass, incubation, hatching, larval quality and transfer of larvae, problems, and issues |
| 17:00-18:00 | **Moderator:** A. Lovatelli | Discussion: Round up of information and Day-1 papers and Working Groups discussions and recommendations |
| **19:30**  | **Official Dinner** |

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| **Day 2** | **28 November 2023** |

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| **Time** | **Speaker** | **Topic:** **Mud crab hatchery, larviculture and nursery production** |
| 08:30-09:05 | Vu Ngoc Ut | Hatchery and nursery systems, practices, feeds, and technologies: *Viet Nam* |
| 09:05-09:40 | Emilia Quinitio | Hatchery and nursery systems, practices, feeds, and technologies: *India*, *Bangladesh* and *Philippines* |
| 09:40-10:20 | Waiho Khor | Review of larval rearing and seed production |
| **15 mins** | **Short coffee break** |
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|  |  | **Working Group: Hatchery production** |
| 10:35-11:35 | **Moderator:** Colin Shelley | **WG-3:** Larval rearing (water quality, water exchange, feeds, feeding regime, minerals, vitamins, stocking density, cleaning, handling of larvae, chemicals, probiotics, antibiotics), problems and issues; biosecurity management |
| 11:35-12:35 | **Moderator:** Colin Shelley | **WG-4:** Larval culture system design (tank design, tank suitability, hydrodynamics, size, colour, salinity, light intensity, innovations, filtration, sterilisation) |
| **85 mins** | **Lunch break** |
| 14:00-14:20 | Nguyen Thi Bich Ngoc | Juvenile nutrition for soft shell crabs and functional foods |
| 14:20-14:40 | Diana Chan | Crablet nutrition for nursery and grow-out  |
| 14:40-15:00 | Noratat Prachom | Mud crab nutrition, feeds and management  |
| **15 mins** | **Short coffee break** |
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|  |  | **Working Group: Megalopa to nursery management**  |
| 15:15-16:15 | **Moderator:** Waiho Khor | **WG-5:** Megalopa to crablet management (culture systems, probiotics, antibiotics, diseases during larviculture, water quality and treatment, microalgae, stocking densities, feeds and feed management, biosecurity and health management) |
| 16:15-17:15 | **Moderator:** Rowena Eguia | **WG-6:** Nursery and juvenile production (systems, feeds, water quality, harvest and post-harvest, stocking density, innovations, transport, problems and issues, biosecurity management) |
| 17:15-18:00 | **Moderator:** Diana Chan | Discussion: Round up of information on Day-2 papers and Working Groups discussions and recommendations |
| **Day 3** | **29 November 2023** |

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| 08:00-12:30 | **FIELD VISIT** - Visit to Oceankeris, leading company in the collection, consolidation, trading and distribution mud crab in Singapore. Followed by tour of the Aquaculture Innovation Centre (AIC). |
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|  | **Short lunch break** |
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| **Time** | **Speaker** | **Topic:** **Value chains, marketing and farming systems** |
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|  |  | **Value chain and marketing** |
| 13:30-14:00 | Alvin Seah | Value chain, marketing and the international trade in hard shell mud crab |
| 14:00-14:30 | Andrew Ng | Value chain, processing and the international trade in soft shell mud crab |
| 14:30-15:00 | Emilia Quinitio | Quality standards of mud crabs |
| **15 mins** | **Short coffee break** |
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|  |  | **Farming systems** |
| 15:15-15:35 | Emilia Quinitio | Hard shell farming systems (pond, crab fattening, operations, feeds, shelters, water quality, monoculture and polyculture) |
| 15:35-15:55 | Colin Shelley | Soft shell farming systems (raw materials, feeds, feed management and quality control) |
| 15:55-16:15 | Soh Chee Weng | Soft shell crab production systems and approaches |
| 16:15-16:35 | Rowena Eguia | Mud crab aquaculture, including innovations in use of apps and nutrigenomics |
| 16:35-18:00 | **Moderator:** Diana Chan | Discussion: Round up of visit and information on Day-3 papers |
| **19:30**  | **Official Dinner** |

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| **Day 4** | **30 November 2023** |

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| **Time** | **Moderator / Speaker** | **Topic:** **Farming systems, improved value chains, conservation, and future needs of the mud crab farming sector** |

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|  |  | **Working Group-7: HARD shell farming** |
| 08:00-09:30 | **Moderator:** Emilia Quinitio | Hard shell farming systems, stocking densities, feeds, feed management, environmental management (water and waste), resource management (energy, feed and water use efficiency) chemicals, innovation; problems and issues |
| **15 mins** | **Short coffee break** |
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|  |  | **Working Group-8: SOFT shell farming** |
| 09:45-11:15 | **Moderator:** Colin Shelley | Soft shell farming systems, stocking densities, feeds, feed management, environmental management (water and waste), resource management (energy, feed and water use efficiency), chemicals, innovation, post-harvest; problems and issues |
| 11:30-11:50 | Chris Calogeras | Hard shell: Harvest and post-harvest technology, transportation, packaging, quality control and maintenance and mortality reduction in mud crab value chains |
| **90 mins** | **Lunch break** |
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| 13:30-14.00 | Chris Calogeras | Effective management and monitoring of mud crab fisheries  |
| 14:00-14:30 | **Moderator:** Diana Chan | **Working Group-9: Management, conservation and transportation**  |
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| **15 mins** | **Short coffee break** |
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|  |  | **Working Group-10: Future industry needs** |
| 14:45-17:00 | **Moderator:** Waiho Khor  | Training, R&D, and future technology **r**equirements of the mud crab aquaculture sector including, but not limited to, genetics, aquatic health, feeds, systems, deep tech, RAS, IoT, quality control, value chain improvements, microbiomes, digital training tools, water quality, product development and environmental management |
| 17:30-18:00 | **Moderator:** Colin Shelley | Discussion: Round up of information on Day-4 papers and Working Groups discussions and recommendations |
| **18:00** | **End of Workshop** |

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| **Day 5** | **1 December 2023** |

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| **Time** | **Moderator** | **Topic:** **Meeting of the Organising Working Group (OWG)** |
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| 09:00-10:45 | Colin Shelly | Compilation of Working Group rapporteur reports, discussions and recommendations |
| **15 mins** | **Coffee break** |
| 11:00-13:00 | A. Lovatelli | Planning development of proceedings from workshop |

