Progress of Joint Research Activities

Research No.: ㉑ F-5 ODA Loan Joint Research		Date: 26/Oct/2019
1	**General Title**	**Environmental monitoring for aquaculture and fisheries (F-5)**
2	**Core Members**	**Can Tho University** Vu Ngoc Ut (**Program Leader**), Huynh Truong Giang, Nguyen Thi Kim Lien, Van Pham Dang Tri, Pham Thi Tuyet Ngan, Truong Quoc Phu, Nguyen Van Cong, Dang Thi Hoang Oanh, Tran Van Viet, and Au Van Hoa **Japanese Universities:** **Nagasaki University:** WADA Minoru, SUGA Koushirou, SATUITO Cyril Glenn Perez, NISHIHARA Naoki, NAKAYAMA Hideki; **Hokkaido University:** TOJO Naoki **Japanese Companies:** KAZUHIKO Ikeda (TOWA Company, Japan); OOTAKE Yoshisato (NIR-AI Institute, Japan)
3	**Duration**	Oct., 2018 – Sep., 2021 (3 years)
4	**Main Objectives**	The overall objectives are to enhance capacity in monitoring and managing the aquatic environment in order to ensure sustainable development of aquaculture in the Mekong Delta (MD).
5	**Focal Points**	**PROGRAM: ENVIRONMENTAL MONITORING FOR AQUACULTURE AND FISHERIES** Program consisting of **4 research topics** **Topics:** TOPIC F5.1: Study on zoning and mapping for water quality and disease epidemic management in the MD; TOPIC F5.2: Study to apply macro-invertebrates based bio-monitoring procedure in monitoring and managing water environment of the MD; TOPIC F5.3: Study to apply technically supporting tools in assessment and management of water quality in the MD; TOPIC F5.4: Study to apply beneficial bacteria in water quality treatment for sustainable development of aquaculture in the MD **Objectives:** To monitor, assess and manage the water quality and disease epidemic in the inland and Coastal aquaculture; To diversify and enhance the efficiency of monitoring and management of aquatic environment in the MD; To apply the potential monitoring tools in monitoring, assessing water quality in aquaculture in MD; To investigate the beneficial bacteria flora ecosystem systems and develop as microbial products for aquaculture use **Activities:** Zoning and Mapping Water Quality; Zoning and Mapping Disease Epidemics; Water quality monitoring; Investigation of diseases in fish/shrimp; ArcGIS; Water quality and Disease epidemics zoning and mapping; Aquatic insects, macroinvertebrate, zooplankton assessment; Data analysis; PRIMER 6; Biodiversity; Biological monitoring approach for water quality management; Biological tool for water quality monitoring; Hydrologic data collection and water quality sampling; Data analysis; MIKE; Observed and simulated hydrograph of water level and water quality at the study area; Mathematic models; Investigation of bacterial communities in natural ecosystems using NGS analysis; Screening probiotic bacteria for aquaculture uses; PROBIOTICS; Water quality and disease control **Preliminary Outputs (1st year):** Collecting data on water quality and shrimp/fish diseases; Datasheet; Temperature, pH, EC, TDS, salinity, DO, COD, H_2S, BOD, TAN, NH_3, $N\text{-}NO_3^-$, $P\text{-}PO_4^{3-}$, TSS, total coliforms; Collecting data on zooplankton and macro-invertebrate; Datasheet; List of identified zooplankton and macro-invertebrates; Collecting data on hydrology and water quality; Datasheet; Datasheet; Bacterial isolation and identification; Targeted probiotic bacteria: *Baclillus* sp., *Thiobacillus* sp., *Lactobacillus* sp., *Streptomycess* sp.
6	Comments	This program is on going