

1	<p>General Title</p> <h2>Climate change: Impacts and adaptation in aquaculture and Fisheries</h2>
2	<p>Core Members</p> <p>Can Tho University (CTU): Nguyen Thanh Phuong (Project Leader), Do Thi Thanh Huong, Truong Quoc Phu, Dang Thi Hoang Oanh, Tran Thi Thanh hien, Vu Ngoc Ut, Ha Phuoc Hung</p> <p>Japanese Universities: Toyojii KANEKO (The University of Tokyo), Yasuaki TAKAGI, Hisae KASAI, Mamoru YOSHIMIZU and Ichiro IMAI (Hokkaido University), Motohiko SANO, Goshi KATO and Yutaka HAGA (TUMSAT), Atsushi ISHIMATSU (Nagasaki University)</p>
3	<p>Duration</p> <p>Jan.,2017 – Dec.,2019 (3 years)</p>
4	<p>Main Objectives</p> <p>The general aims of project are to evaluate the effects of climate change on (i) features of physiology, nutrition and health of aquatic animals in the Mekong delta, since then finding the solutions for management and development of suitable cultured systems; and (ii) efficiency of coastal fisheries at the Mekong delta</p>
5	<p>Focal Points</p> <div data-bbox="420 905 2026 1647"> <p>A. RESEARCH CONTENT</p> <p>From the top: striped catfish, mud crab, red tilapia and snakehead</p> </div> <p>B. PROGRESS OF THE STUDY</p> <ol style="list-style-type: none"> Study on the tolerance and adaption of selected species to increased salinities and elevated temperature: <ul style="list-style-type: none"> - The fry of snakehead, at the 0 and 3‰, fish growth were higher than the other treatments; the survival rate was highest at 3‰. - The fry striped catfish can be better reared at temperatures from 27 to 33°C, and the optimum one is 30°C. The higher survival rates were 27.9% and 32.9% at 27 and 30°C treatment. - The tolerance range of temperature of juvenile mud crabs was quite large (from 8.5°C to 41.3). The growth and survival rate of mud crabs were high at 30-31°C (50.3%). The survival rate reduced when the temperature increase 33-34°C. Study on the effects of salinities and elevated temperature on health and production of striped catfish and white-leg shrimp: <ul style="list-style-type: none"> - Field monitoring of selected environmental parameters link to climate change (temperature, salinity, pH and dissolved gases, toxins, nutrients...), prevalence of infectious and non-infectious diseases and infectious pathogens (parasites, bacteria and viruses) and economic efficiency of ponds cultured striped catfish and white-leg shrimp. - Conduct indoor experiments on the effects of increase temperature and salinity on immune response and susceptibility to <i>Vibrio parahemolyticus</i> causing AHPND in white shrimp and <i>Edwardsiella ictaluri</i> in striped catfish Assessment the effect of temperature and salinity on feeding and feed utilization of selected farmed fish crustacean species: <p>Digestive enzymes in snakehead were affected by increased temperature and salinity, chymotrypsin activity increased at higher temperature. The apparent digestibility coefficients were found in the treatment 31°C-0‰. Strikingly, extreme temperature (34°C) became lethal at medium and high level of salinization (6-9‰) in which one-third of the fish died. Experiment for tilapia were done while the giant prawn have been on-going</p> Study on the effects of salinity changes on plankton population of selected ecosystem in the Mekong Delta: <p>Samples of plankton and microbial populations were completely collected on Hau and My Thanh rivers. Sample analysis has been accomplished except for isotopes as they need to be sent to an abroad agency for analysis. Among the analytical data on plankton and bacteria populations, some papers have been made for the upcoming ODA conference in December, 2019.</p> Production and profitability of the coastal capture fishery: <p>Samples of plankton and microbial populations were completely collected on Hau and My Thanh rivers. Sample analysis has been accomplished except for isotopes as they need to be sent to an abroad agency for analysis. Among the analytical data on plankton and bacteria populations, some papers have been made for the upcoming ODA conference in December, 2019.</p> <div data-bbox="441 2641 1155 2789"> <p>Catfish pond (left) and white-leg shrimp pond (middle) and field survey (right)</p> </div>
6	<p>Comments</p> <p>The project are progressing well including field and in-house (experimental) works. There have been a lot of interesting results obtained which hope to be able to publish papers on national and international journals.</p>