Livelihood of Fishing Households that Operated Coastal Aquaculture in Bandon Bay, Surat Thani

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ABSTRACT

Bandon bay located in Surat Thani province, southern of Thailand covering approximately an area of 1,070 km^2. The inner bay that extends for 80 km coast, where most mollusc culture areas are located, covers an area of 480 km^2. With gradually sloping intertidal zone of the coast, it has a mean water depth of 2.9 m with respect to mean sea level. There is a large band of mudflats extends along the coast to about 2 km of off shore area. Since Bandon bay receives most of the surface freshwater runoff from Tapi-Phumduang river watershed. This geographic condition leads to nutrient enrichment in the bay and abundant of natural marine resources. Therefore, the bay is one of the most country's productive coastal areas that production come not only from capture fisheries but also aquaculture which support domestic demand with high return.

To identify coastal area capability and strengthen suitable management approach in this area, investigation of fishing household livelihood and their perspective in current career are necessary. The survey for data collection therefore was conducted during 2012-2014. A total of 316 small scale fishing households from 5 districts namely Chaiya, Thachang, Muang, Kanchanadit and Donsak were interviewed using structured questionnaire. In addition, information from local administrations in study area was also collected. Among these amount, 87 fishing households operated aquaculture as a source of their family incomes. Since aquaculture especially mollusc culture is an important activity in the bay and is recognized as a signature product of country. This paper therefore aims to point out demographic data, income sources, activities and problems on production, product distribution of

those 87 fishing households. It also provided information on their attitude on fishery management, social capital and livelihood.

The demographic data of 87 small scale fisher, who operated aquaculture indicated that most of respondents were man (66.7%) and nearly half of them had age between 41-50 years old. However, like other sector in fisheries, most of them have education level only at primary school. Family members ranged between 1-3 persons. The results showed that main sources of income of them came from aquaculture, capture fisheries and trading in village. Approximated incomes of those sources were 0.84, 0.41 and 0.37 million Bath per year respectively. Due to availability of mudflat area, main aquatic species cultured in Bandon bay were cockle (*Anadara granosa*) and oyster (*Crassostrea belcheri*). Meanwhile sea bass (*Lates calcarifer*) was also cultured both in cage and earthen pond. The information from the last crop cycle indicated that cockle, oyster and sea bass culture are about 1 year.

Labor used in aquaculture activities ranged from 1-6 persons with average of 2 persons. Although aquaculture was a good income source for respondents, however more than half of them (54.7 %) faced with some problems with high seriousness level such as increasing of operation cost (seed, cultured materials), slow growth rate, degradation of water quality. They also concerned on environmental problems such as water discharges from land based shrimp farming and industry factories and freshwater runoff. Like a common practice of small scale fisher in Thailand, most of production was sold to middle man who determined product price and rather transported it by boat than car or motorcycle.

According to view point of respondent on fishery management aspects, like other groups of respondents which have not operated aquaculture, although they agreed that fishery resources such as fish, shrimp, crab or mollusc in the sea are considered as a common property and fishery is open access activity in Thailand, do fishing under this principle may lead to over-fishing and fishery resource reduction. However, more than

half of them (60.9%) thought that fishing activities should be open access. Only 39.1% of respondents did not agree with this concept and about 79% of those indicated that only village members should have right to do fishing in their fishing area. Almost respondents (90.8%) have ever heard of fisheries management in and around their fishing ground and knew that the purposes of fishery management are to conserve enhance fishery resources for sustainable utilization. Management activities in the study area that recognized by respondents were prohibition on fishing during spawning period, mesh size control for net. Respondents agreed that fishery management is necessary for this area. In their point of view, when the catch production reduced about 50% of current volume, some fishery management measures should be implemented. If fishery management is installed to maintain fishery resources, they could bear for 30% catch reduction at beginning of implementation. However, they could bear for that situation only within 2 years. The results on social capital indicated that more than half of respondents were not member of organization in their community. Only some respondents were members of fishing group, socio-civic group. Almost respondents believed that they have ability to borrow money. Relatives and neighborhood were the one who could give helps when emergency cases happened. In general public views of life, they satisfied current financial situation of family. Almost of them (98.9) were still happy with current life. Only 48.3% of them worried about low and uncertain income, children education and health. However, they still lived with high hope. They thought that rich natural resources are very important for maintaining their career and protecting the environment should be given priority even if it causes slower economic growth and some loss of returns. The information from this study revealed Bandon bay has a good capability to generate income for local communities. Small scale fisher who operated aquaculture in Bandon bay have good livelihood, however management measured still needed for sustain their career.

Keywords : Small-scale fisheries, Aquaculture, Livelihood, Bandon Bay