

## **Component 1 (Fishing Gear): Thailand**

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### 1. Activities of component 1 in Thailand

Small-scale fishery is one of the most important industries in Rayong, Thailand. Many different small-scale fishing methods can be seen in this region, including gill-net, trammel-net, trap, hook and line, and trolling. Fishing operations are conducted by using small fishing boats (boat length is from 6.5 to 8.0 m); therefore, weather conditions can affect fishing operations, including whether fishermen will go to sea at all or not on a specific day. The purpose of this study is to provide details on fishing operations and understand the relationship between fishing operations and weather conditions.

### 2. Field survey in Rayong, Thailand

Six local fishing villages were chosen for the field survey. Thirteen fishermen were selected from the chosen fishing villages; 3 of them usually conducted small-scale fishery and participated in set-net operations. During the field survey, an interview-based survey was conducted, to gather general and basic data on fishing operations, including size of fishing boat, type of engine and fishing gear used by the fishermen, and data on annual and daily pattern of activities associated with fishing operations.

All fishermen involved were provided logbooks to record details of their daily fishing operations. The items included in the logbook were date, fishing gear used, number of operations conducted, number of fishermen on board to conduct the fishing operation, catch species and weight, landing fish price for each species, time of departure and return to the pier, and amount and price of fuel purchased. In addition, the logbooks included a remarks column, to record whether the fisherman did not go to sea on a particular day and the reason behind it.

Portable GPS's were installed onto the all of fishing boats involved in the study, to record the position of each fishing boat at 3-min intervals. The GPS data provides the exact location of each fishing operation conducted each day.

Daily weather data, including wind speed and direction and sea conditions, were also collected every 3 h from meteorological observatory in Rayong.

### 3. Seasonal variation in small-scale fishing operations in Rayong

There are three main seasons in Rayong: a non-monsoon or summer season (from February

until April), a Southwest monsoon or rainy season (from May until October) and a Northeast monsoon season or cool season (from November until January). Seasonal variation in weather conditions such as wind speed, wind direction and sea conditions were analyzed using the meteorological data. The recorded average wind speeds were 1.7, 4.0 and 1.5 for the non-monsoon seasons, the Southeast monsoon seasons, and the Northwest monsoon seasons in 2013, respectively. Wind speed varied dramatically between seasons. Thus, the weather data suggests that wind speed is most likely to be the main variable affecting fishing operations.

We compared crab gill net, fish trap and squid trap operations between the non-monsoon season and the southeast and northwest monsoon seasons.

The location of the main fishing grounds for the crab gill net fishing is affected by the monsoon season, when the sea is rough due to the predominant winds hitting the west side of the Samet Island. Crab gill net fishing mainly occurs in the west side of the Samet Island in non-monsoon season. Some fishermen of crab gill-net moved operation sites to the east side in monsoon season. Therefore, crab gill-net fishing operations are then moved to the calm sea on the east side of the Samet Island during the monsoon season. The operation site of fish trap was not changed on monsoon and non-monsoon season. The fisherman of squid trap conduct the fishing operation near the coast in monsoon season, and offshore in non-monsoon season. The travelling time of squid trap between the pier and the operation site in non-monsoon season was longer than in monsoon season, and the weight of the catch in non-monsoon season was higher than in monsoon season.

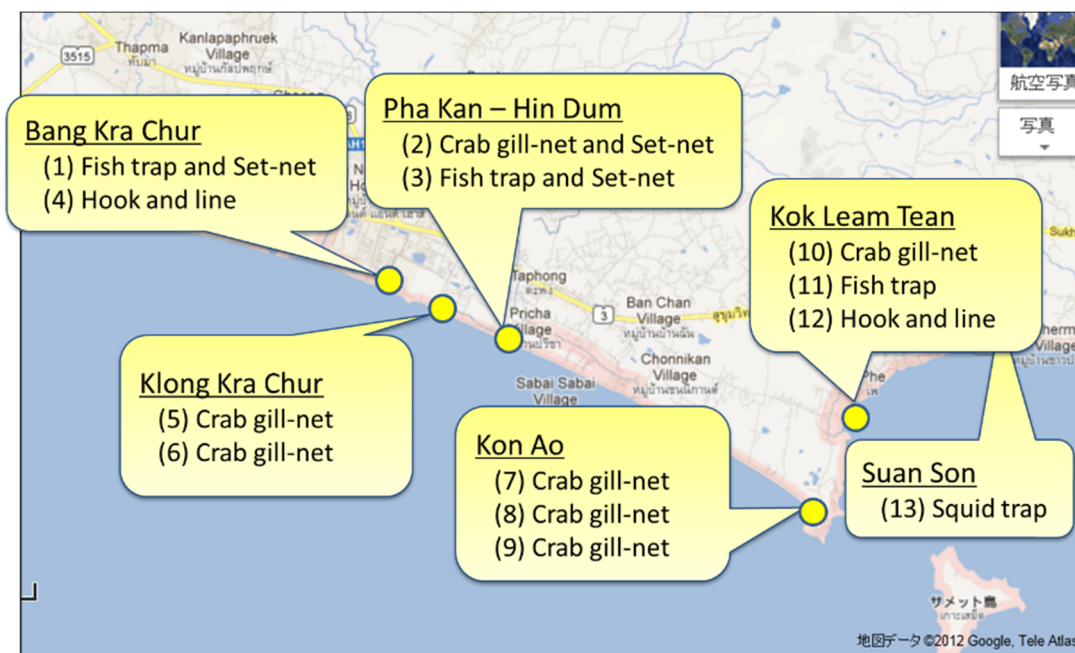


Fig. 1 Research site and fishermen in Rayong, Thailand