

Survey method for small-scale fishing activities using GPS

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In this presentation, a method to investigate the onboard activities of small-scale fisheries by analyzing GPS log data and time-geographical approach will be proposed. Basically, it is said that fishermen's activities at the fishing ground are difficult to analyze other than direct observation. However, direct observation has several constraints because the direct observation needs much effort and numbers of samples are limited. These caused making integration between ecological-anthropological research on the fishing ground use and analysis of socio-economic factors on fishing villages difficult. Then, it is necessary to overcome these methodological challenges. Besides, time-geographical approaches to fishery activities have been found in previous studies, and in these studies, the spatiotemporal development of fishery activities has been debated through interviews and analysis of fishery diaries. By using GPS logger, it is expected that discussion based on more accurate information will be possible even in these time-geographical researches. By collecting GPS log data, departure / returning time, route of vessels, vessel's speed, route distance per fishing can be acquired. The analysis procedure is as follows. (1) Collecting log data; (2) Importing log data and organizing/processing data; (3) Creating the spatiotemporal path by using GIS software; (4) Interpretation of activities by the speed of vessels.

Through these steps, it is possible to conduct a fishery activity survey while suppressing the effort for participant observation. Through the above procedure, it is possible to conduct a fishery activity survey while suppressing the labor required for participation observation. For the survey of small-scale fishery activities by GPS logger, it is possible to simultaneously grasp the access activity of access to various resources by various entities at the same time. And it can be applied to various researchers. For example, by integrating with the analysis of the transaction records issued by the market, catch amount per unit effort (Catch Per Unit Effort) can be computed with high accuracy. On the other hand, the interpretation requires fundamental data to be acquired in the direct observation, and it is difficult to discuss log data alone, then there are several limitations such as grasp the total catch including dumped resources, and workforce allocation on the vessels. These points should be taken care.

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