

High-resolution hydrographic observation with local communities in the Sanriku coastal seas, Japan

*Kiyoshi Tanaka¹, Kosei Komatsu¹, Kazuhiro Kogure¹

1. University of Tokyo

In the Sanriku coastal seas, facing the North Pacific in the northeastern part of Japan and exchanging a large amount of seawater with the open ocean, a variety of seaweeds and shellfish are farmed without artificial feeding. After the 2011 Great East Japan Earthquake and the subsequent giant tsunami, we have built an ocean observation system to elucidate circulation patterns in the Sanriku coastal seas, not only aiming at producing globally recognized scientific results, but also putting a high priority on integrating our activities with local communities in the area. That is, practical ways were developed to carry out scientific study together with local communities.

In the study we have built a WEB site that distributes real-time-monitored marine environmental data, such as water temperature, wave height, salinity, concentration of nitrate, and meteorological conditions. The marine environmental information distributed by this system has been widely viewed and been practically utilized by the local communities including fishermen, because growth of the seaweeds and the shellfish depends greatly on the seawater circulation, which conveys nutrients into the “non-feeding” sea farming areas.

Moreover, we have held local meetings in rural fishing villages. Direct exchanges of marine information between the researchers and fishermen are very useful not only for the fishery, but also for the progress of the oceanography, because the fishermen know the sea very well. In addition, the hydrographic observation over the inshore fishery areas cannot be made safely without support from fishermen. In other words, in situ observation with local communities is essential for performing state-of-the-art coastal physical oceanography.

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