



**THE MFRDMD/SEAFDEC FIRST REGIONAL WORKSHOP ON
REMOTE SENSING OF PHYTOPLANKTON**

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**COUNTRY STATUS REPORT
JAPAN**

**ACTIVITY ON THE REMOTE SENSING
OF PHYTOPLANKTON IN JAPAN**

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1.0 Current marine remote sensing application in Japan

The fishing ground of many useful fish (sardine, anchovy, saury, skipjack tuna, etc.) locates the special temperature zone or the temperature gradient zone near Japan. It is important matter for fisheries to forecast oceanographic conditions. There is two types of oceanographic conditions forecasting for fishery in Japan. First one is the long term, 2 to 4 months forecasting and the second one is near future forecasting or quick report. When making the long term forecasting, we use many types of oceanographic items like current meter records, NOAA SST map, 100 m depth temperature map. Quick report for fisheries are published by JAFIC and many prefectural fisheries experimental stations. These reports are mainly SST mapping by the SST data from fishing boats and satellite infrared images (GMS and NOAA).

There are two main research frameworks for ocean color remote sensing for fisheries in Japan. Forst one is the joint research agreement between NASDA and JAFIC for putting the ocean color images to quick report for fishing ground. Second one is the joint research agreement between NASDA and NRIFS for ocean color validation and tuning up in-water algorithm for chlorophyll-a and primary production since 1996.

2.0 Research findings of phytoplankton blooms

There are a lot of chlorophyll-a shipboard observations near Japan in winter and spring around fish spawning season, but there are not many data in other seasons. Only CZCS pigment images can clarify the annual change of phytoplankton. In the Kuroshio region there are 'spring bloom' in December and January. There occurs phytoplankton bloom in January and February in the inner region of the Subtropical Gyre. The blooming is occurred from south to north of the Kuroshio. This bloom movement is similar to the movement of fish group like sardine, anchovy and saury.

3.0 Monitoring of coastal sea environment using remote sensing techniques.

It is not easy for short term monitoring coastal area from satellite, because the frequency of observation is low. My group succeeds in detecting the red clay discharge in coral reef area using LANDSAT-TM data. There are a lot of red tide reports by airborne observations.

4.0 Problem encounters

1. Establishing CASE 2 water algorithm
2. Packaging effect

Research needs and proposals of member countries and the region

1. Establishing the validation system
2. Creating local in-water algorithm