ONE... LITTLE, TWO... LITTLE, THREE... LITTLE NEMOS: FISH PRODUCTION DERIVED FROM SATELLITE REMOTE SENSING

Silvano Kathleen[1], Laura David[2] and Cesar Villanoy[2]

[1] Ecological Marine Management, Vrije Universiteit Brussel (VUB)
Pleinlaan 2, 1050 Brussels, Belgium
E-mail: mimoyski@gmail.com

[2] Marine Science Institute, University of the Philippines
Diliman, Quezon City 1101, Philippines

With the growing concern for fisheries sustainability in the Philippines, alternative methods are being explored to address the problem in terms of research and management. One that is being considered is satellite remote sensing where satellite sensors give a picture of ocean parameters and processes at larger spatial and temporal scales. As satellite measurements are limited only to the surface layers of the ocean, algorithms and models are developed to derive mechanisms happening at depth; subsequently completing a whole scenario and give a better handle and understanding of such oceanographic processes important to fisheries as productivity, upwelling, fronts, etc.

Satellite images are now being used at global and regional scales for primary production estimates and identification of potential fishing zones in the context of fisheries and management. This paper aims to evaluate the potential application of satellite remote sensing technology in the Philippines. Likewise, the limitations and possible problems of this technology in its applicability to fisheries are also discussed.

Using a series of algorithms, potential fish biomass were calculated from chlorophyll values from SeaWiFS images by virtue of primary production and energy transfers between trophic levels. Likewise, production estimates for each trophic level were computed from phytoplankton, to zooplankton, to sustainable fish yield. The estimates will be more related to the offshore fisheries which are plankton-based.

References

Christensen V. and D. Pauly (Eds). 1993. Trophic models of aquatic ecosystems. ICLARM Conference Proceedings 26, 390p., ICLARM, Manila Philippines.

Monger B. 2000. IDL Script for SeaWiFS Image Processing. Cornell University, New York, USA.

Parsons *et al.* 1984. Biological Oceanographic Processes. 3rd ed. Pergamon Press Ltd, UK.

SeaDAS: http://seadas.gsfc.nasa.gov

SeaWiFS: http://seawifs.gsfc.nasa.gov