

During the project's initial phase, the researchers used 100 kg of clay soil from Camarines Province area for clay application in Zambales and Pangasinan. In the future, clay materials native to affected areas will be used.

The DOST-PCAMRD, through PhilHABs, has been working with the UP's MSI, and National Institute of Geological Sciences (NIGS), as well as DOST's Philippine Nuclear Research Institute (PNRI), on different projects to mitigate the occurrence and proliferation of major algal blooms in the tropics.

The PhilHABs is the country's Harmful Algal Blooms (HABs) Research and Development Program, which contributes to the improvement of the prediction and management of HABs occurrence through the determination of its ecological and oceanographic conditions. It monitors and manages the occurrence, movement, toxicity, and other environmental effects of algal blooms in different locations within the country.

The program has done intensive studies in 10 areas affected by HABs, namely: Manila Bay; Sorsogon Bay, Sorsogon; Bolinao and Anda, Pangasinan; Matarinao Bay, Eastern Samar; Cancabato Bay, Leyte; Murcielagos Bay, Zamboanga del Norte; Balete Bay, Davao Oriental; Pujada Bay, Davao Oriental; and Benoni Lagoon, Camiguin.

The program has forged close collaboration with concerned LGUs (Local Government Units) to enhance community coping mechanisms. Various activities of the program include information dissemination, emergency response, and mapping of causative organisms, and clay dispersal on actual blooms.

Some on-going mitigating efforts include training and seminars on HABs facilitated by the

UP-MSI, culturing of causative organisms for research and development, and PhilHABs emergency response including ball clay application on actual blooms.

Red tide or HABs causes economic, public health, and/or environmental harm. Common algal blooms in the Philippines are attributed to *Pyrodinium bahamense* var. *compressum*, the causal organism for Paralytic Shellfish Poisoning (PSP). Other causal organisms for PSP are *Alexandrium* sp.

and

*Gymnodinium catenatum*

. Diarrhetic Shellfish Poisoning (DSP) causing organisms are

*Dinophysis miles*, *Dinophysis acuminata*, *Dinophysis caudata*, and *Prorocentrum lima*

. Ciguatera Fish Poisoning (CFP) causing species is *Gambierdiscus toxicus*; whereas, some *Pseudonitzschia*

species may cause Amnesic Shellfish Poisoning (ASP). Species that can cause fish kills through oxygen depletion (anoxia, hypoxia) includes

*Skeletonema costatum*, *Prorocentrum micans*, *Noctiluca scintillans*, *Ceratium furca*, and *Ceratium fusus*

were also observed.

In the Philippines, some 540 outbreaks of harmful algal blooms have been reported since 1983. The most recent outbreaks were in Masinloc Bay, Zambales; Bolinao and Anda, Pangasinan; Murcielagos Bay in Zamboanga del Norte; and Dumanquillas Bay, Zamboanga del Sur.

The DOST-PCAMRD and UP-MSI will host the 3rd National Harmful Algal Bloom Conference and EAST Asia HAB 7 International meeting this November 2011 at Tagbilaran City, Bohol. The conference will focus on recent developments on HAB research, monitoring, and management, and their implications to the national concerns on harmful algal blooms. (Arjay Escondo, S&T Media Service)