

Session 2.3

Protecting our Oceans from Harmful Effects of Algal Bloom

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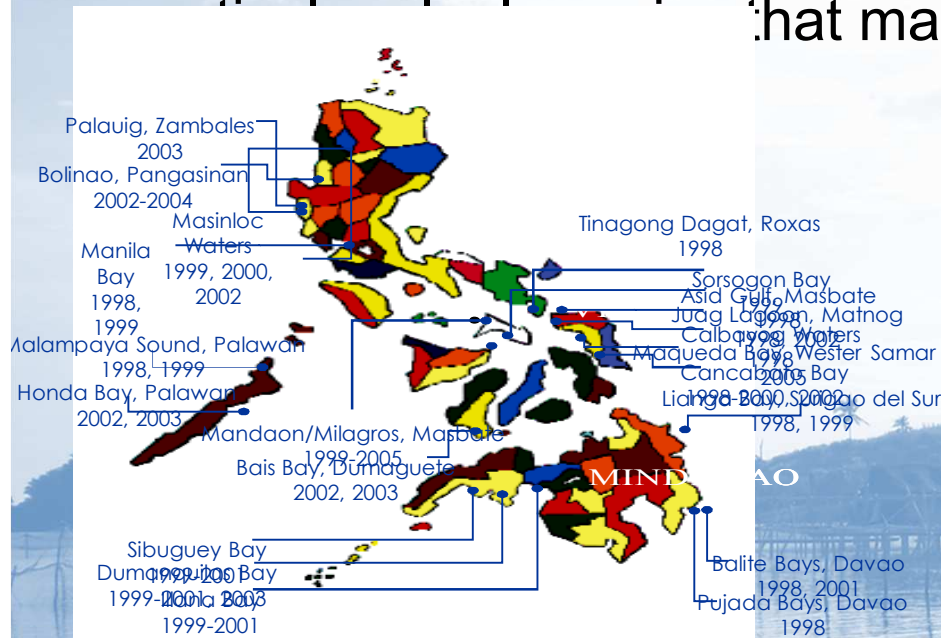
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The HAB Problem

- A high cell concentration of phytoplankton, usually dominated by a *dinoflagellate* that may cause toxicity in seafood or fish kill.



1. Morbidity Cost
2. Loss in Income, local
3. Loss in Exports
4. Government Cost

The solution: IAEA provided equipment, expert services and training: extended to other countries experiencing HABs in S.America, Africa, Asia and Middle East.

Receptor Binding Assay-
measures toxin in seafoods

Pb-210 for pollution and
cyst history



Impacts

RBA is 40x more sensitive than mouse bioassay

1. It provides early warning to avoid illnesses
2. It can allow earlier lifting of shellfish ban
3. Avoid halo effects- local market and exports

5. Harmful Algal Bloom/ PSP (i.e., Red Tide incidents)	
a. Morbidity Costs due to PSP-related illnesses in 1988-1998	1,935,397
b. Morbidity Costs due to PSP-related deaths in 1988-1998	884,599
c. Loss in Exports (losses of Ameibi and fresh shrimp exports from 1988-1998)	1,614,319,043
d. Government Costs (emergency fund released during 1992 Red Tide incident)	15,000,000
e. Loss in Income of Fishermen (during 1992 Red Tide incident)	1,920,000,000

Pb-210 dating in understanding HABS

1. Pollution history
2. HAB cyst history

70 M USD/year

The Way Forward

- Integration of RBA in the National Monitoring Program
- Development of RBA-based field assay
- Mapping of Bays- historical pollution through lead-210 dating

