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# REPORT FOR 2<sup>ND</sup> GODAR WESTPAC WORKSHOP

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## INTRODUCTION

- Oceanographic investigation in Vietnam has been carrying out by many organizations.
- Marine data are archiving in many inhomogeneous formats at these organizations.
- Existing confidential database and restricted data at each marine research organization.
- The financial support from government is not enough to cover all activities in marine data management.
- Distribution and exchange of marine data are still restricted due to regulations in Vietnam.

## MAIN OCEANOGRAPHIC RESEARCH ORGANIZATIONS

1. Institute of Oceanography in Nhatrang (IO).  
Founded 1930.
2. Hanoi Institute of Oceanography (HNIO).  
Founded 1993.
3. Haiphong Institute of Oceanography (HPIO).  
Founded 1993.
4. Research Institute of Marine Products (RIMP).  
Founded 1962.
5. Research Institute of Water Resources (RIWR).  
Founded 1978.

6. Marine Hydro Meteorological Centre (MHMC).  
Founded 1986.
7. Marine Geological and Mineral Centre (MGMC).  
Founded 1995.
8. VietNam Petroleum Institute (VPI).  
Founded 1978.
9. Survey and Mapping Division of Navy (SMDN).  
Founded 1972.
10. Research Institute of Vietsopetro (RIV).  
Founded 1986.

## GODAR ACTIVITIES

- Statistics on marine data that are available in all the oceanographic research institutions in Vietnam.
- Collecting and rescuing all available marine data and information on the data in Vietnam.
- Inspecting the quality of the data collected.
- Constructing a uniform database.
- Developing software to digitize and store data onto standard format and media.
- Sharing new marine data to the marine researchers.

## MAIN DATA SOURCES COLLECTED

- From complex marine investigative programs:
  - Program Thuanhai-Minhhai (1978-1980).
  - Program 48-06 (1981-1985).
  - Program 48-B (1986-1990).
  - Program KT-03 (1991-1995).
  - Program KHCN-06 (1996-2000).
  - Program KC-09 (2001-2005).
- From cooperative projects:
  - Vietnam-USA (1959-1961).
  - Vietnam-China (1959-1962).

- Vietnam-Russia (1981-1993).
- Vietnam-France (1993-2000).
- Vietnam-Australia (1997-2000).
- Vietnam-Canada (1997-1999).
- Vietnam-Thailand-Philippine (1996-2000).
- Vietnam-Germany (1996-2005).
- Vietnam-Norway (1999-2001).

## DATA COLLECTED

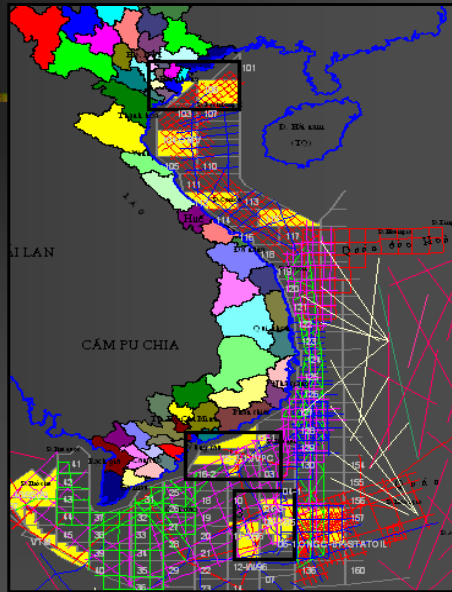
- Marine Hydrology and Chemistry.
- Marine Meteorology.
- Marine Biology.
- Marine Ecology.
- Marine Environment and Natural Resources.
- Marine Geology and Geophysics.
- Marine dynamics.
- Bathymetry.

## INFORMATION ON DATA

- Information on oceanographic data:
  - Name of surveys.
  - Number of surveys.
  - Time and location of surveys.
  - Surveyed elements...
  - Type of data stored (on papers, maps, magnetic tapes...).
- Hydrology and chemistry
  - 205.487 observation stations.
- Marine dynamics
  - 96.519 observation stations.

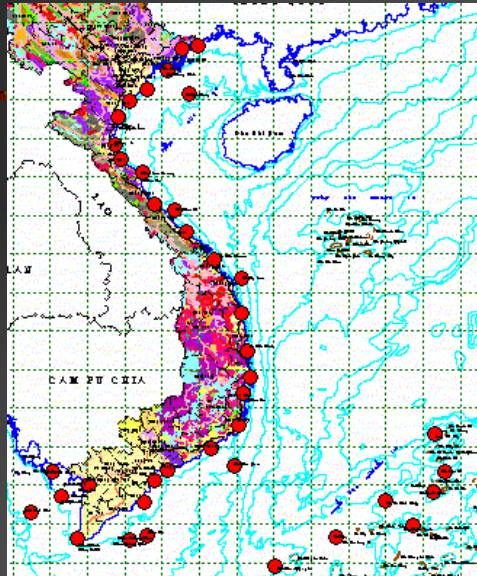
- Marine meteorology
  - 8.110 observation stations.
- Marine Biology and Ecology
  - 14.248 observation stations.
- Marine Environment
  - 4.535 observation stations.
- Geology and Geophysics
  - 116.200 observation stations.
- Bathymetry
  - 34.000 observation stations.

## MARINE SURVEYS



## OBSERVED STATIONS

- 25 observed stations of meteorology and hydrology in coastal zone and offshore.
- 14 observed stations of tide and sea level.



# SAMPLES FROM DATABASE

The screenshot displays the GAMBAS - GIS Maps System interface. The main window shows several maps of the Ca Mau & Tra Vinh region, including Chlorophyll (Chl) CM March 2002 and Chlorophyll (Chl) TV March 2002. A search information window is open, showing search criteria for Title, Author, Organization, and Year of Publication. A metadata database window is also open, displaying information for a document titled "Guideline for the promotion of environmental management of coastal aquaculture development" by U.C. Berg, published in 1992 by FAO. The document is 128 pages long and is available. The content of the document is "Guideline for coastal aquaculture and available development".

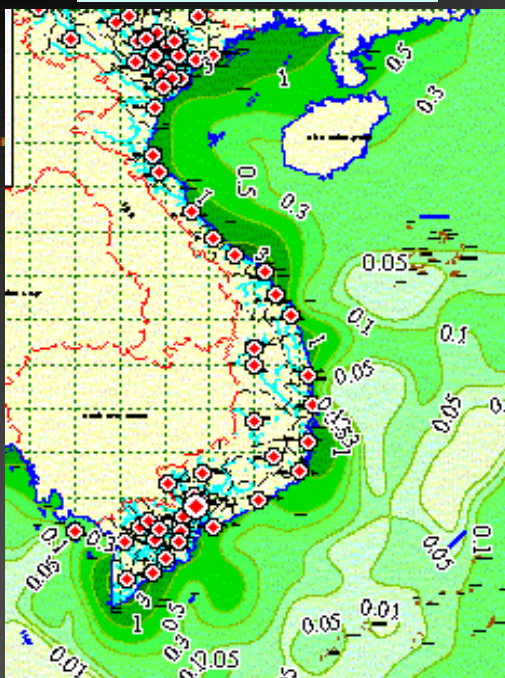
# PRODUCTS

- Data stored in **CD-ROM**.
- Books.
- Documents.
- Charts.

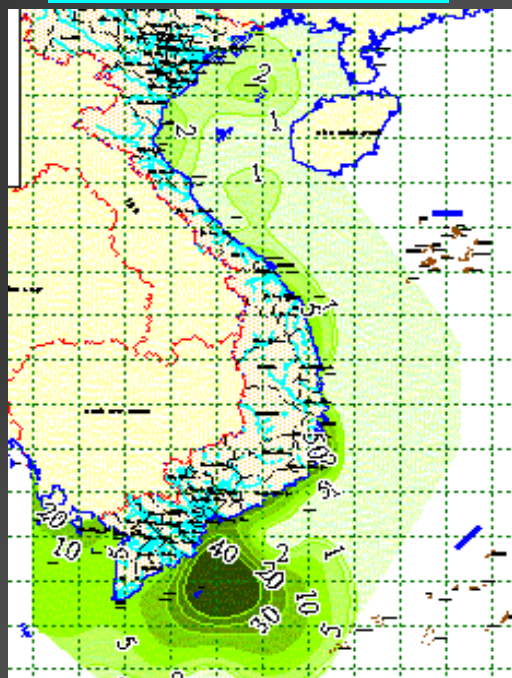


## SOME CHARTS CONSTRUCTED FROM DATA COLLECTED

Distribution of Chlorophyll

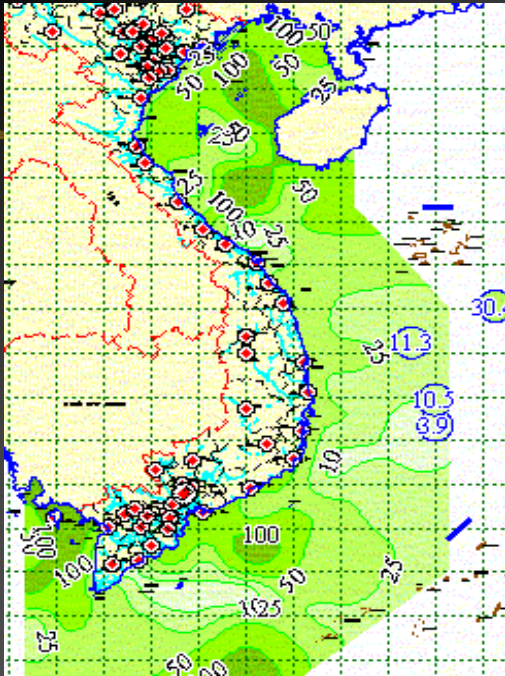


Distribution of Phytoplankton

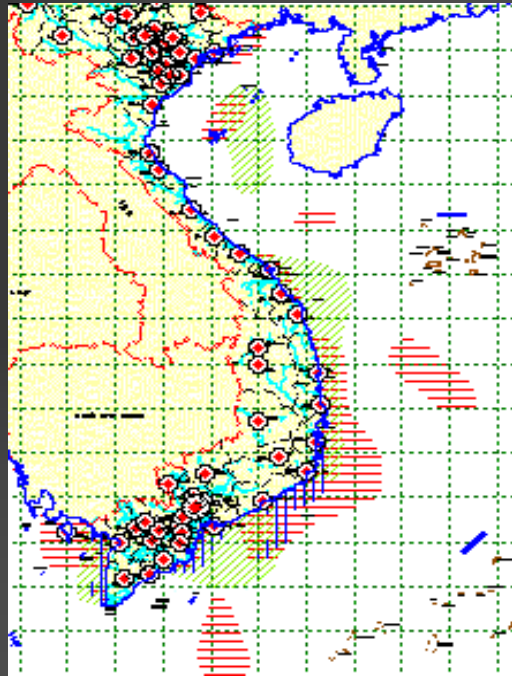




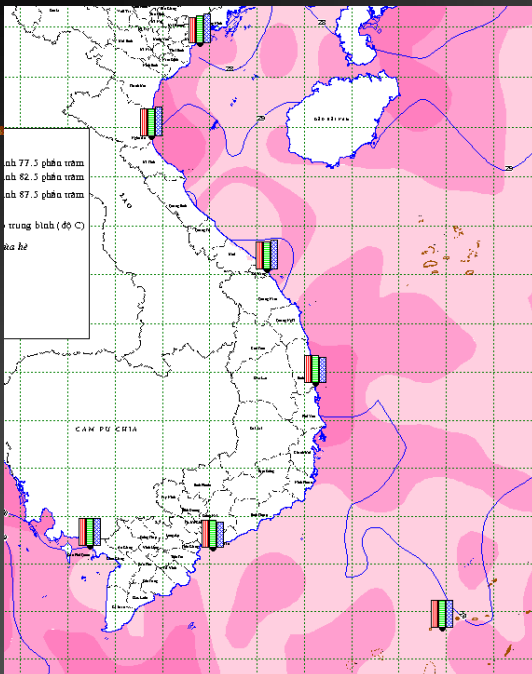
### Distribution of Zooplankton



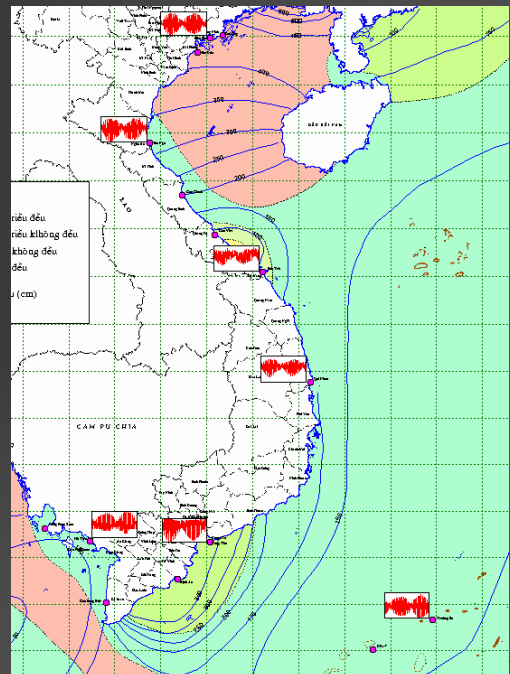
### Polluted Distribution (Zn, Cu, SiO2...)



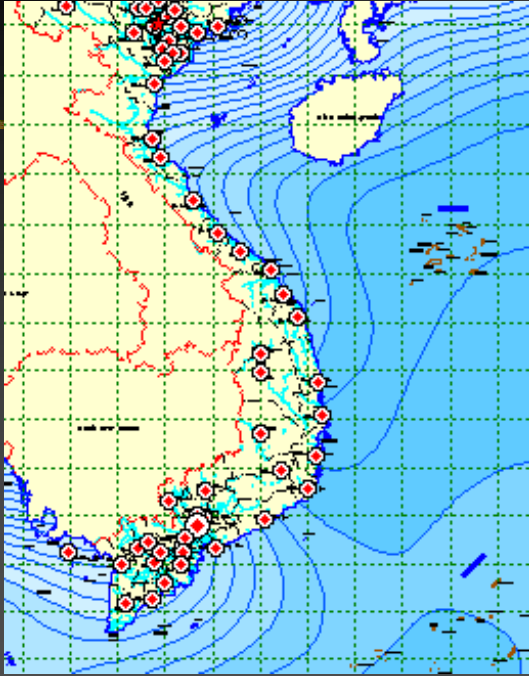
### Air Temperature and humidity



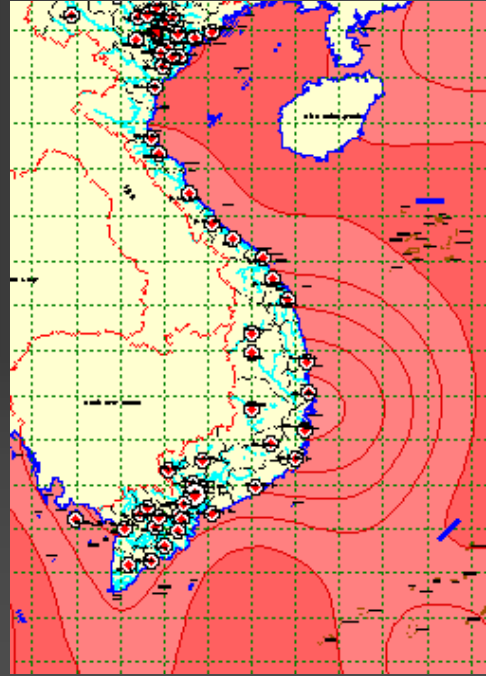
### Tidal Regime



Distribution of Salinity



Sea Water Temperature Distribution



## CONCLUSIONS

- GODAR project allows to produce new marine data sets for scientific community in uniform format. It is interesting in Vietnam.
- Marine data are abundant but archiving in many inhomogeneous formats at different organizations.
- Strong cooperation and interest of all marine research organizations are necessary for success of GODAR project in Vietnam.
- At present, finance is a difficult problem for activities of marine data management.
- International exchange of marine data are still restricted due to regulations in Vietnam.



**THANKS FOR YOUR ATTENTION!**