Marine Climatology Information over Indonesian Seas through MIDAS (Marine Integrated Data and Analysis System)

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OUTLINE

1. Background
2. Climate Drivers in Indonesia
3. BMKG Potential
4. Development of MIDAS-BMKG
5. MIDAS-BMKG Contribution for Meteorology and Climate Services
6. Challenges

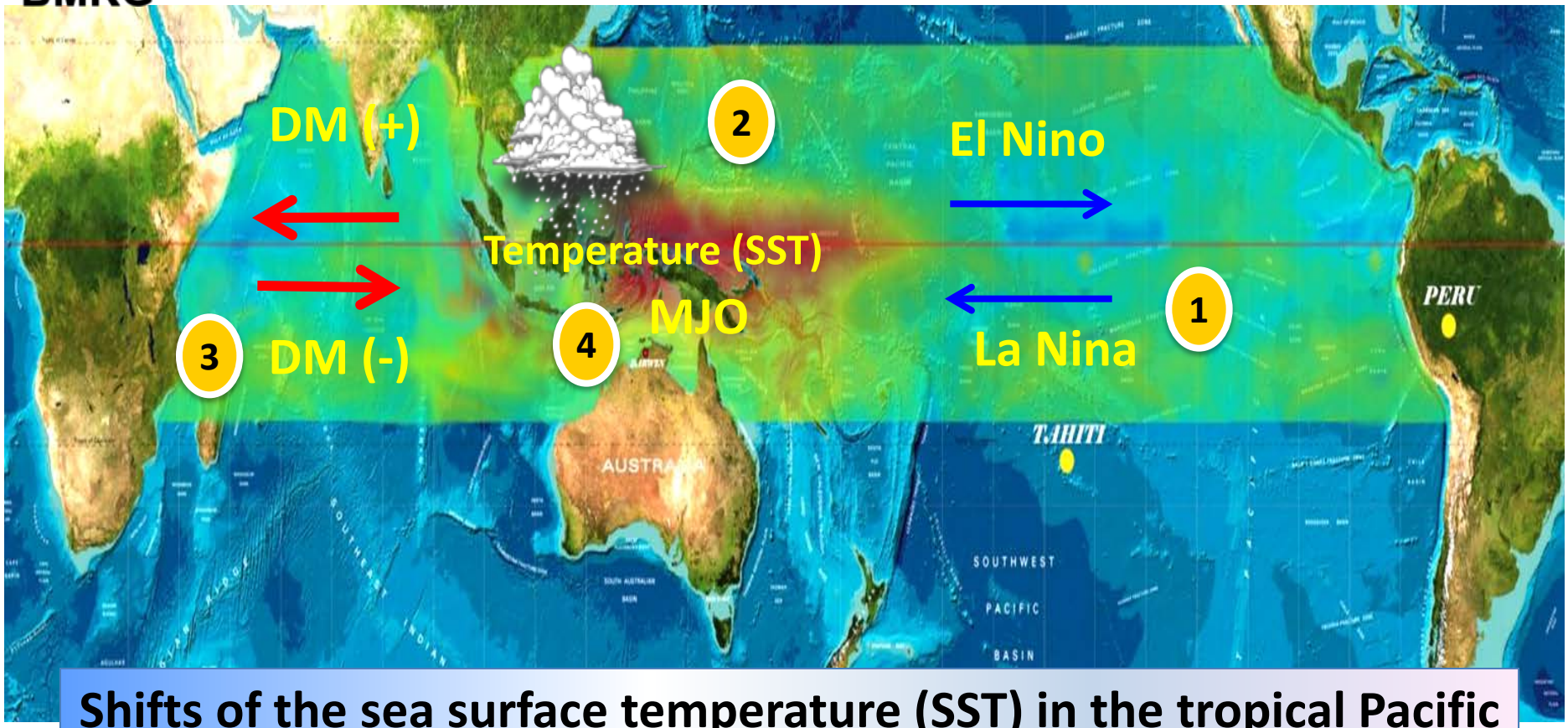
What is MIDAS?

MIDAS is national portal of marine/ocean climate data and information to provide integrated marine data to support weather and climate information services in Indonesia

Why We Need MIDAS?

1. Indonesia as a maritime country need to develop a national marine information portal.
2. Marine data are scaterred in many agencies
3. MIDAS as a national portal of marine/ocean climate data and information will support Coastal Inundation Forecasting Demonstration Project Indonesia (CIFDP-I);

CLIMATE DRIVERS IN INDONESIA

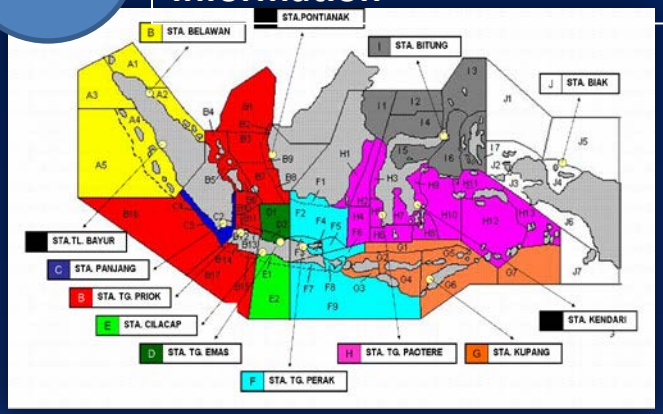


Shifts of the sea surface temperature (SST) in the tropical Pacific Ocean- the warm pool and atmosphere convective region: ENSO (El Niño Southern Oscillation), Dipole Mode (DM) and MJO events are major climate drivers.

BMKG POTENTIAL

1

10 Regional Marine tation dan 3 Supporting Station for Marine Information



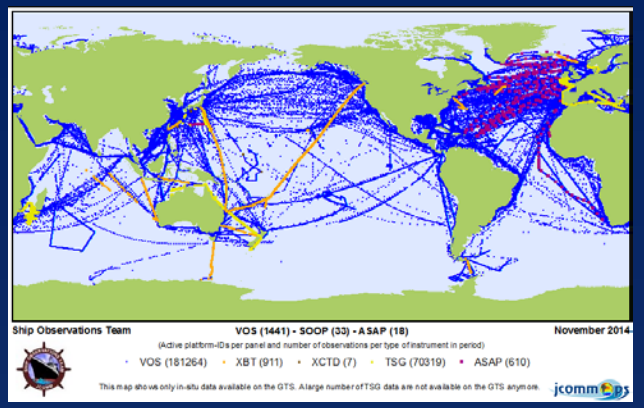
2

AWS (Automatic Weather Station)

15 AWS Ship
2 AWS Rig
20 AWS Port

3

VOS (Voluntary Observing Ships)



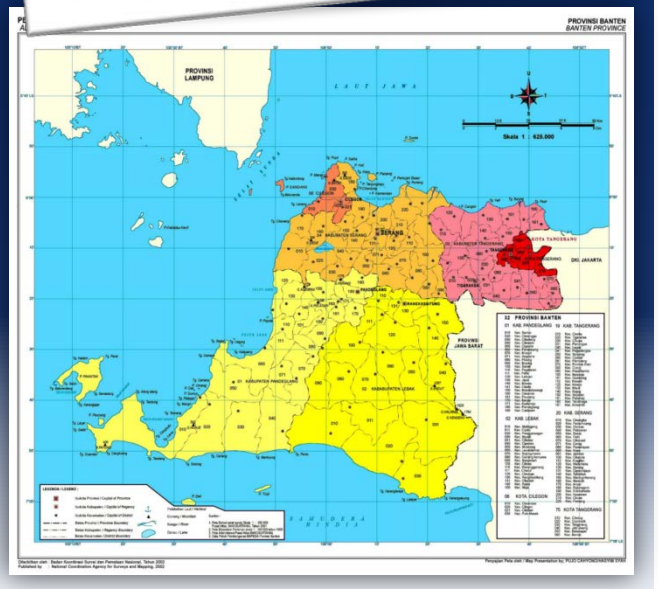
4

1 HF Radar

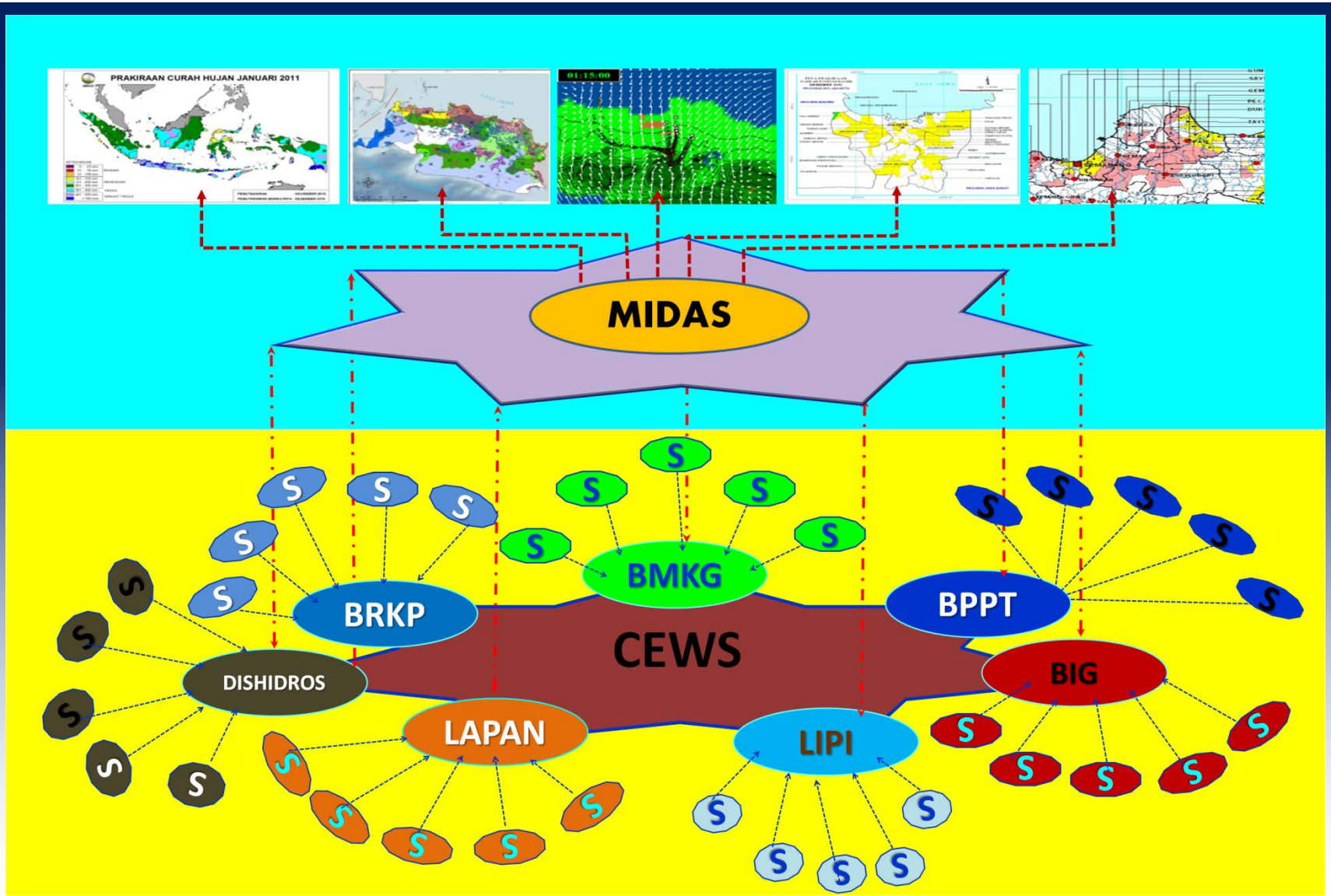
Location
Serang, Banten

DEVELOPMENT of COOPERATION for MARINE OBSERVATION INFORMATION

1. Lessons learned from Ina TEWS development process that has been established since 2008.
2. Needed national coordination involving various institutions in the country
3. Based on the BMKG's Strategic Plan for supporting Early Warning System (Meteorological Early Warning System (MEWS), Ina TEWS, Climate Early Warning System (CEWS)).



MARINE INTEGRATED DATA and ANALYSIS SYSTEM (MIDAS)



POTENTIAL CAPACITY to SUPPORT MIDAS

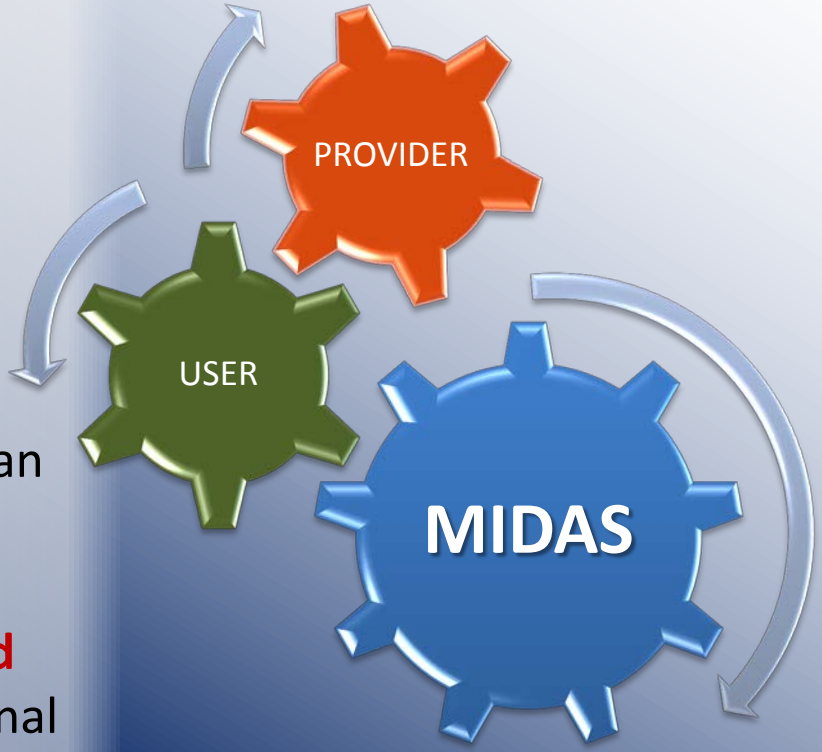
No.	AGENCIES	POTENTIAL CAPACITY
1.	BPPT (Agency for Assesment and Application Technology)	MIKE 21. TUNAMI. Have bathymetric data but only limited for research location Buoy data
2.	PUSAIR (National Agency for Water Resource-Ministry of Public Work)	- have applied Jakarta FEWS , collaborating with BMKG,KNMI and Deltares
3.	DISHIDROS (Hydrooceanic Office-Indonesian Navy)	- ENC (Electronic Navigation Chart) - Tide prediction
4.	BIG (National Spatial Agency)	- 115 tide gauge stations - Coastal laboratory in Jogjakarta for flood modelling - Landuse and land system map
5.	BPOL KKP (Research and Development Center for Marine and Coastal Resources-Ministry of Marine Affairs and Fisheries)	- HPC for running model in parallel.
6.	LAPAN (National Aeronautic and Space Agency)	-Satellite data (Landsat and IKONOS)

MIDAS DEVELOPMENT

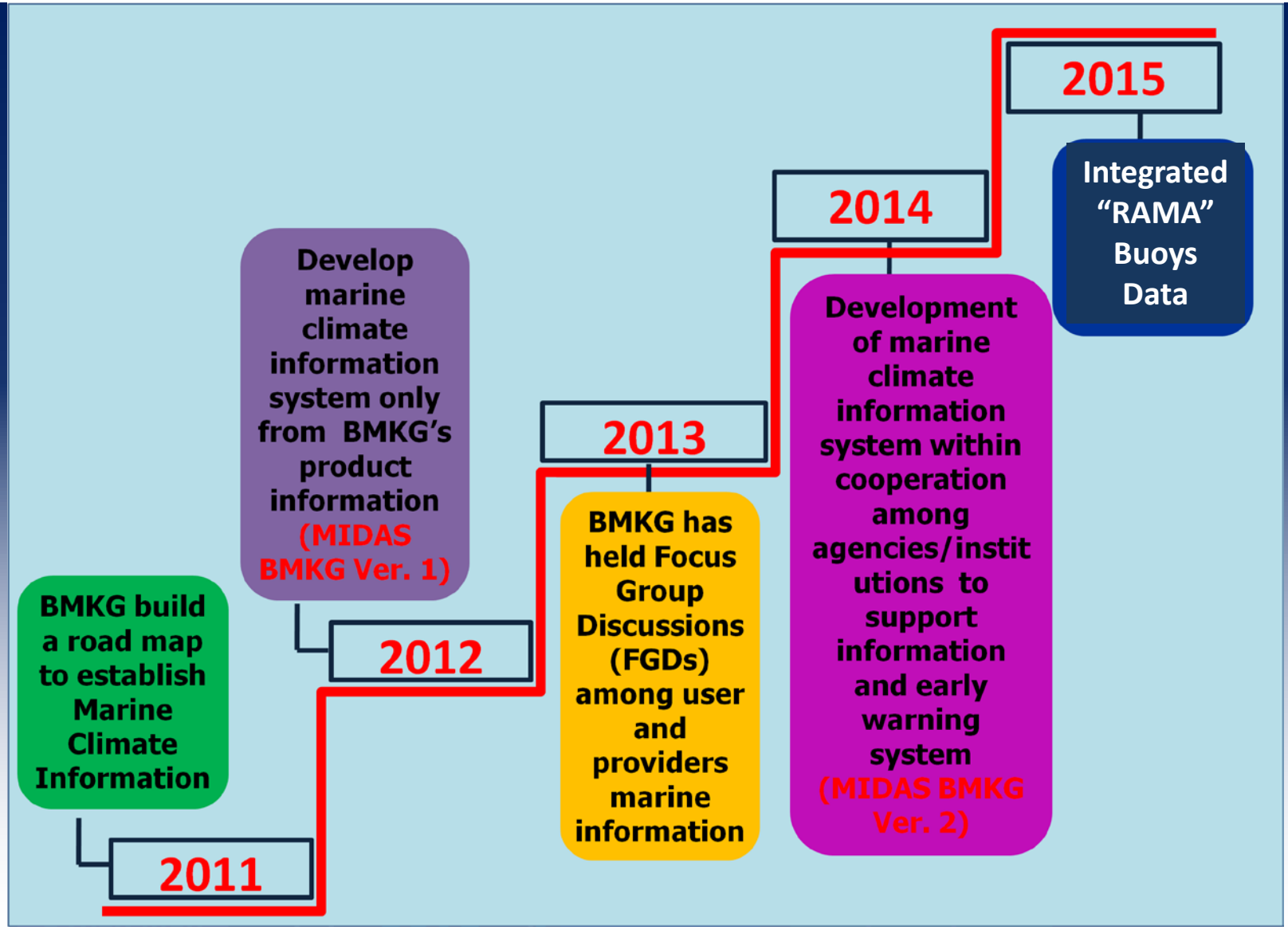
BMKG was held **Focus Group Discussions (FGDs)** in 2013 among the Providers and the Users of marine information at national level, resulting in the followings:

1. Commitment to establish **national working groups**(Observation, Modeling, Product Information, Dissemination and Capacity Building) as a first step toward the establishment of Indonesian integrated ocean information system.

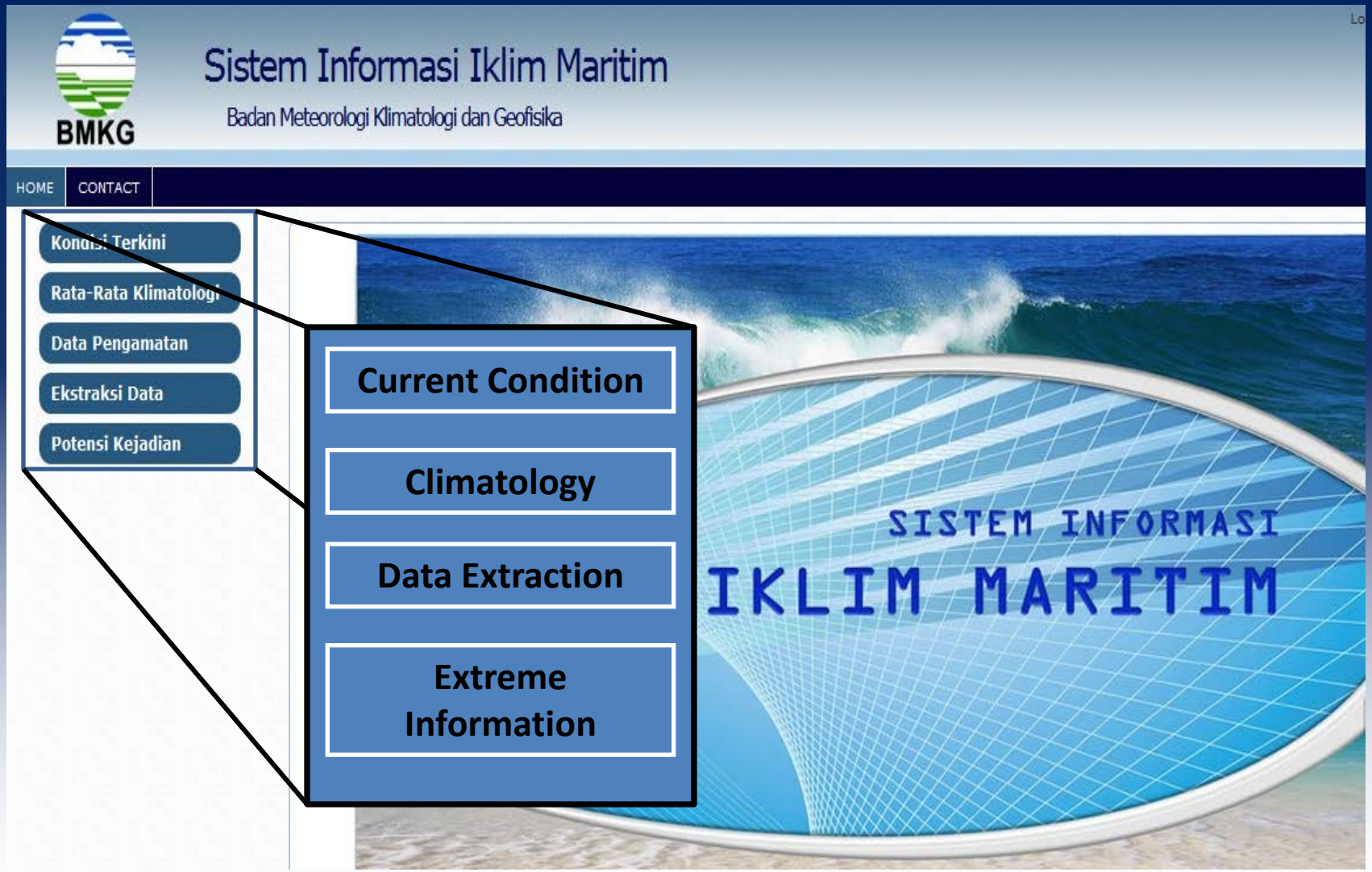
2. An agreement to develop **Marine Integrated Data and Analysis System (MIDAS)** as national portal of to support ocean climate data and information



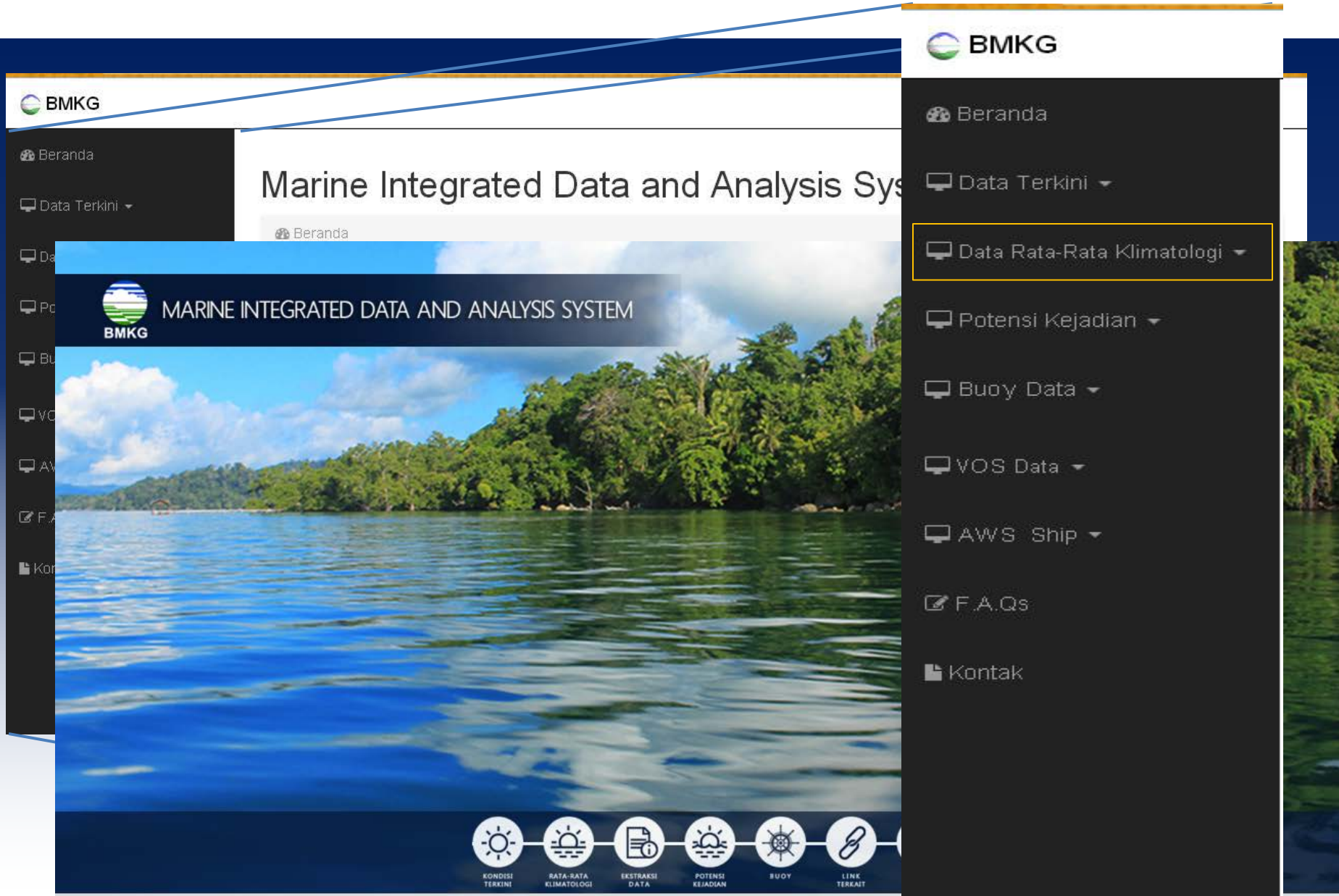
DEVELOPMENT of MIDAS

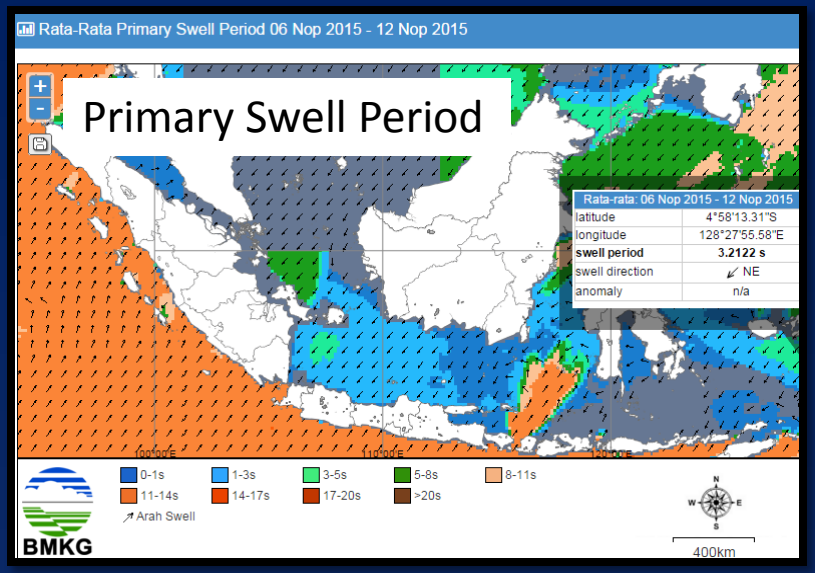


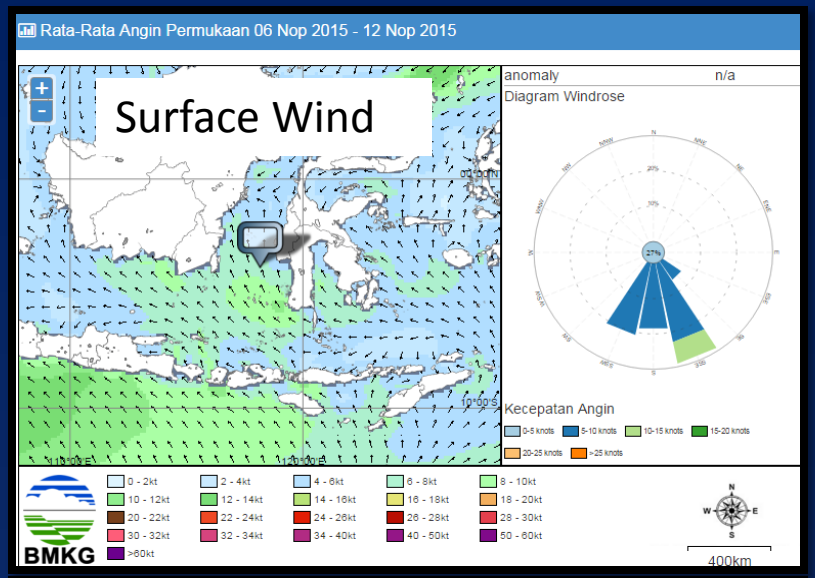
FRONTPAGE of MIDAS Ver. 1

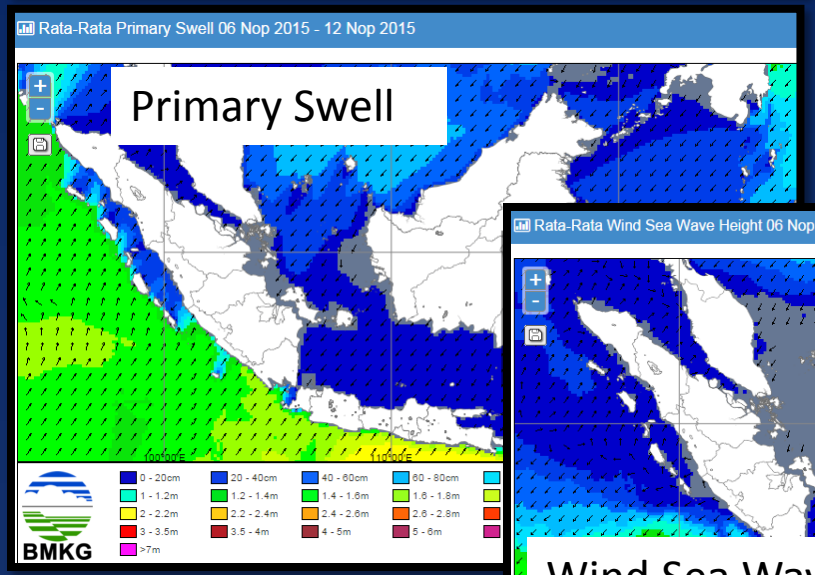


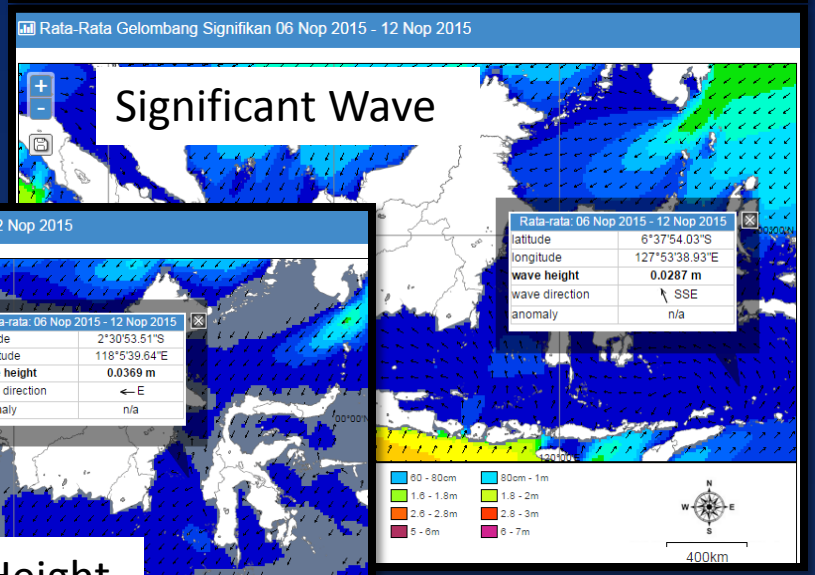
FRONTPAGE of MIDAS Ver. 2

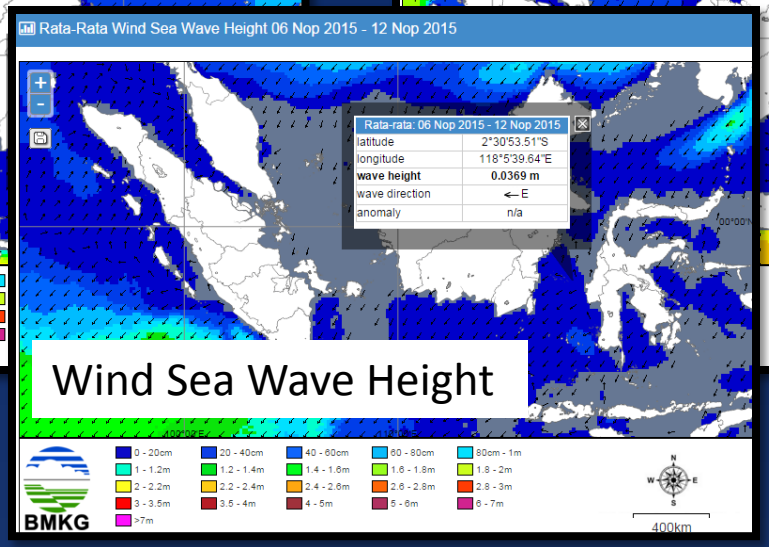




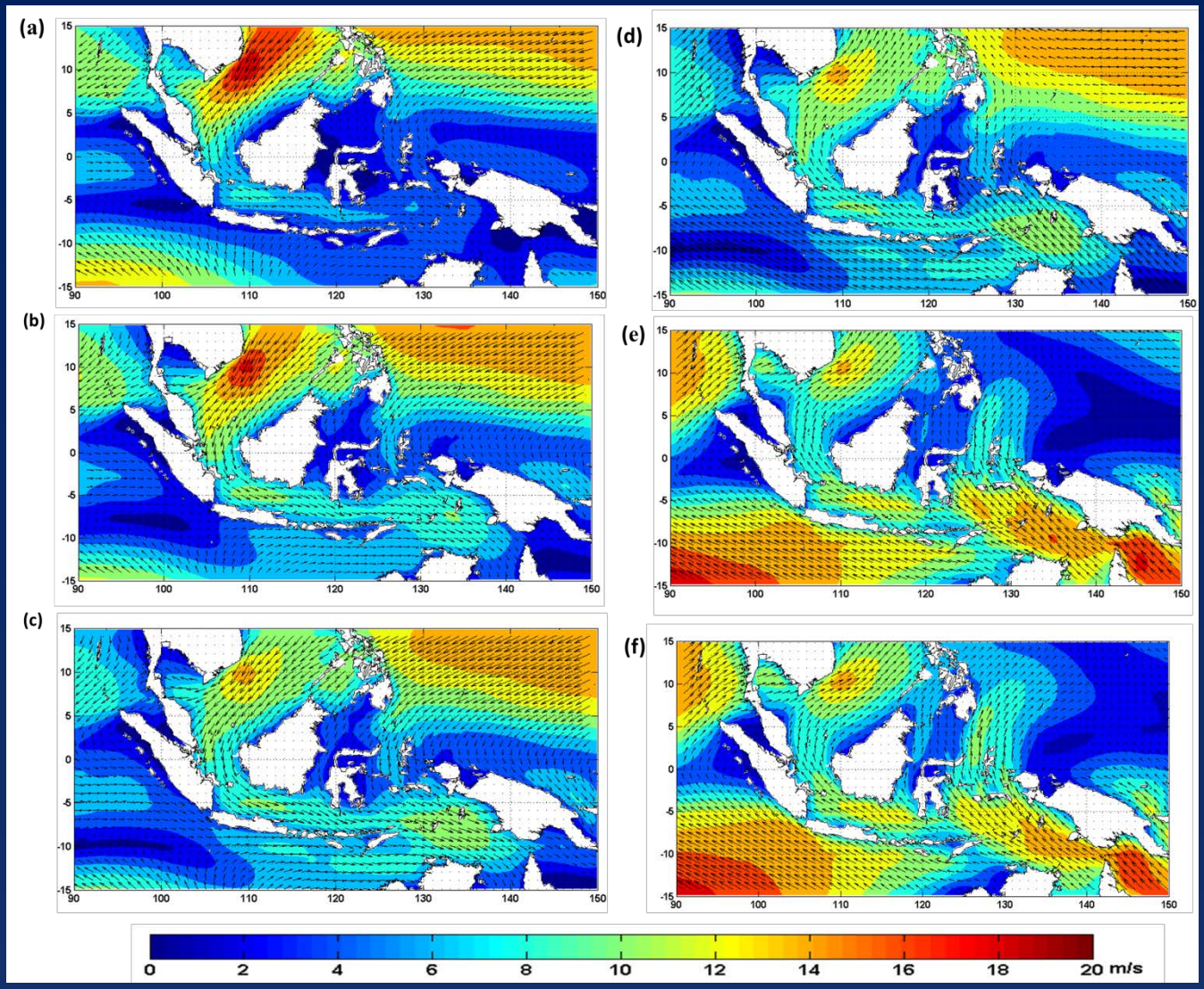




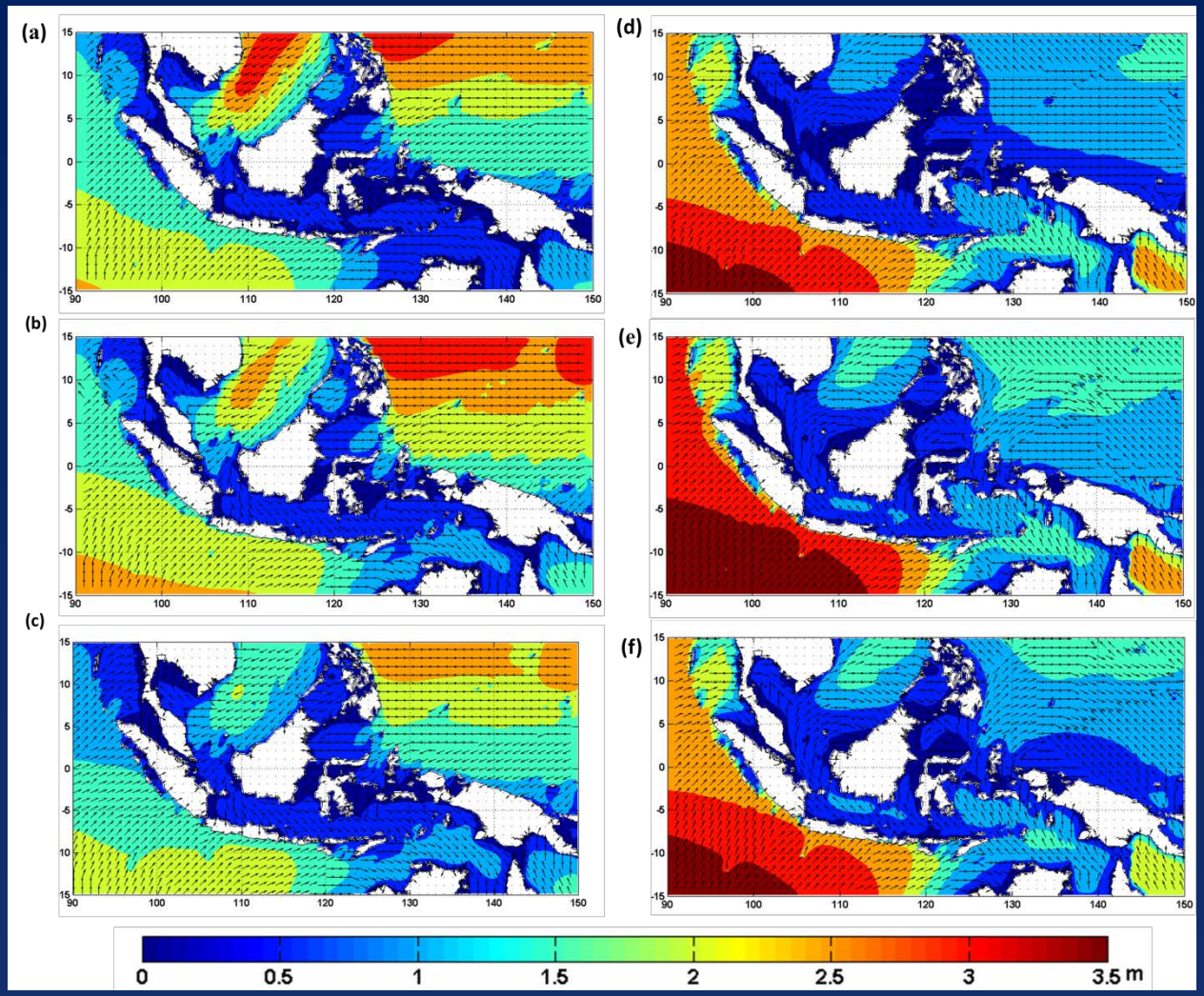




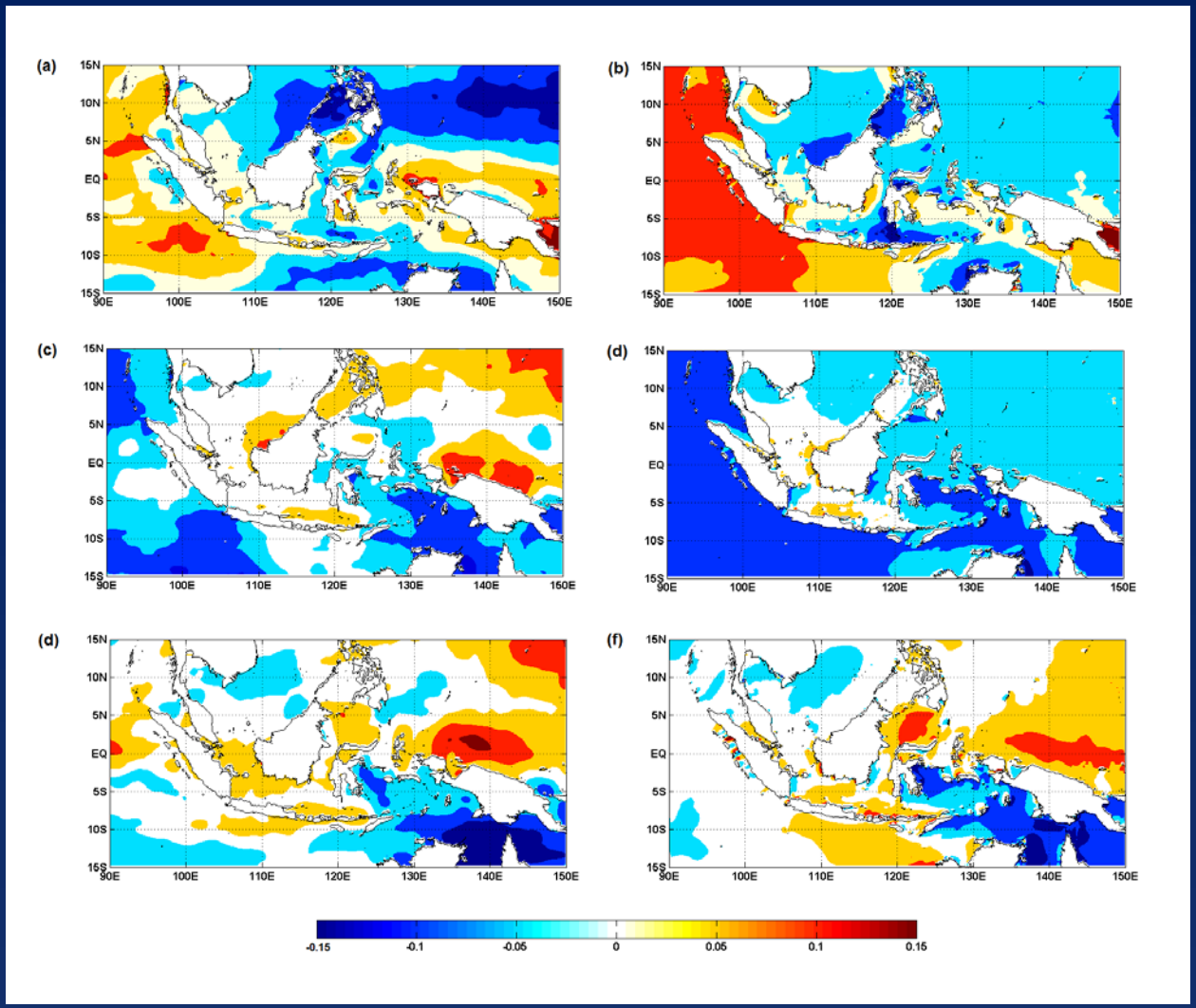
MIDAS INFORMATION PRODUCT



The average wind speed and direction at the Asian and Australian monsoon peak, from 1988-2011. (a). December, (b).January, (c).February, (d). June, (e). July, (f). August

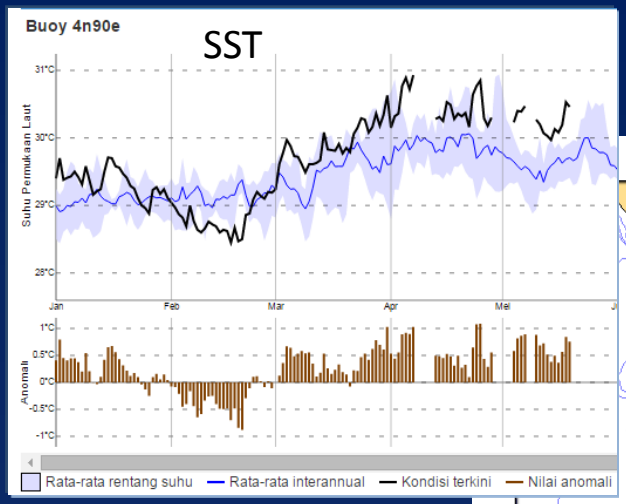


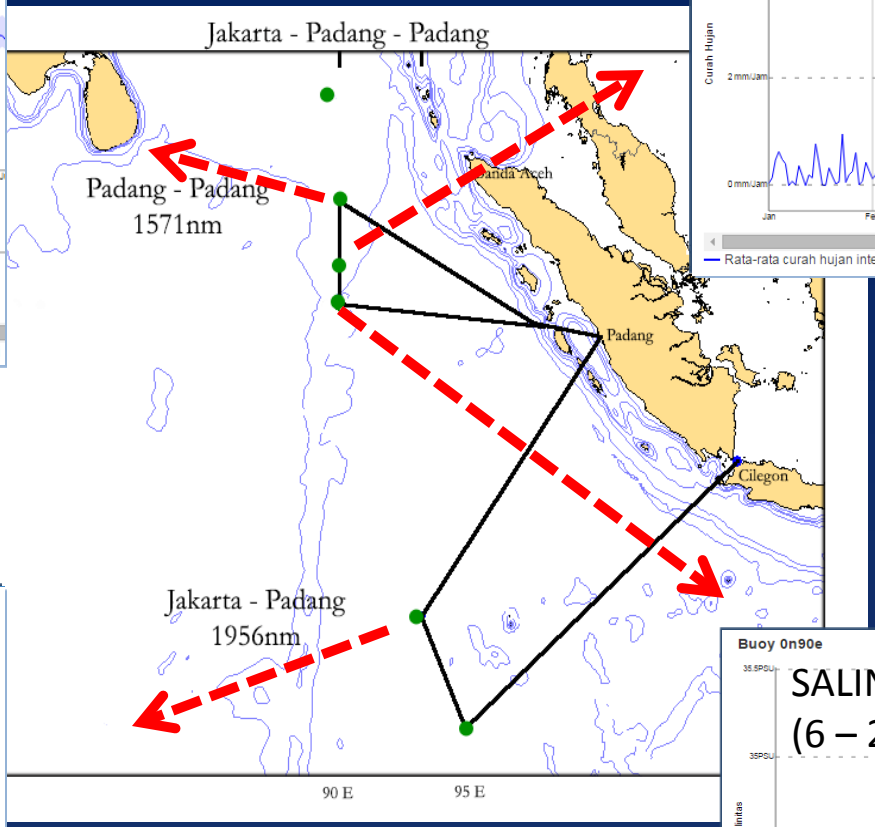
The average of significant wave height andmean wave direction at the Asian and Australian monsoon peak, from 1988-2011. (a). December, (b).January, (c).February, (d). June, (e). July, (f). August.

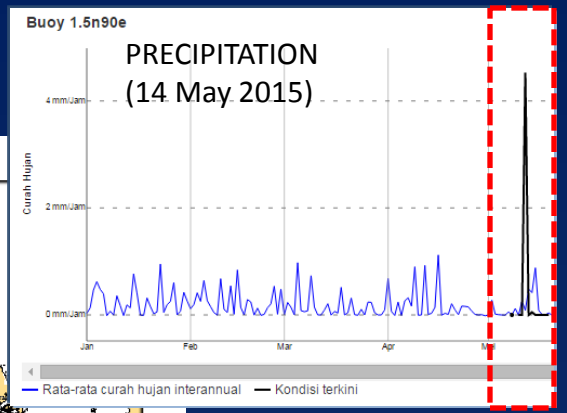


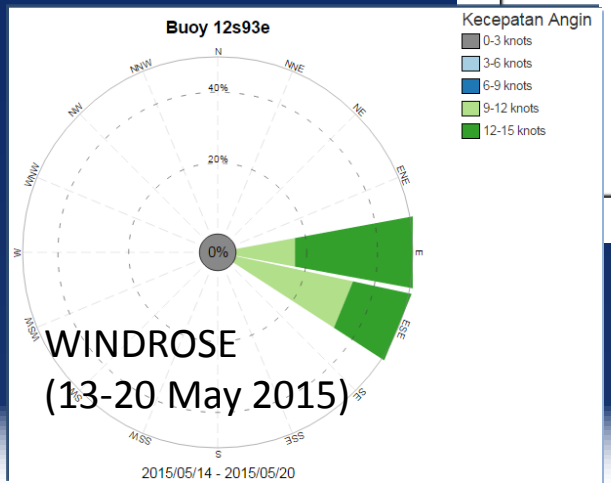
Correlation between wind speed (left panels) and signifcant wave height (SWH)(right panels) with MJO index. (a) wind speed and (b) SWH with MJO phase 3, (c) and (d) with MJO phase 4, (e) and (f) with MJO phase 5. Shaded area shows statistically significant results within 95%

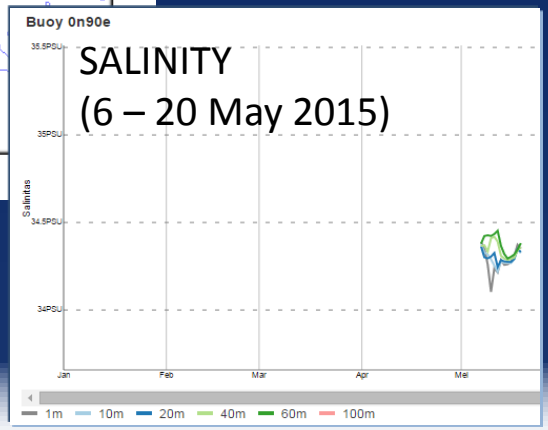
Integrated RAMA Buoys Data











DATA BUOY

LINKS OF MIDAS INTERFACE

MIDAS Interface link into:

- VOS Database
- Indonesia Data Buoy Center
- Tide Prediction and COAP Data Center
- AWS Ship

CLOSURE

1. The integrated marine data is of necessity, not only because of Indonesia's geographical condition which is 70% of water, but also because of the fact that atmospheric-ocean interaction presumably affects all hazardeous extreme weather and climate.
2. Strong commitments among national agencies is a key for the succesful of MIDAS
3. MIDAS will bridge an integrated data and serve as a simpler user oriented marine data based on weather and climate and its impact information.

Thank You
For Your Attention