

Development of Satellite Based Fishery Forecasting system for Sri Lanka

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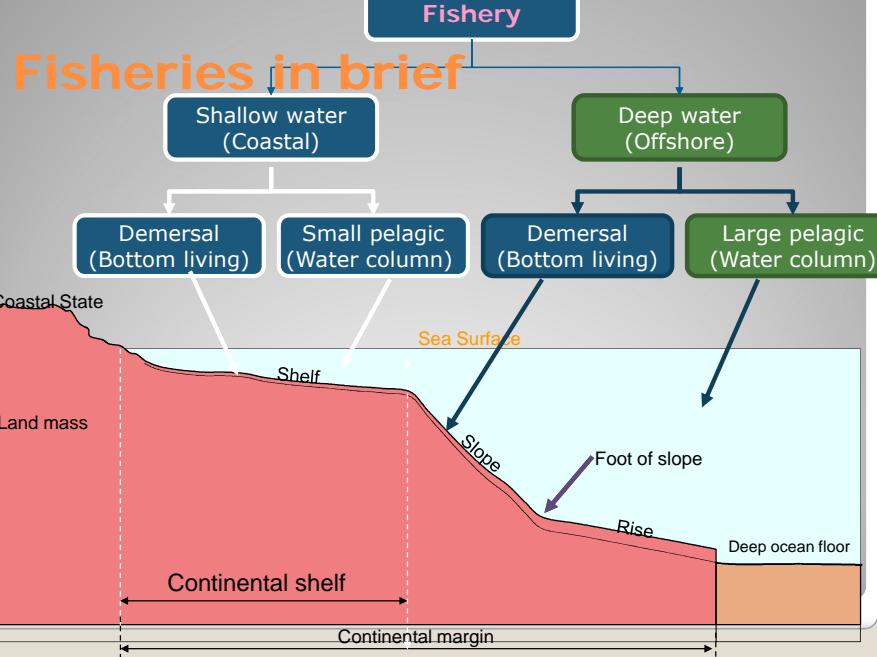


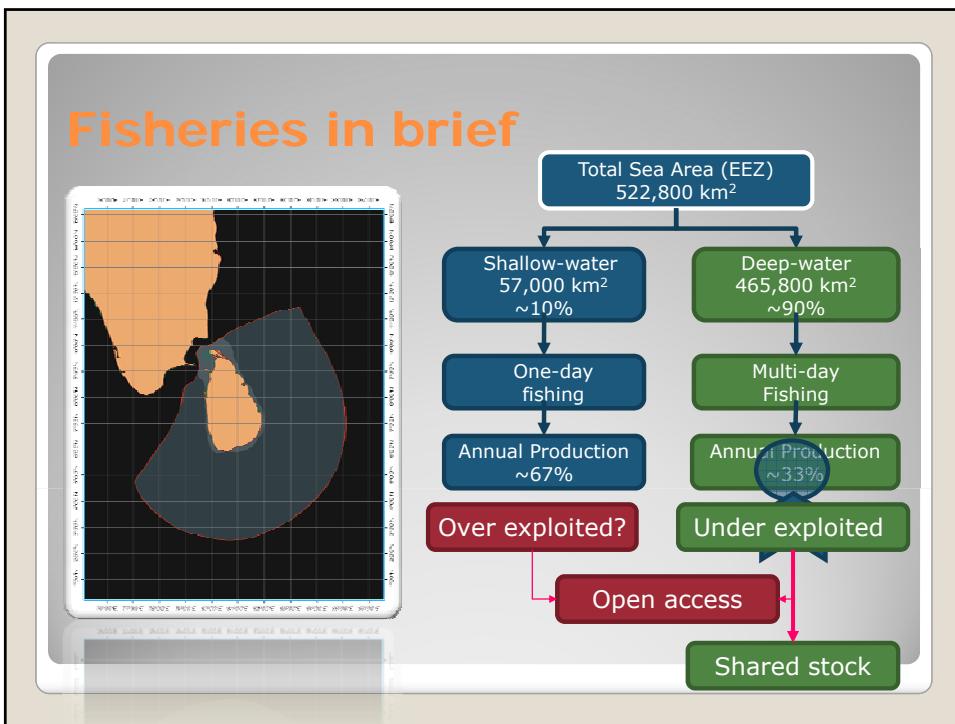
Overview

- Objectives
- Fisheries in Brief
 - Types of fisheries
 - Fishing fleets/gear
 - Target species
- Fish forecasting
 - Data used
 - Forecasting parameters
- Limitations
 - Satellite data
 - Fisheries data
 - Buoy data
- Developments need
 - NRT satellite data
 - Automated data processing
 - Human resources

Project Objectives

- Increase the economic efficiency of offshore fishery
 - Reduce the coastal fishing pressure
 - Reduce the operational coast of multi-day fishing fleets
 - Increase the fleet facilities
 - Increase the quality of fish (aiming export)
- Capacity building
 - Human resources (fisheries Oceanography, RS, GIS)
 - Infrastructure development (Hardware, Software and network)
- Data base development
 - Fisheries
 - Remote sensing
 - Oceanographic
- Fisheries advisory dissemination

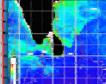




Fishery forecasting

Data used

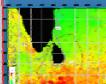
- Satellite
- Fisheries
- Ocean buoy



Terra/Aqua MODIS

- *.L3m_3D_SST_4.hdf
- *.L3m_8D_CHL_4.hdf

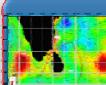
<http://oceancolor.gsfc.nasa.gov/cgi/level3>



AMSR-E

- amsre_20080209v5_d3d
- amsre_20080209rt_d3d

ftp://ftp.ssmi.com/amsre/bmaps_v05



AVISO

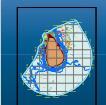
- SSH (Absolute)
- SSC (Geostrophic)

<ftp://ftp.cls.fr/pub/oceano/AVISO/SSH/duacs/global/nrt/madt/merged/h/>

Fishery forecasting

Data used

- Satellite
- Fisheries
- Ocean buoy



Catch & Effort

- Date /Time
- GPS position
- Catch (Species wise)



Fishing Gear

- Longline (no. of hooks)
- Gillnet (net pieces)
- Bait
- Fishing depth



Field Observations

- Temperature
- :

Fishery forecasting

Data used

- Satellite
- Fisheries
- Ocean buoy

Argo float

- Daily data over monthly

<http://w4.jcommops.org/website/Argo/viewer.htm>

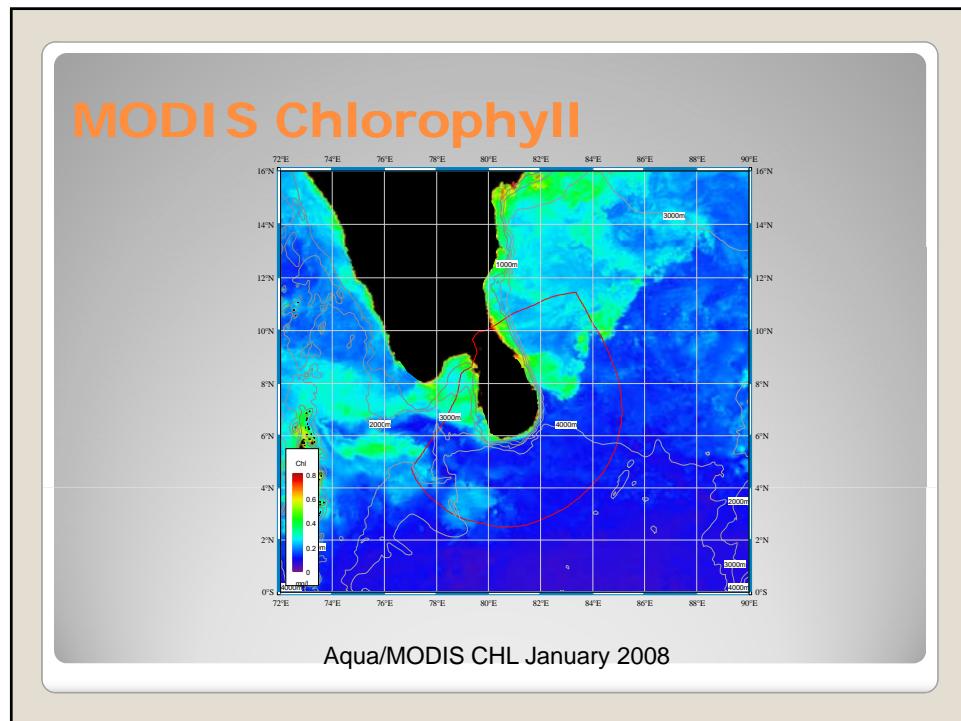
Data products

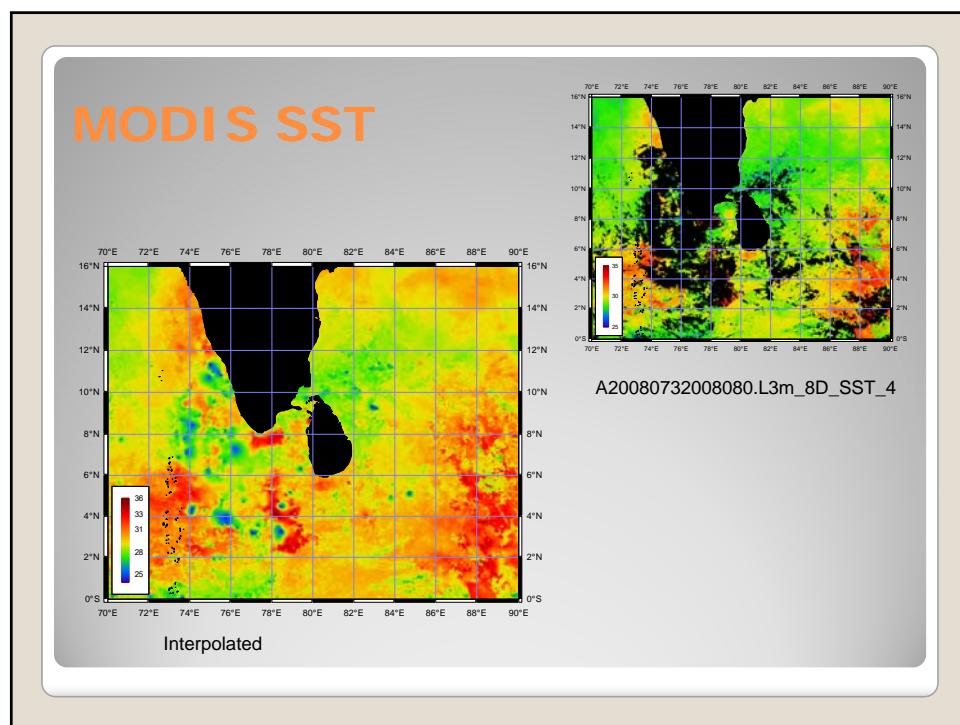
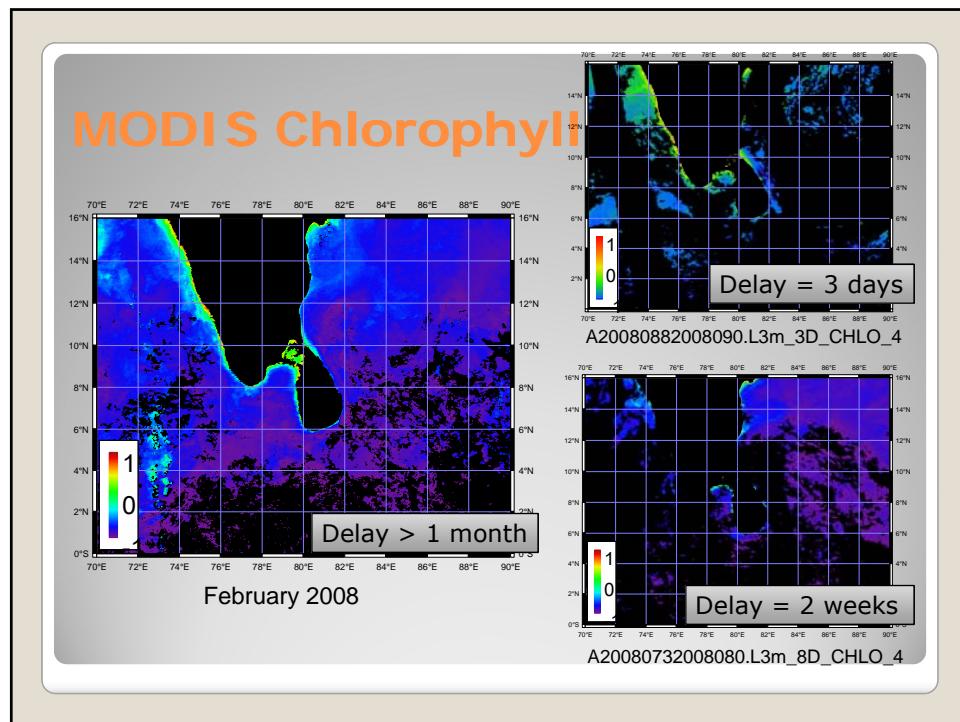
- Thermocline (Spatial & Vertical)
- Helocline

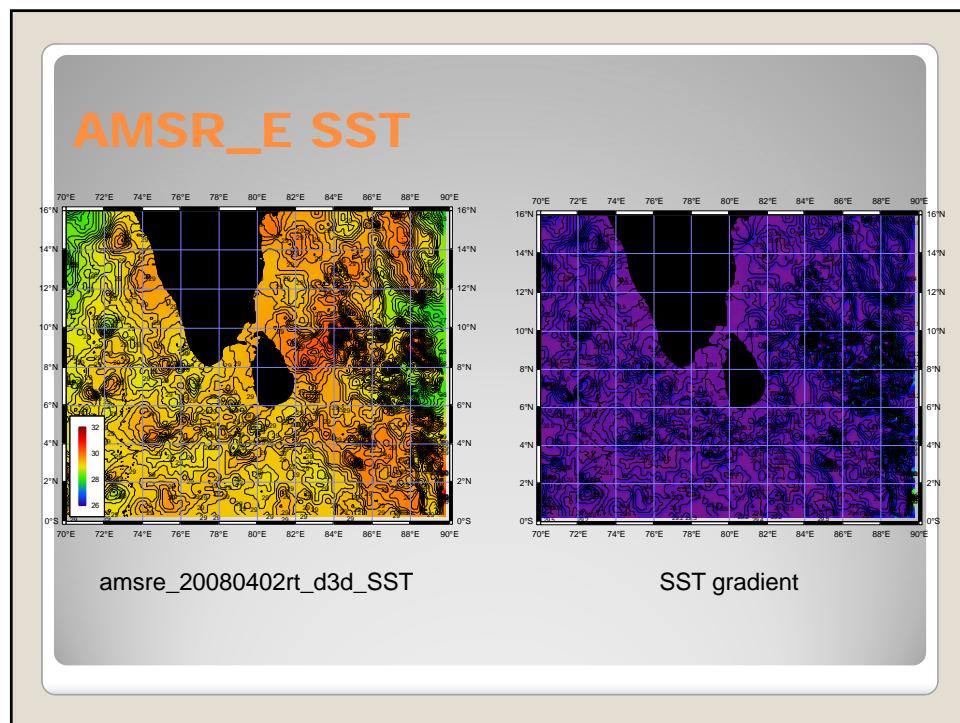
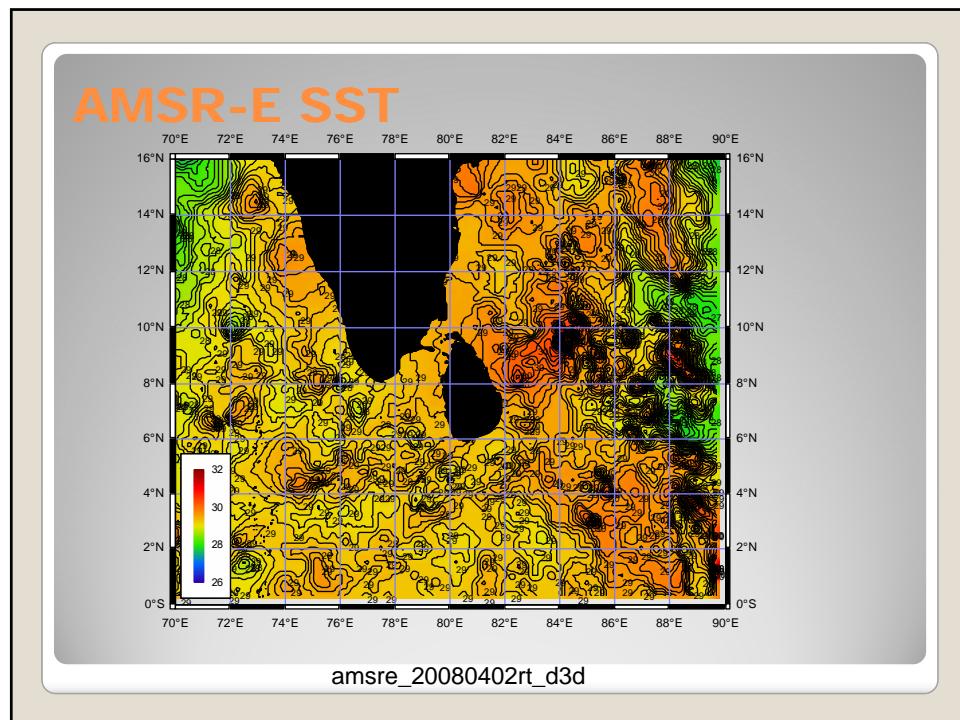
Field Observations

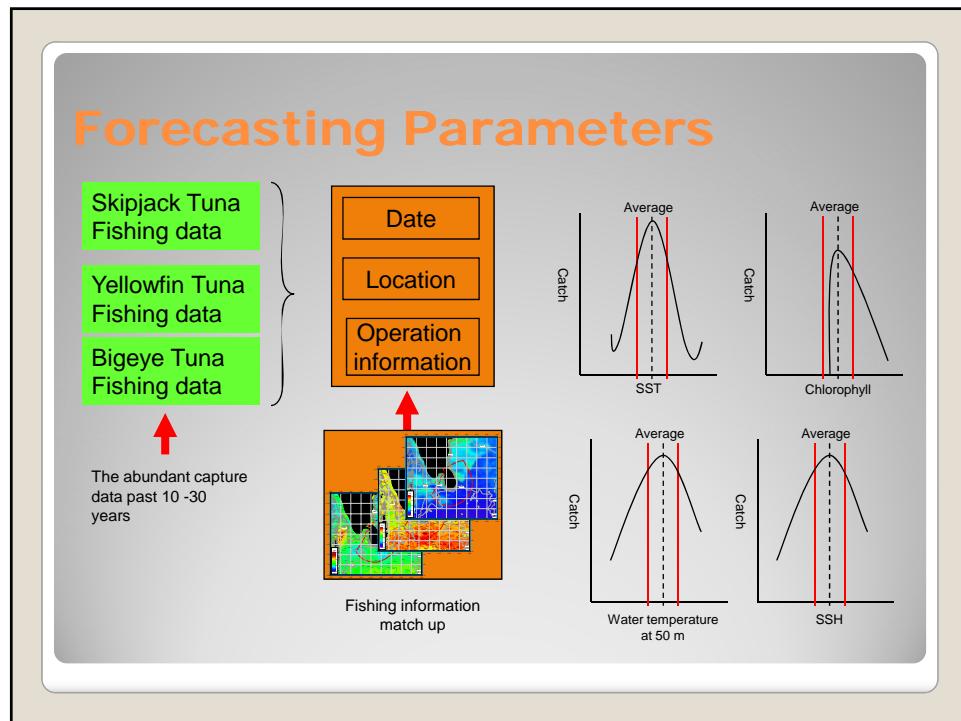
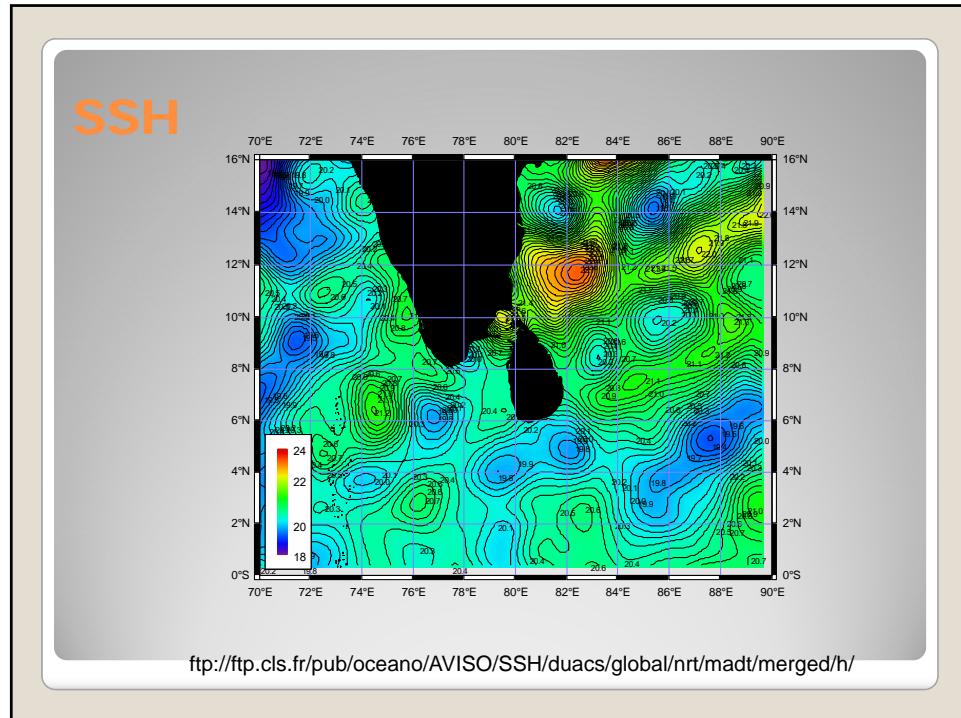
- CTD measurements (vertical)
- Chlorophyll (Vertical)
-

Establishment of seasonal variation of Thermocline



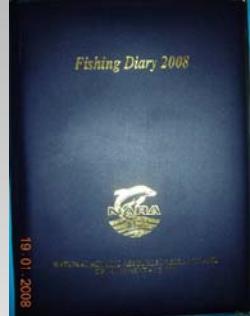






Fisheries data collection

Boat Name:	January			01	2008
IMULA:	1st	2nd	Harvest	1st	2nd
	Longline/ Net	Longline/ Net	Skipjack (kg)	No. of fish	No. of fish
Bate			0-2		
Starting time			2-5		
Temperature			>5		
Start Location	N	N	Yellowfin		
	E	E	0-5		
End location	N	N	5-20		
	E	E	20-40		
End time			>40		
No. of hooks/Net			Other species	(kg)	No. of fish
Fishing depth					
Recovery time					
Other info					



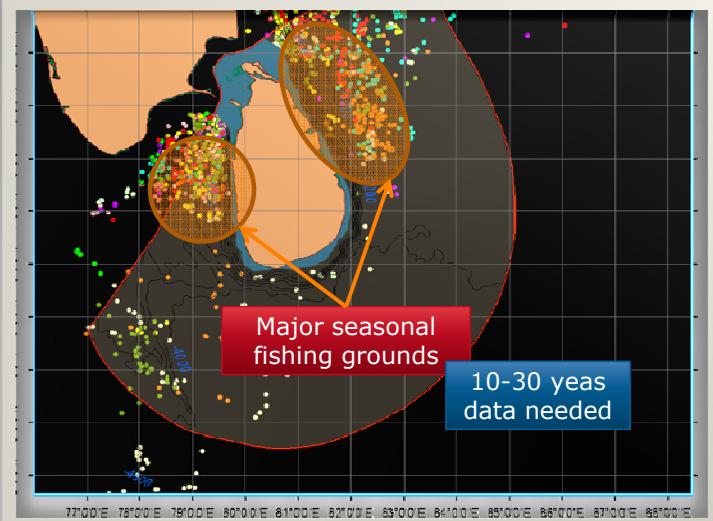
Fishing Diary



Fishing Diary

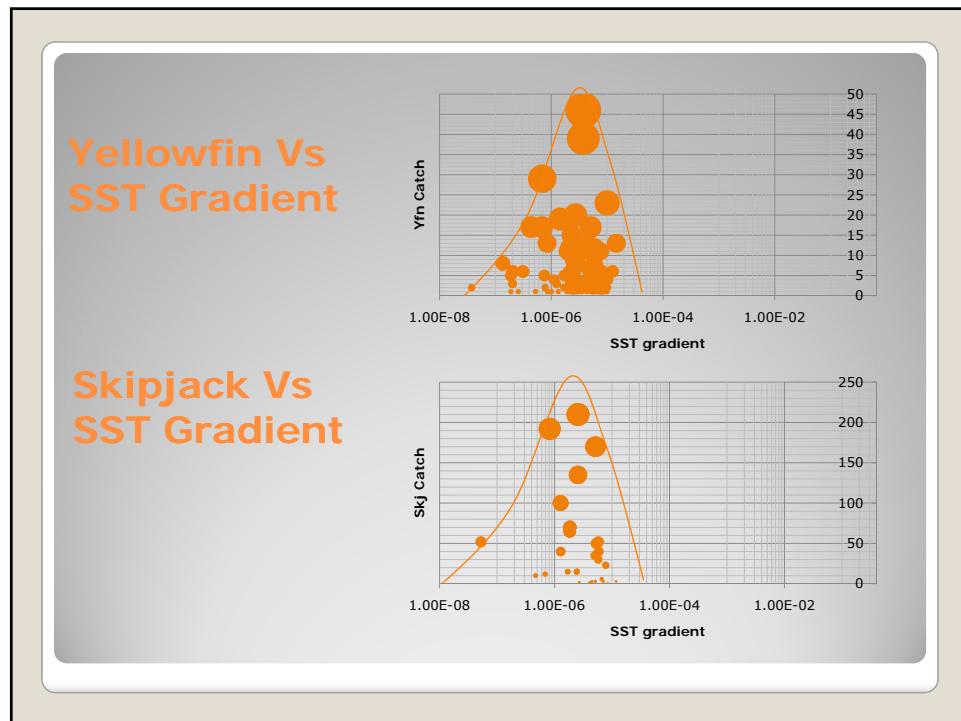
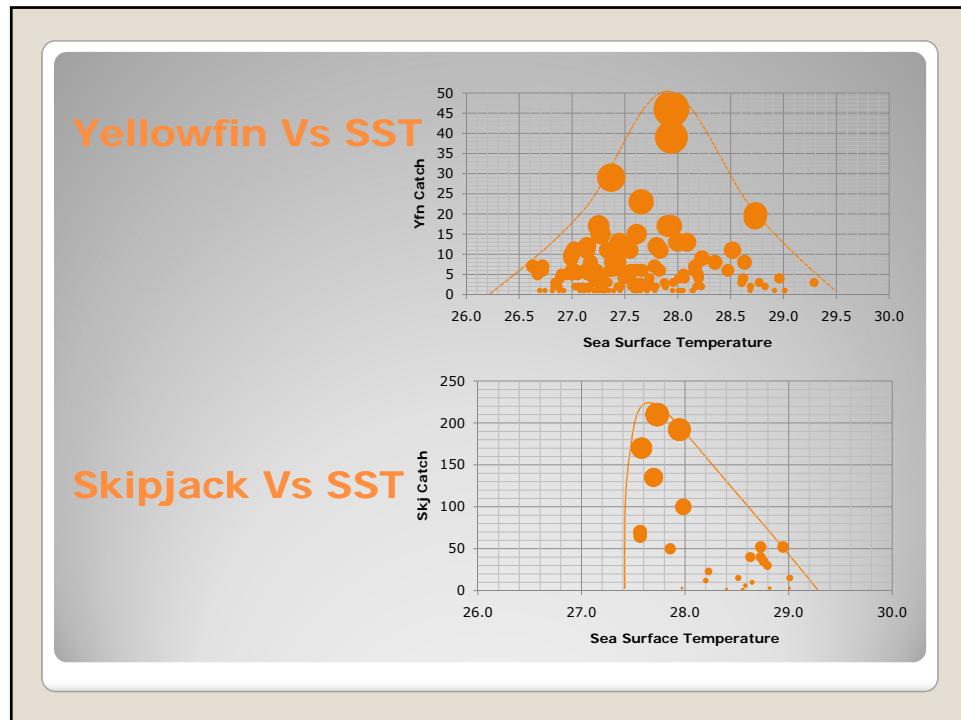


Fisheries data for match ups

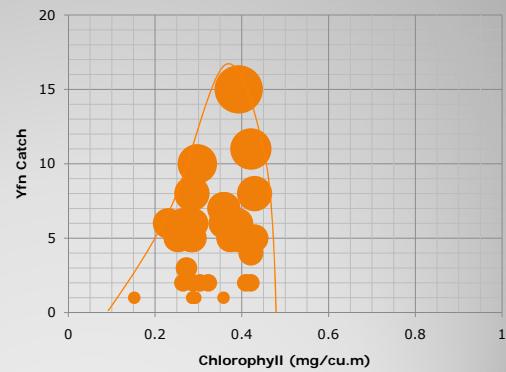


Major seasonal fishing grounds

10-30 years data needed

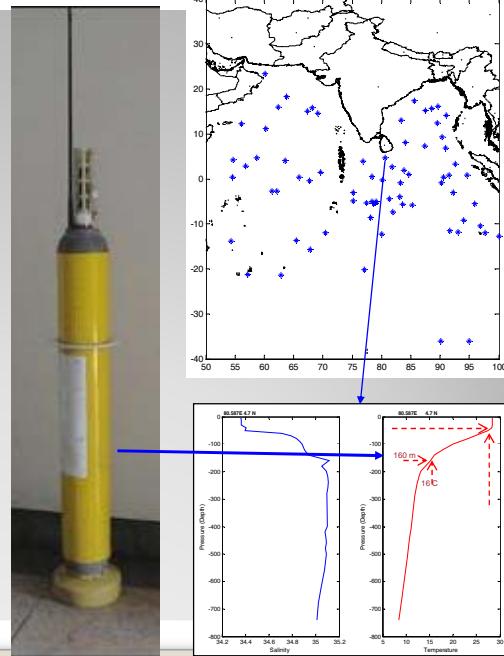


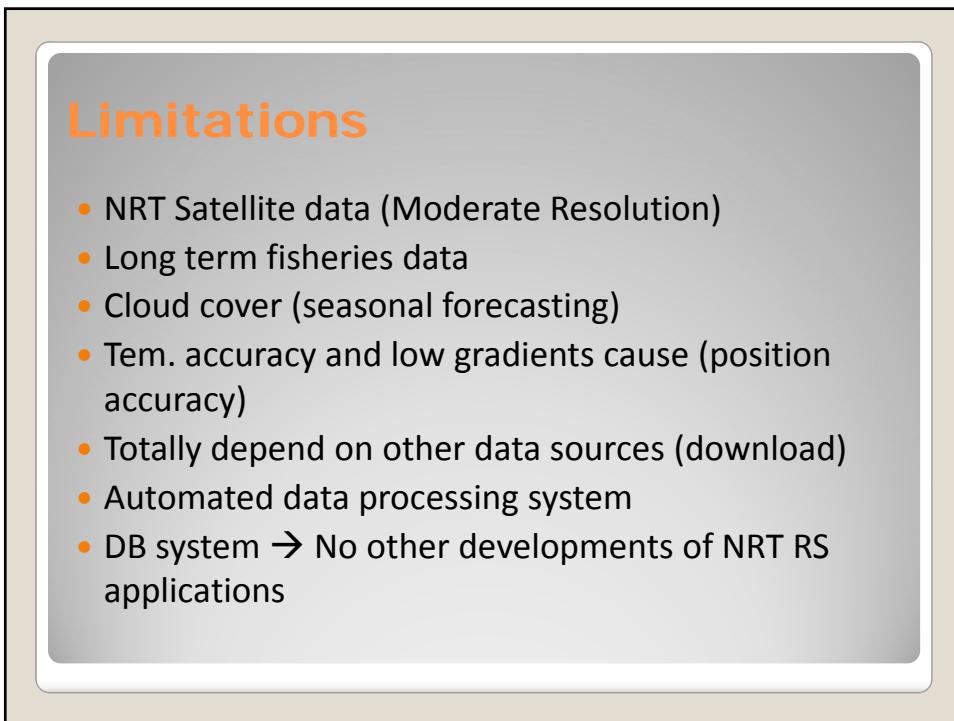
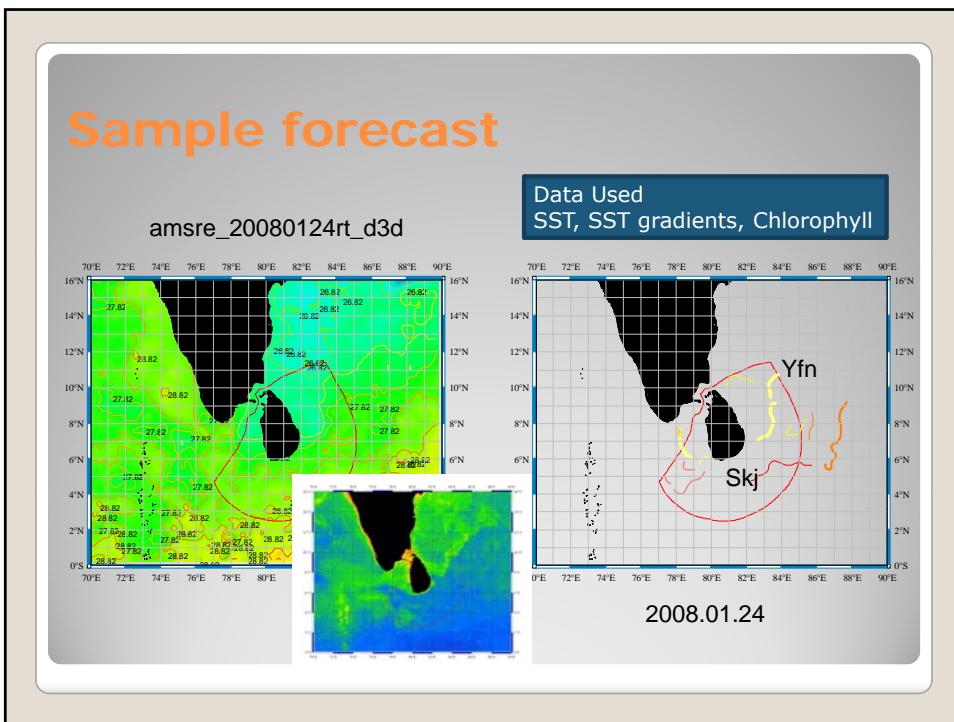
Yellowfin Vs Chlorophyll

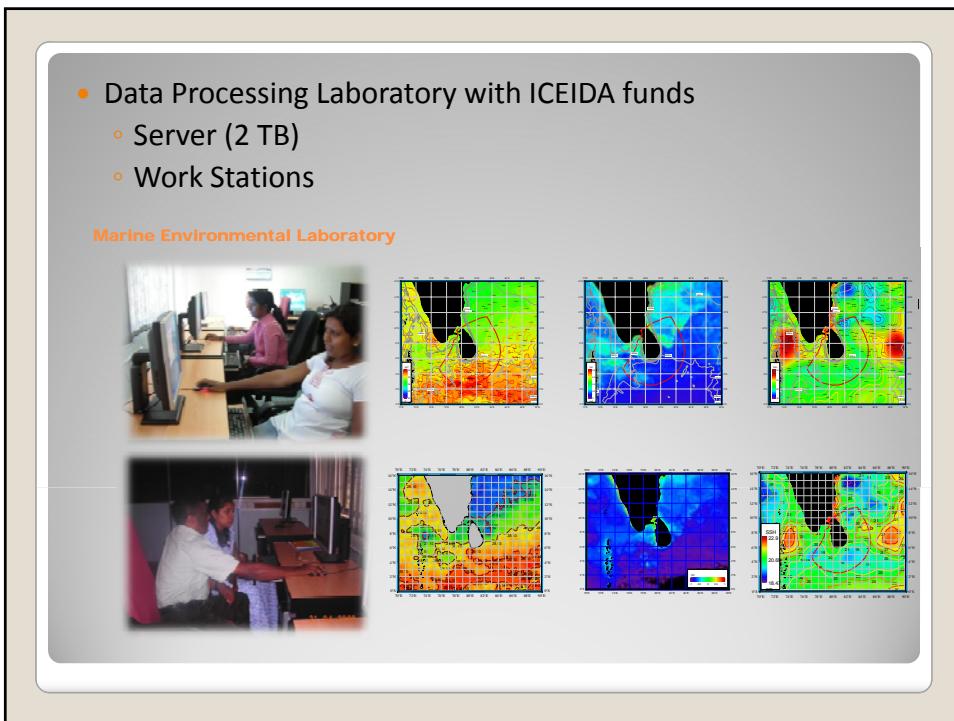
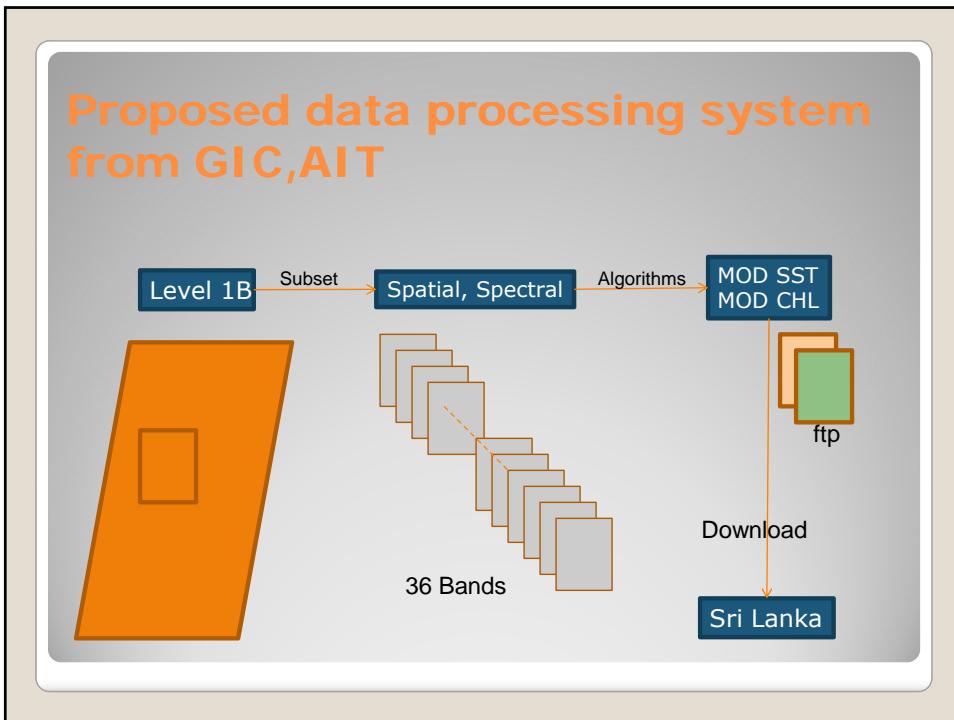


Other parameters for match ups

- Vertical temperature
- Geostrophic currents
- Dissolved Oxygen







Future work

- Determination of precise forecasting parameters
 - RS and Fisheries data processing
- Automated data processing system development
 - HR development
- Establishment of DB system or alternative for NRT data access
 - Funding, HR development
- Development of fishery forecasting information service
- Looking for Research Collaboration

Thank you