

Background and Initial network

- Capitalize and exploit the bilateral Indo-Norwegian cooperation built up since 1998 at the Nansen Environmental Research Centre – India (NERCI)
- Utilize and expand the Indian research network of European partners
- Use and expand the research and higher education network of cooperation within India

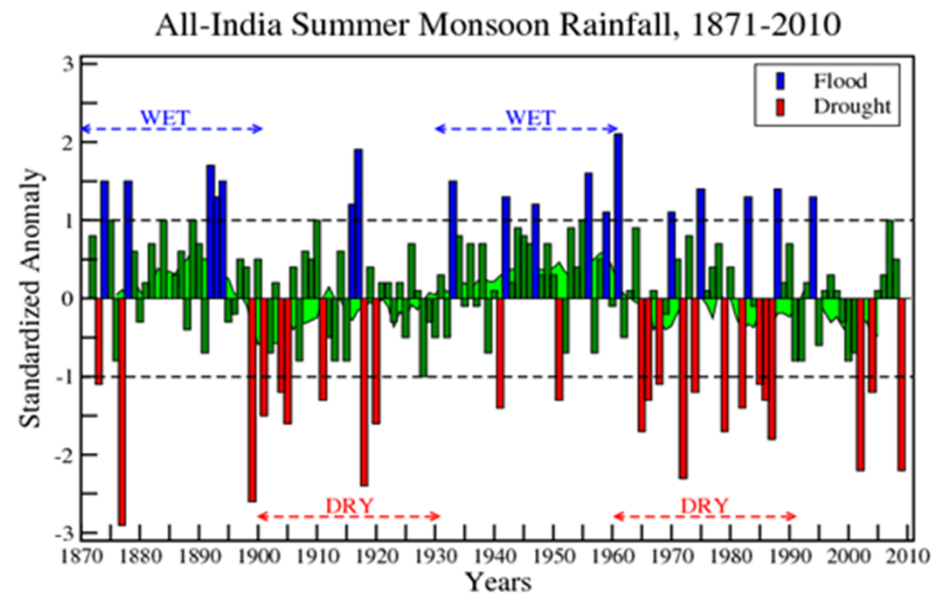
European project partners:

- Nansen Environmental and Remote Sensing Center (NERSC) - Norway
- Plymouth Marine Laboratory (PML) - UK
- Centro Euromediterraneo per i Cambiamenti Climatici (CMCC) – Italy
- Institut Français Recherche Pour L'Exploitation de la Mer (IFREMER) - France
- Stichting Dienst Landbouwkundig Onderzoek – Alterra - The Netherlands

Research area 1: Monsoon and ocean variability,

Climate change and Sea level variations

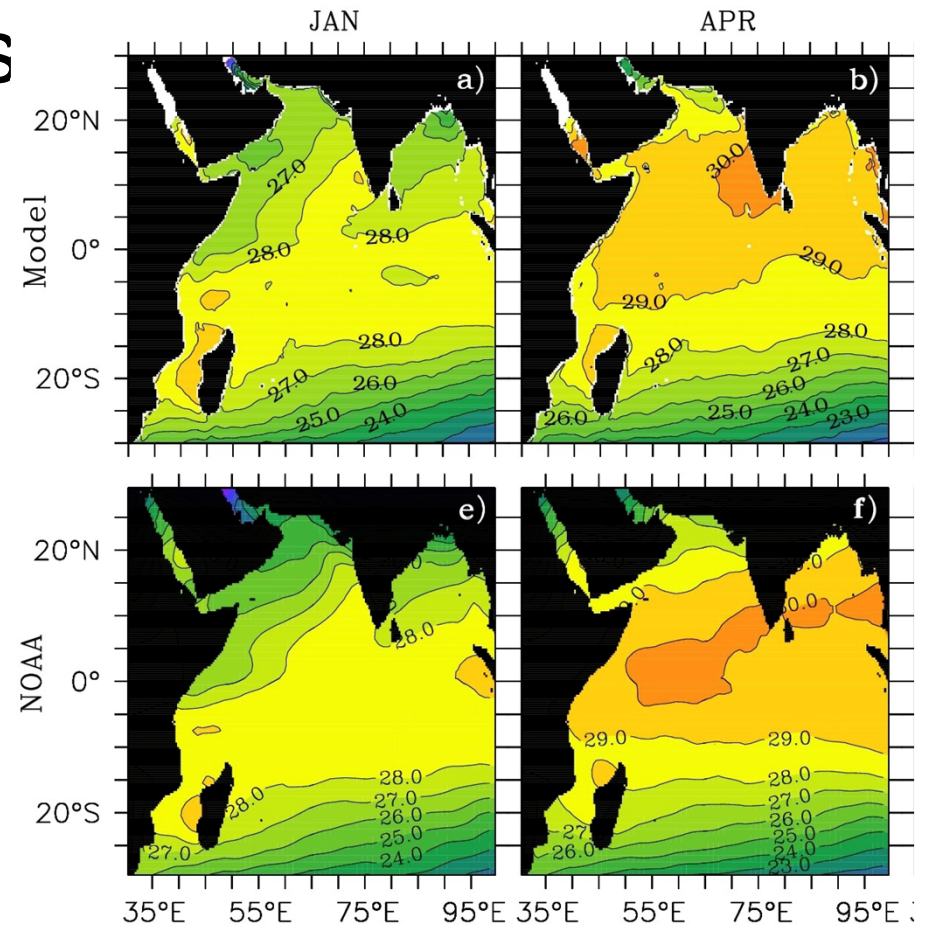
- **Leader:** PV. Joseph, NERCI,
- **Co-leader:** Annalisa Cherchi, CMCC, Italy
- Investigation of the role of the Indian Ocean on the Indian summer monsoon variability
- Intra-seasonal fluctuations of the cold pool of Bay of Bengal during the summer monsoon season.
- Causes for the rapid warming of the equatorial Indian Ocean since 1950s, its influence on the Indian summer monsoon season and its global climatic teleconnections.
- Studying the integrated land-sea effects on monsoon variability.
- Ocean modeling for studies of coastal upwelling.
- Sea level studies using satellite radar altimeter data and historic in situ data.



Courtesy: P.V. Joseph, NERCI/CUSAT

Research Area 2: Marine Ecosystem studies, including algal blooms

- **Leader:** Annette Samuelsen, NERSC, Norway
- **Co-leader:** Nandini Menon, NERCI.
- Establish a bio-optical research facility.
- Satellite EO data validation and application studies for Indian waters
- Preparation of marine productivity atlases for the Indian seas.
- Changes in marine primary productivity in relation to climate change.
- Assessing and the fluctuations in pelagic fishery potential.
- Implement a suitable marine ecosystem model for the Indian Ocean.



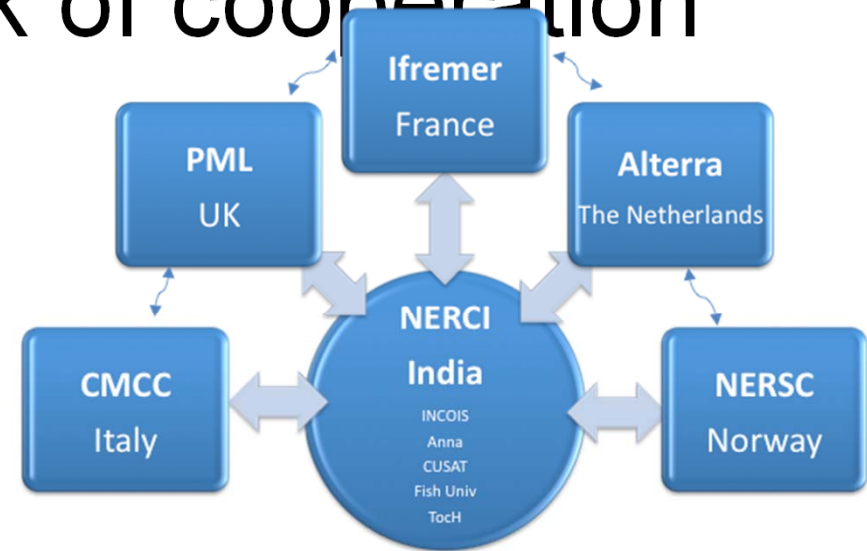
Research area 3: Coastal Zone Management and impact on society

- **Leader:** N.R. Menon, NERCI,
- **Co-leader;** Eddy Moors, Alterra, The Netherlands
- Expand the NERCI for processing, and analysis of ocean and satellite Earth Observation data.
- Study the impact of the monsoon and climate variability on coastal livelihood.
- Conduct cost benefit analysis to reveal the variations in fishery resources and its impact on selected rural populations.
- Evaluation of the economic status of fisher folk during lean and abundant seasons.



Strengthen the partnership and building network of cooperation

- To consolidate and strengthen the initial network among the INDO-MARECLIM project partners and expand this to include additional European partner institutions and stakeholders.
- To strengthen the NERCI research infrastructure to make it attractive for European users and future partners.
- *New office premises*



Organizing and hosting summer schools for PhD students and Post docs

- Plan, organize and host one thematic summer/winter school gathering European and Indian PhD (and Master) students.
- 35 Indian and European student participants and Indo-European lecturers.



Nansen International Winter School
*Indian Ocean:
Challenges in Meteorology and Oceanography,
Cherai, Kerala, February 8-12, 2010*

Opening the INDO-MARECLIM institutional arrangements to additional European partners

- To open up the NERCI research facilities and network of scientific cooperation of the INDO-MARECLIM consortium to scientific institutions and stakeholders in EU member states and associated countries to increase the scientific cooperation between India and Europe.

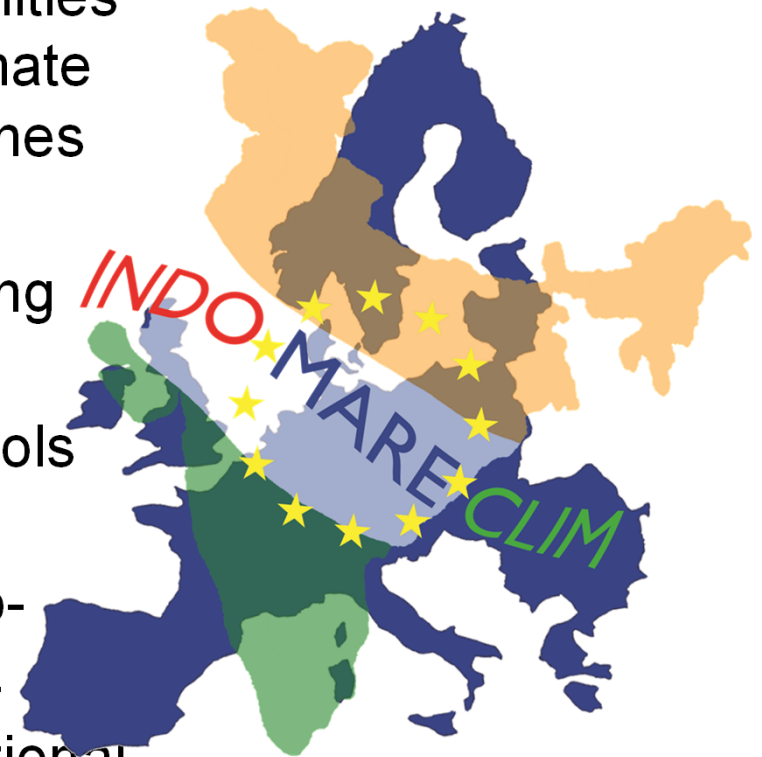


Nansen International Winter School 2010

EU INCO-LAB

Indo-MARECLIM Outcome

- Develop Indo-European research facilities for studies on marine ecosystem, climate change and variability and coastal zones in India.
- Strengthen the partnership and building network of cooperation.
- Organizing and hosting summer schools for PhD students and Post-docs.
- Development of joint competitive Indo-European research project proposals.
- Expand the INDO-MARECLIM institutional arrangements to additional European partners.



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