

# INTEGRATED CLIMATE DATA CENTER (ICDC)

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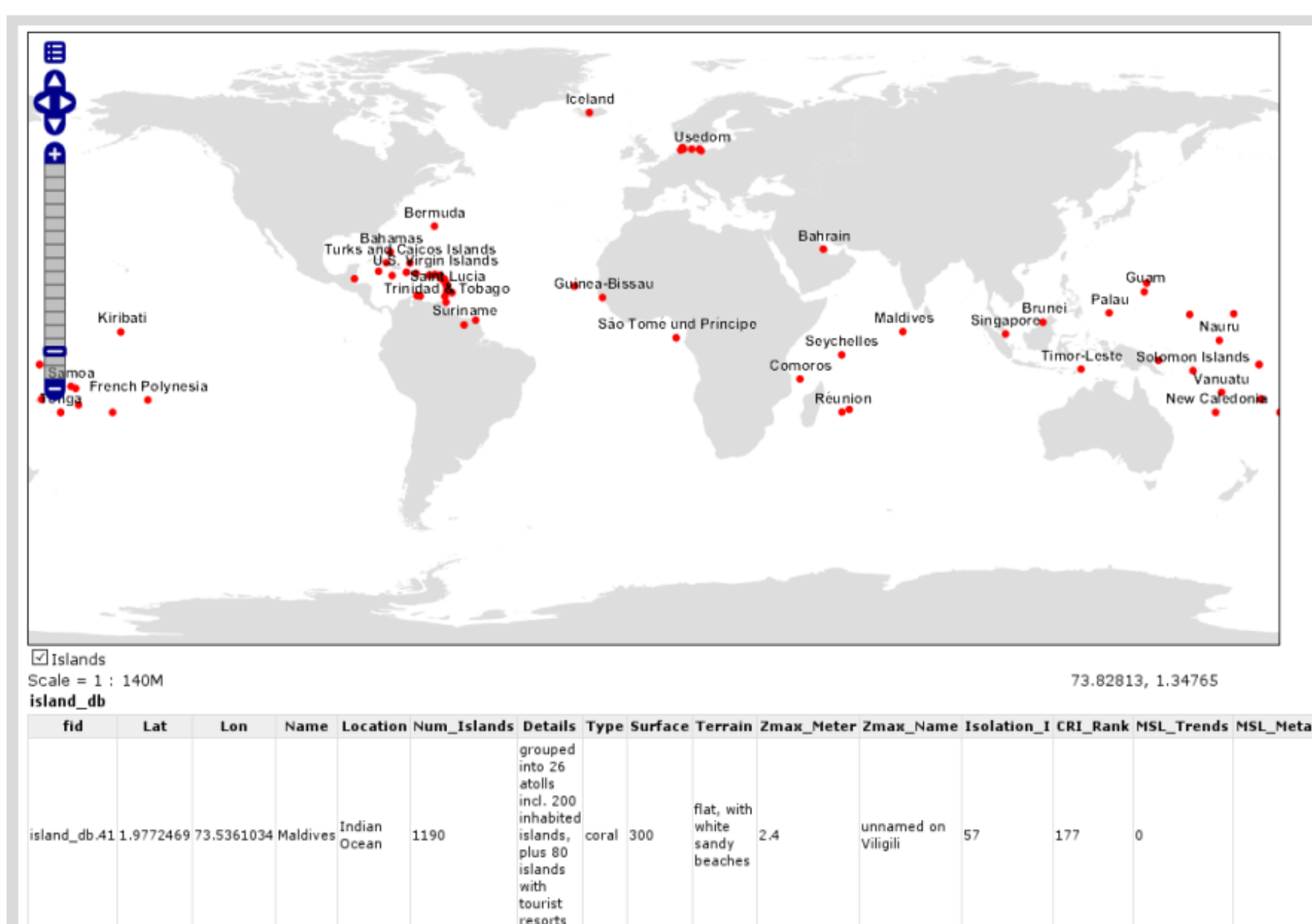
## Our Vision

- Provide easy-to-access easy-to-use climate relevant Earth observation and socio-economic data sets
- Provide scientific user support and consultation about data set usage
- Assess and improve quality of Earth observation data sets
- Ease synergistic usage of data sets from natural sciences and data sets from socio-economic sciences
- Publish CliSAP data products
- Ensure long-term data storage via the DKRZ

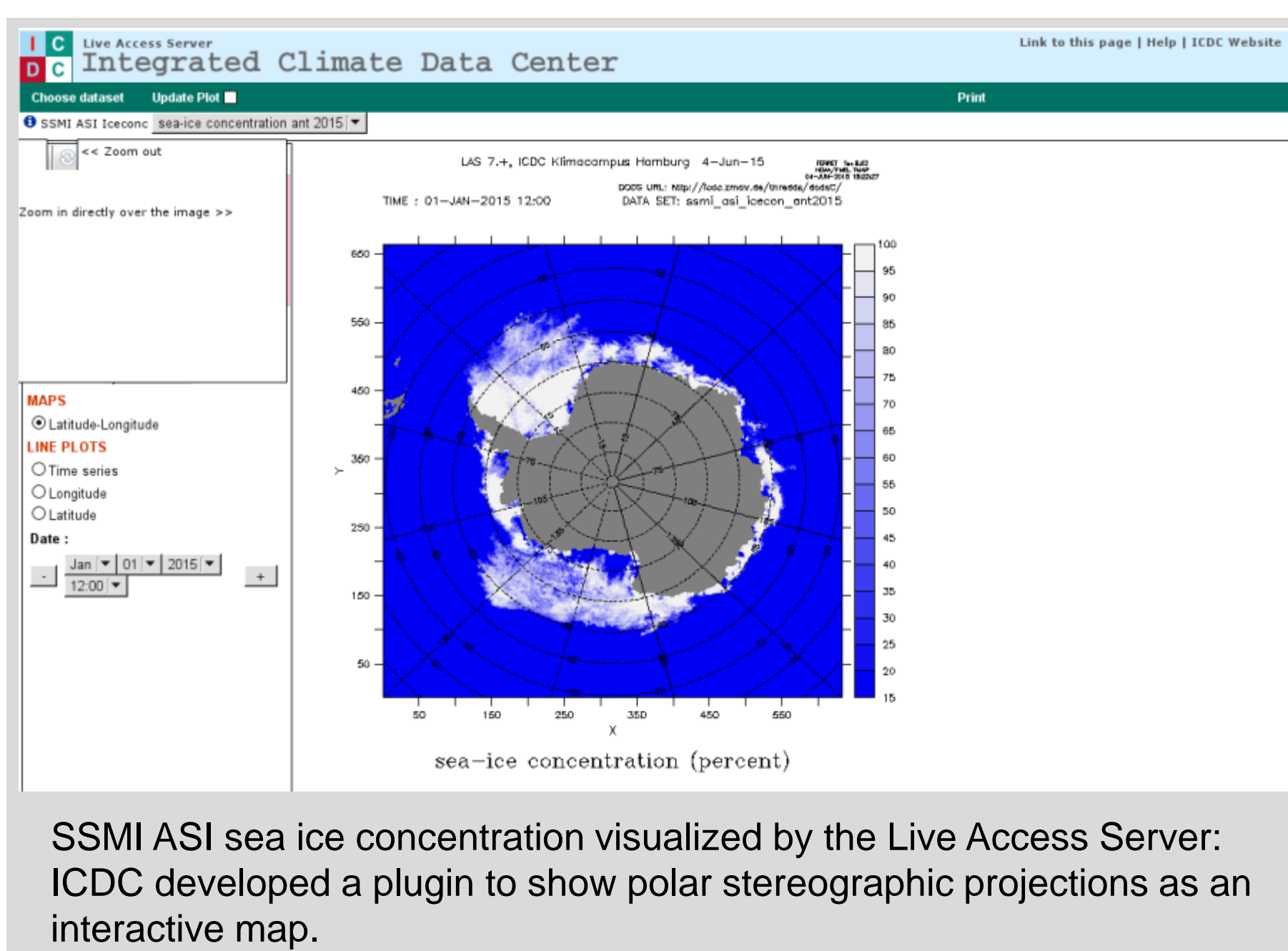
## Integrating Data

ICDC integrates different kinds of data from natural and socio-economic sciences. Related activities are:

- Provide free data access within CliSAP
- Publish the data on the ICDC website
- Generalize the data to standard formats
- Provide different visualization tools and enhancing them on demand of CliSAP users
  - Geoserver
  - Live Access Server (LAS)
- Advise users on the quality of the data sets



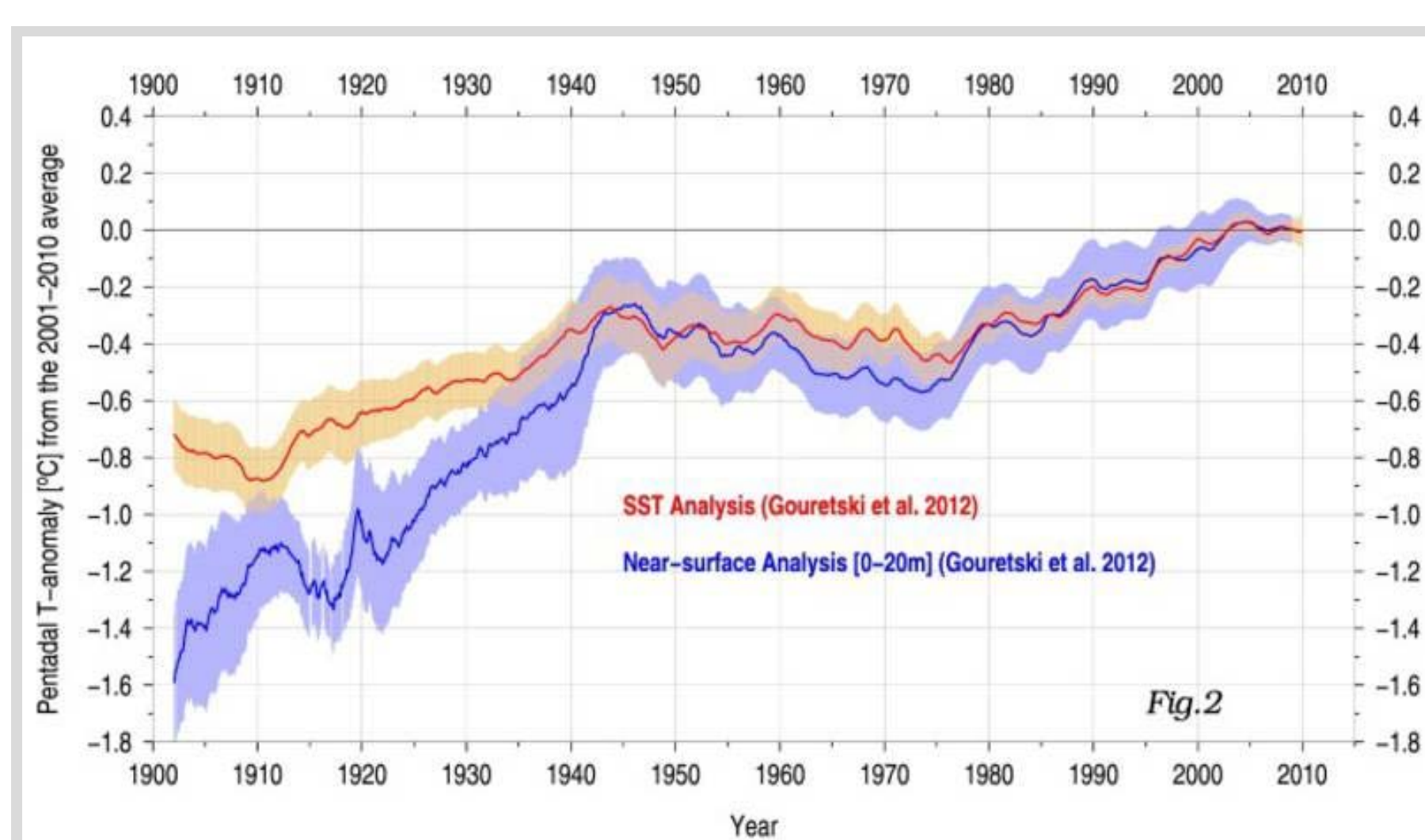
The Integrated Island Data Base (IIDAB) visualized by the Geoserver: An interactive map with associated socio-economic and physical information on mouse click.



## Assessing and Improving Data Quality and Usage

ICDC assesses and improves the quality of data sets relevant for climate studies within CliSAP. Related activities with respect to hydrographic data are:

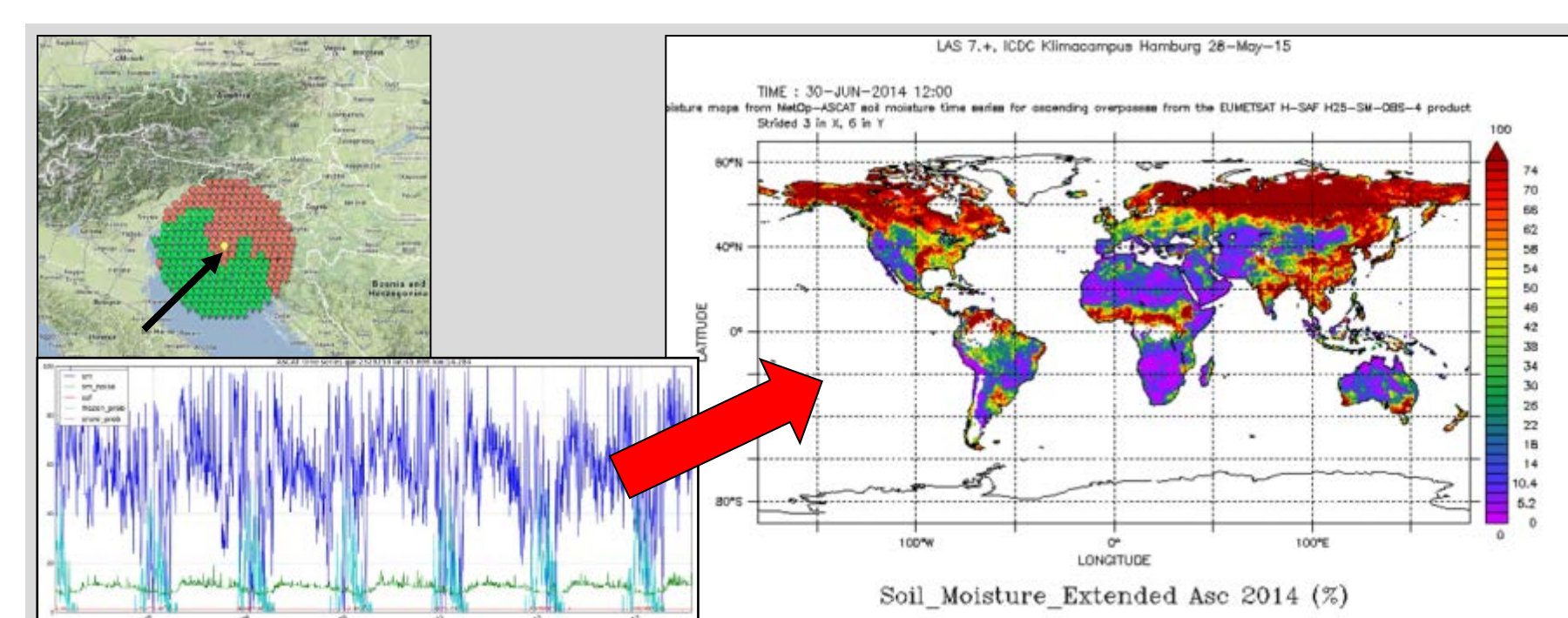
- Develop bias correction schemes for bathy-thermographic data
- Develop an automated quality control procedure for hydrographic data
- Estimate uncertainties for the global ocean heat content time series
- Provide quality-controlled historical hydrographic data for comparison with climate model simulations at MPI-M



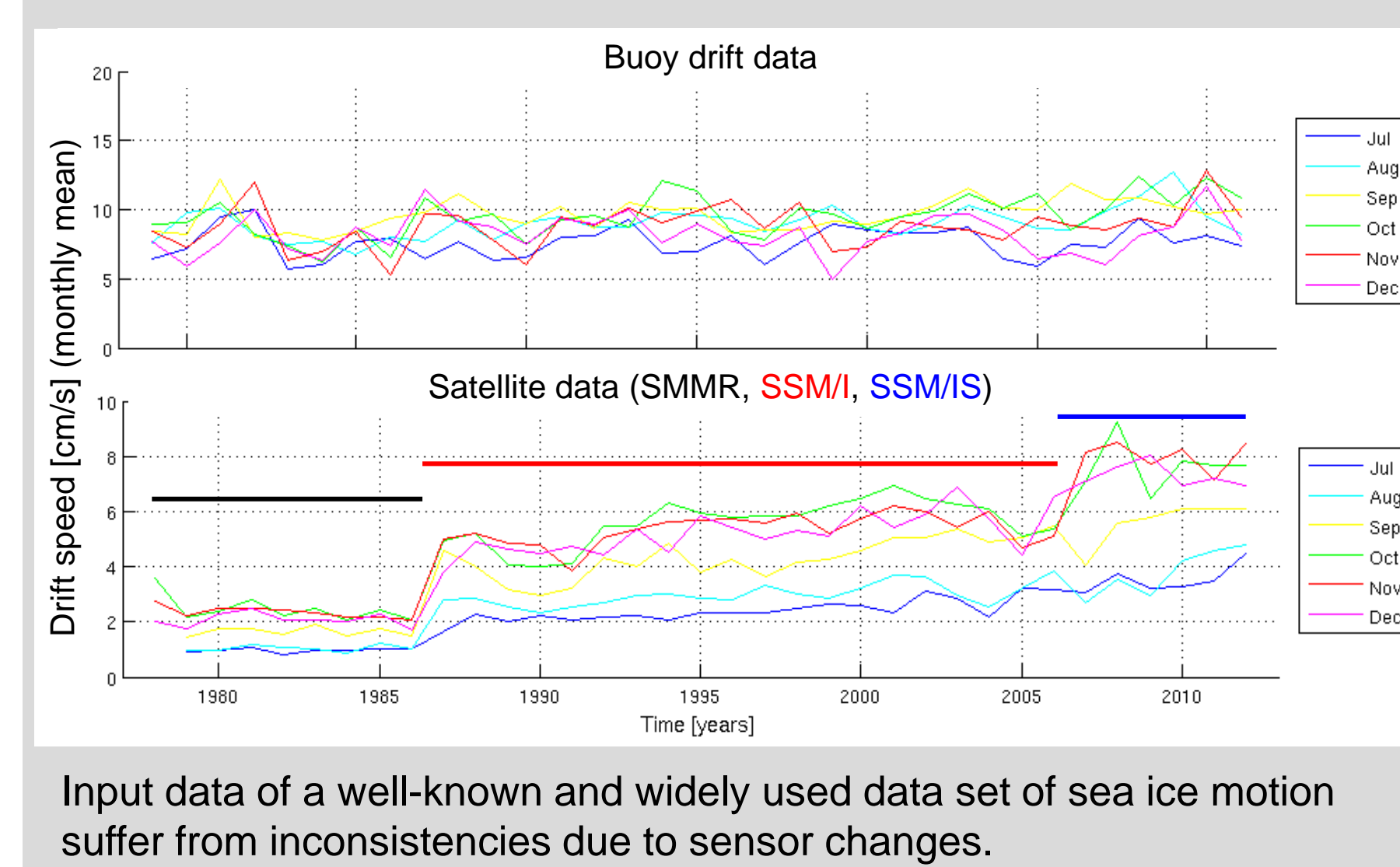
Comparison of two essentially independent global temperature time-series: based on the hydrographic profile data (blue) and based on the sea-surface temperature measurements (red).

ICDC improves usability of Earth observation data for climate research at CliSAP. Related activities are:

- Convert soil moisture data time series into global maps of soil moisture distribution
- Translate encrypted uncertainty information
- Identify & report about data set inconsistencies



Before: External software required to display EUMETSAT © H-SAF soil moisture time series at one spot. Now: Global daily soil moisture maps.



Input data of a well-known and widely used data set of sea ice motion suffer from inconsistencies due to sensor changes.

## Publishing CliSAP Data

ICDC publishes data sets produced within CliSAP. Related activities are:

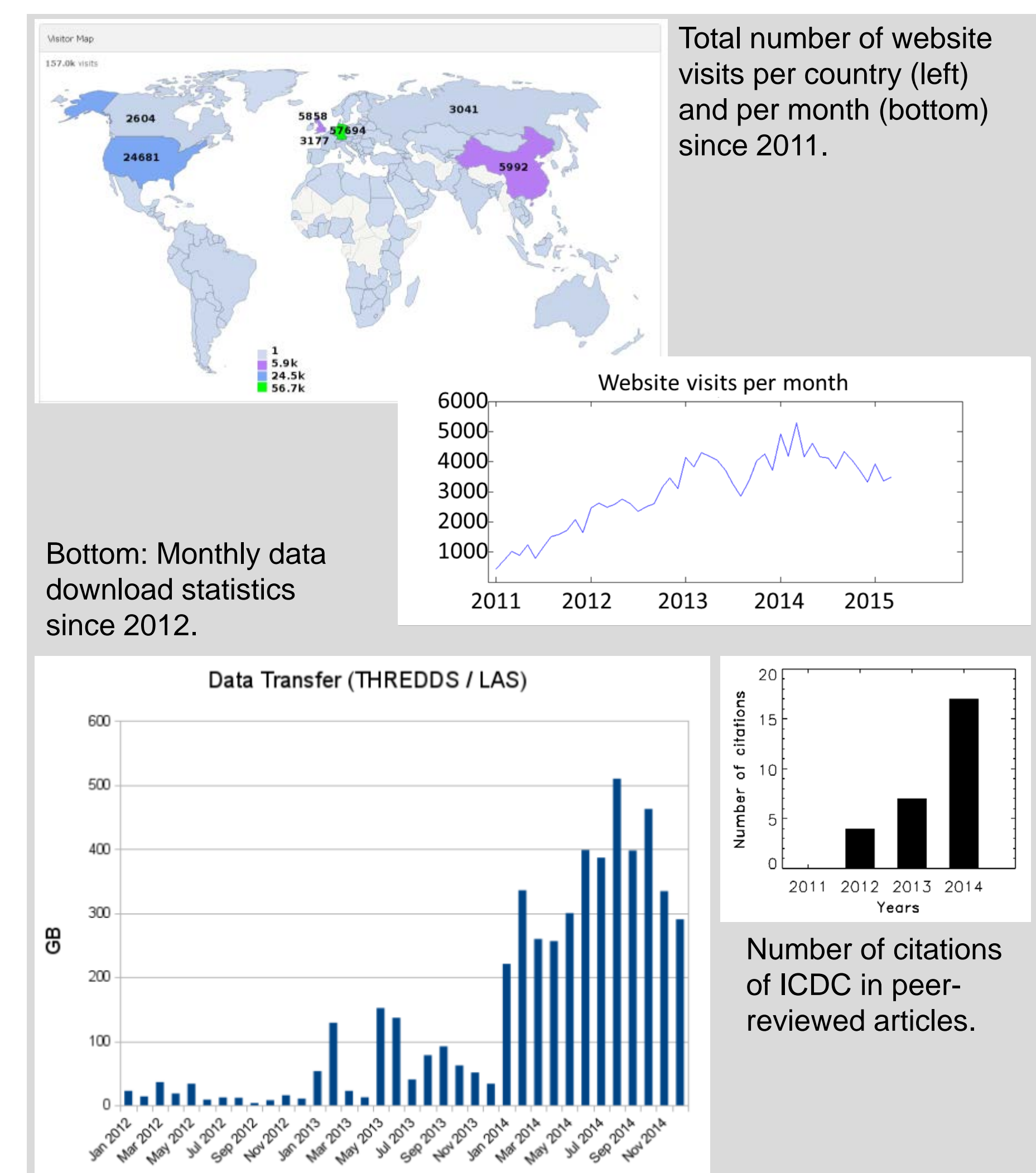
- Set up the web page informing about the data set
- Set up the access to the data set
- Set up the visualization of the the data set
- Consult and assist CliSAP members in the publication process, e.g. wrt data format

Atmosphere	KLIWAS North Sea Climatology (meteorological part) Hamburg Boundary Layer Measurement Tower Field Data from Expeditions of Meteorological Institute, Uni-HH
Ice and Snow	Antarctic Polynyas Sea-Ice Concentration (ASI-AMSRE) Sea-Ice Concentration (ASI-SSM/SSMIS) Melt Pond Distribution on Arctic Sea Ice Lead Area Fraction (Arctic) L3B SMOS Brightness Temperature L3C SMOS Sea Ice Thickness
Land	Climatology MODIS Land Surface Temperature EUMETSAT H-SAF ASCAT Soil Moisture Global Maps
Ocean	KLIWAS North Sea Climatology (hydrographic part) AR5 Sea Level Rise Ocean Tides (HMTIDE model) Geostrophic Surface Velocity Anomaly Sea Surface Salinity (SMOS) Mechanical Bathythermograph Ocean Temperature (MBT) Expendable Bathythermograph Ocean Temperature (XBT) CTD Profiles from IFM Cruises World Ocean Hydrographic Profiles GECCO2
Society	Population survey on climate change and energy preferences Media orientations of climate scientists Integrated Island Database (IIDAB)

CliSAP data products published via ICDC.

## Usage Statistics

- ICDC is regularly consulted by CliSAP members in various matters related to data and data quality.
- Website visit statistics prove that the service provided by ICDC is used worldwide with a strong focus on Germany.
- An increasing amount of peer-reviewed literature across disciplines cites the ICDC.



Centrum für Erdsystemforschung und Nachhaltigkeit (CEN)

www.icdc.zmaw.de  
www.clisap.de  
www.cen.uni-hamburg.de