WORLD METEOROLOGICAL ORGANIZATION

WEATHER CLIMATE WATER

Commission for Climatology

Sectoral Impacts of Climate Extremes: The Expert Team on Sector-specific Climate Indices (ET-SCI)

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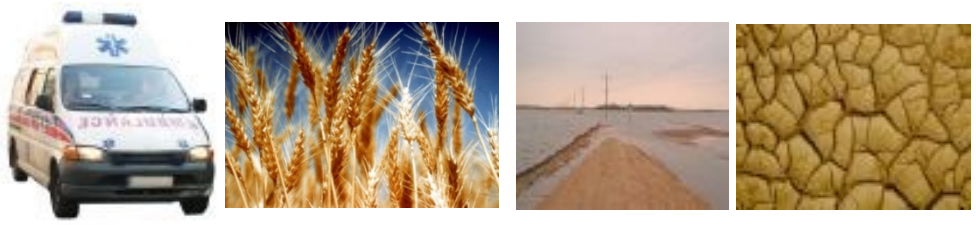
Introduction:

The World Meteorological Organization (WMO) and partnering agencies are together implementing the Global Framework for Climate Services (GFCS), with the intent to "enable better management of the risks of climate variability and change and adaptation to climate change, through the development and incorporation of science-based climate information and prediction into planning, policy and practice on the global, regional and national scale". The WMO Commission for Climatology (CCl) established an Expert Team on Sector-specific Climate Indices (ET-SCI), to contribute to this goal.



The ET-SCI has developed a number of climate indices for use in sector applications, following on from dialogue and in cooperation with experts from health, agriculture and water sectors. The *ClimPACT* software was developed to calculate these indices (based on RClimDex). The current version of the software focuses primarily on heat waves, droughts and extreme rainfall but will be expanded to cover other relevant indices. The software is intended to be used in tandem with sector-relevant data.

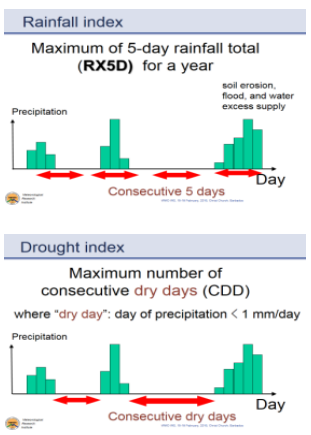


Fig 1: Examples of indices

Aims:

1. **Develop *ClimPACT2*** to generate sector-specific climate indices
2. **Promote** use of globally consistent, sector-specific climate indices of particular interest to socio-economic sectors
3. **Develop training materials** to raise capacity and promote uniform approaches around the world in applying these techniques
4. **Coordinate and lead regional workshops**
5. **Extend ClimPACT2** set to include indices derived from other climate variables that are relevant for sector impacts.

Objectives:

ET-SCI will focus on identifying "impacts-driven" indices relevant to health, agriculture and water

Example on the importance of indices:

From an agriculture and food security perspective, understanding trends and variations in frost days (see Fig. 2) is important for addressing issues related to plant maturation, plant health productivity, freeze injury etc.

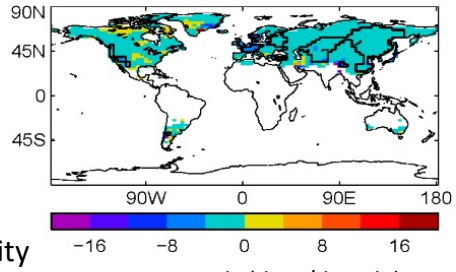


Fig 2: Trends (days/decade) in annual frost days , 1951 to 2003. Black lines enclose regions where trends are significant at 5% level

Deliverables:

- Collection and analysis of existing and new "sector-specific" climate indices
- Develop tools, software and training materials to produce sector-specific climate indices (see Fig 3)
- Run training workshops on development of indices

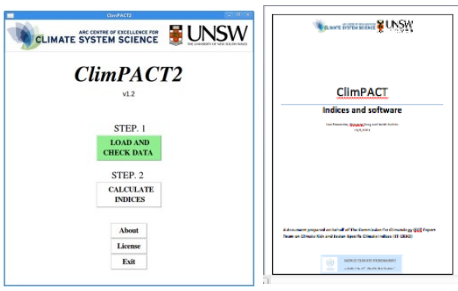


Fig 3: (left) Graphical User Interface of *ClimPACT2* and (right) its manual

Regional Workshops on enhancing Climate Indices for Sector-specific Applications

Workshop on Enhancing Climate Indices for Sector-Specific Applications
Guayaquil, Ecuador, 10-14 June 2013

Workshop on Enhancing Climate Indices for Sector-Specific Applications in Pacific Island Region
Nadi, Fiji 7-11 December 2015

Workshop on Enhancing Climate Indices for Sector-Specific Applications in Caribbean Region
Barbados 15-19 February 2016

WMO Workshop on Enhancing Climate Indices for Sector-specific Applications in the South Asia Region
Pune, India, 3-7 October 2016

Objectives:

- bring participants together from countries in a target region from meteorological, academic and sectoral communities (agriculture, health, water);
- review how sectors use climate indices and gauge requirements for improved application of climate information in decision-making;
- introduce *ClimPACT* and create sector-specific indices for the region, interpreting results and exploring sector-specific applications of *ClimPACT*;
- assess software, processes and outcomes;
- use sector expertise to enhance indices and software tools;
- enhance interdisciplinary networking;
- test, refine and enhance *ClimPACT* for use in the WMO global campus and make recommendations for future activities.