

Report on the WMO CCI/CLIVAR/JCOMM Expert Team on Climate Change Detection and Indices (ETCCDI) workshop on exploring changes in South East Asia temperature and precipitation extreme indices Ha Noi, Viet Nam, 3rd-7th December 2007

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This workshop was the 9th in a series of ETCCDI-sponsored workshops; previous workshops being held in Jamaica (2001), Morocco (2001), South Africa (2004), Brazil (2004), Turkey (2004), Guatemala (2004), India (2005) and the Democratic Republic of Congo (2007). In this case, as with the previous workshop that had been held in Democratic Republic of Congo, we “piggy-backed” off a 3-week CLIMSOFT training workshop sponsored by the UK Met Office and run by Joyce Banda (Zimbabwe), Aziz Barry (Guineé) and Albert Mhanda (Zimbabwe). The ETCCDI workshops seek to bring participants together from several countries within a data sparse region to fill in data gaps and to provide some capacity building capabilities. This is done by following a workshop “recipe” first devised by the Asia Pacific Network (APN). The participants are asked to bring a selection of the best meteorological records in their country and by supplying them with freely available software they have the opportunity to quality control their data and analyse extreme indices.



For this workshop we had 17 participants from 11 countries across the southeast Asian region (see Table 1). Participants brought at least one station each with daily data from their country but generally they brought many more (in the case of Thailand the participant had brought about 50 stations).

The authors had the responsibility of ensuring that this workshop was as successful as previous ones. We had the added bonus that Albert Mhanda and Aziz Barry stayed on for this part of the workshop to help out. The workshops usually begin with a series of introductory talks from the “experts”, so on the first day Blair Trewin talked about the benefits of a regional approach to climate change and Lisa Alexander presented a history of the ETCCDI workshops and some relevant results for climate change in the region following an overview of the IPCC AR4. WMO’s representative at the workshop Omar

Baddour gave us a talk on climate data and information and development challenges including key climate issues, WMO’s role and programmes on climate. As with most workshops not everything ran smoothly on the first day. There had been some miscommunication prior to the workshop which meant that the participants did not have a workshop agenda so they were unaware that they were expected to present a country report on the first day. However we were very impressed that despite this a number of the participants gave excellent impromptu presentations.

Country	Name of participant
Bhutan	Mr Karma Tse-ring
Cambodia	Ms Luch Sorany
Fiji	Ms Varanisese Vuniyayawa
Laos	Mr Nikhom Keosavang
Maldives	Ms Aishath Shimana
Myanmar	Mr Maung Maung Htay
Nepal	Mr Jagadishwor Karmacharya
Sri Lanka	Mr Dahanayake Ananda Jayasinghearachchi
Thailand	Ms Jomkhwan Sakkamart
Timor Leste	Mr Eugenio Soares
Viet Nam	Mr Le Trung Hung
Viet Nam	Ms Le Thi Thuong
Viet Nam	Ms Chu Thi Hue
Viet Nam	Ms Nguyen Thi Thuy Dung
Viet Nam	Mr Pham Viet Hung
Viet Nam	Mr Hoang Duc Cuong
Viet Nam	Mr Nguyen Manh Cuong

Table 1. Countries and participants attending the workshop.



On the second day it was time to start the hands-on part of the workshop. Participants were introduced to general theory on quality control and the specifics of how qc worked in the workshop software, *RClimDex*.

On the third day participants were introduced to the importance of homogeneity in data analysis. After an introductory talk, they started the process of checking their data for homogeneity. Blair Trewin also made a separate presentation on this day on work to develop improved tropical cyclone data sets, a topic of interest to many countries in the region.

On the fourth day the indices to be used in the data analysis were discussed. After that introduction, the participants were able to generate the indices for their stations, and calculate trends if their time series were long enough.

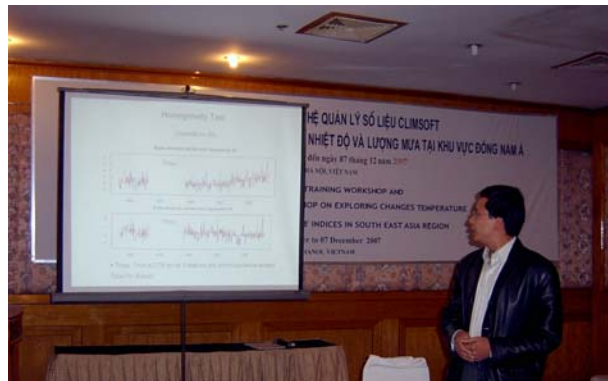


On the afternoon of the fourth day Nguyen Dang Que, deputy director of the Hydrometeorological Data Centre, invited us to visit their archive. We were very impressed by the care that the Vietnamese have taken in looking after their meteorological records. Most of the records are still in paper form, as is common in the region, but they are in the process of digitising them.

The participant from The Democratic Republic of Timor Leste had to leave a day early so he was presented with his certificate on day four. His participation in this workshop can not be underestimated as this is the first time that this country has been represented independently at a WMO workshop.



On the last day participants presented their results and John Caesar gathered all the trends together and showed what the results were like across the region (see Fig).



For the workshops to be a continued success, it is important that a peer-reviewed publication is produced with the results from the workshop. In addition the indices data need to be shared with the international research community in order to continue to advance our understanding of variations and trends in climate extremes. Post processing is invariably necessary since one week is not usually enough to perform a full quality control on all ones data. It has been our experience of previous workshops that participants are willing to allow one person access to the raw daily data for the purposes of writing the paper on the understanding that this is the only purpose for which data will be used. The countries involved with this workshop were especially helpful in making their data available. It was agreed at the workshop that John Caesar would lead the peer-reviewed scientific journal article in which all the participants would be involved.



In addition to their specific goal of collating information relevant for assessing climate change in a region, this workshop, as with other previous workshops, has been

very useful in providing training to participants on other aspects of climate data analysis, such as data homogeneity and the importance of metadata. The capacity of NMHSs in the region varies greatly, as does the availability of data. Some participating countries had records extending for a century or more, while others only had data for the last 5 or 10 years (although archives from former colonial countries may provide scope to extend some of those records). Even those countries whose data sets were too short to contribute to an analysis of trends were able to make useful contributions, especially in assessing the effects of the 1997-98 El Niño event, which had a major impact on temperatures and rainfall in many parts of the region.

The authors made a detailed list of the areas in which we saw that improvements could be made to the RCLimDex and RHTest software and sent a report to the developers.

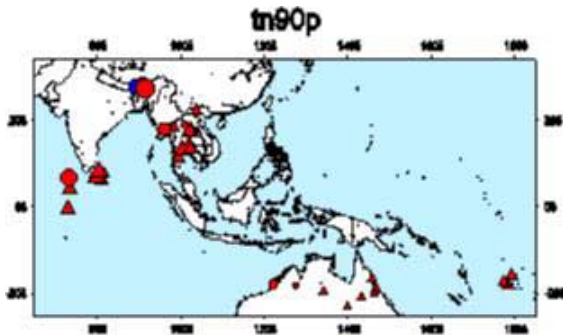


Fig: An example of some of the trends obtained from the workshop for warm nights. Note that these are the results prior to the post processing that will be performed for peer-reviewed scientific publication.

More information on the work of the Expert Team can be found at <http://www.clivar.org/organization/etccdi/etccdi.php>.

Detailed information on the workshop software and indices from previous workshops are available from <http://cccma.seos.uvic.ca/ETCCDI/>. It is the aim that the indices from this workshop will also appear on the website when quality control is fully completed.