



TARGETED TRAINING ACTIVITIES (TTAS)

In 2004, the ICTP Physics of Weather and Climate Section initiated a new programme of educational activities called "Targeted Training Activities" (TTAs).

TTA's distinguishing feature is its team-oriented nature, with the aim of putting together groups of scientists to collaborate on a specific goal in a Developing-Country institution. Such goals can be of different kinds:

- **Development** of an *educational team* on climate sciences in a university environment;
- **Expertise building** on the use of *numerical weather forecasting, seasonal prediction products* or *climate-scenario simulations* made available to the international community by institutions such as ECMWF, NCEP, IRI, IPCC;
- **Implementation** of a *project* on the application of *short- and long-term climate predictions to the management of hydrological or agricultural resources*.

To achieve this goal each TTA will be "targeted" to a limited number of institutions (from 2 to 5). From each institute, a group of scientists (lead by a co-ordinator) will be chosen. A limited number of "observing students" from Developing Countries may also be allowed to attend. The duration of the TTAs is expected to be between *two* and *four weeks*, with a mixture of formal lectures, laboratory sessions and project work.

Faculty: Lecturers from a number of institutions, with at least one external Director. Joint organization with one specific institution from a Developed Country (acting as a co-sponsor) is welcomed.

Kick-off edition in 2004: 'Course on Climate Dynamics for Climate Research Centers and University Lecturers', August 9 - 27.

The ***Center for Ocean-Land-Atmosphere Studies*** (COLA, Maryland, USA) is the partner organization for all the TTAs.

2006 - 2010 Editions

Targeted Training Activity (TTA) on
"Seasonal Predictability in Tropical Regions: Research and Applications"
August 7 - 18, 2006
TTA Directors: J. Shukla, I-S Kang; Local Organizer: J. Pal & J.-H. Yoo

Targeted Training Activity (TTA) on
"Seasonal Predictability of South Asian Monsoon"
August 6 - 10, 2007
TTA Directors: J. Shukla, I-S Kang; Local Organizer: J.-H. Yoo

Targeted Training Activity (TTA) on
"Seasonal Predictability in Tropical Regions"
followed by Workshop on
"Multi-scale Predictions of the Asian Summer Monsoon"
August 4 - 15, 2008
TTA Directors: J. Shukla, I-S Kang; Local Organizer: J.-H. Yoo
Workshop Director: F. Molteni; Local Organizer: A. Tompkins

Targeted Training Activity (TTA) on
"Predictability of Weather & Climate: Theory & Applications to Intra-Seasonal Variability"
July 27 - August 7, 2009
TTA Directors: J. Shukla, I-S Kang; Local Organizer: J.-H. Yoo

including the
South Asian Climate Outlook Forum (DG Meeting)
August 6, 2009
Co-sponsor and partner organization:
World Meteorological Organization (WMO Geneva)
Organizers: J. Shukla (ICTP); K. Kumar (WMO)

Targeted Training Activity (TTA) on
"Statistical Methods in Seasonal Prediction"
August 2 - 13, 2010
TTA Directors: J. Shukla, T. DelSole; Local Organizer: J.-H. Yoo

2012 Edition

Targeted Training Activity (TTA) on
"El Nino Southern Oscillation Monsoon in the Current and Future Climate"
July 30 - August 10, 2012
TTA/Mtg. Directors: J. Shukla, B.N. Goswami, E. Sarachik, J.M. Wallace ; Local Organizer: F. Kucharski

including the
High-level Meeting on "The Looming Environmental Crisis and Global Sustainability"

Co-sponsors and partner organization: **Indian Institute for Tropical Meteorology (IITM), Ministry of Earth Sciences - Pune, India;** **International Union of Geodesy and Geophysics (IUGG) - Denmark;**
Center for Ocean-Land-Atmosphere Interactions (COLA) - USA

**2013 Edition (upcoming)
Pune, India**

**Targeted Training Activity (TTA) on
"*Intraseasonal Monsoon Predictability and Prediction*"
January 14 - 25, 2013**

TTA Directors/Organizers: B.N. Goswami, J. Shukla, S. Anguluri ; ICTP Organizer: F. Kucharski

Co-sponsors and partner organizations: [the Abdus Salam International Centre for Theoretical Physics \(ICTP\), Italy](#); [Indian Institute for Tropical Meteorology \(IITM\), Ministry of Earth Sciences - Pune, India](#); [Center for Ocean-Land-Atmosphere Interactions \(COLA\) - USA](#)