

## Late Quaternary Environmental Change – “Emerging Issues”

PONDICHERY, INDIA, FEBRUARY 10-15, 2003.



The French Institute of Pondicherry organized an International PAGES Workshop and a Training programme on “Late Quaternary Environmental Change – Emerging Issues”. About 70 participants from 7 countries (India, Bangladesh, Sri Lanka and Thailand, Germany, France and the USA) participated. An optimal mix of both young and established Global Change Scientists with diverse specializations but all with an interest in the South Asian region made this meeting a scientifically useful event.

The programme comprised sessions in the format of plenary lectures, oral and poster presentations and a special symposium followed by training including field and laboratory protocols in quantitative palynology, GIS, data management and relevant software for construction of pollen diagrams and statistical analysis of pollen, vegetation and climatic data. A one-day symposium on the theme “Model specific data sets and data specific models – The South Asian context” was also organized.

Other sessions reviewed the paleoclimatic archives including terrestrial archives, ocean cores from the Arabian sea and quantitative multiproxy approaches. Applications of emerging new techniques and methodological approaches such as luminescence dating, magnetostratigraphy, environmental magnetism, Electron Spin Resonance, clay mineralogy, dendrochronology archaeoclimatology, remote sensing and GIS to palaeoenvironmental studies in South Asia were also discussed.

A highlight of the meeting were the first results from a new multidisciplinary research programme (INDIAN SUBcontinent BIOMes, INDSUBIO) involving field studies in targeted regions, laboratory analysis and remote sensing input. New initiatives from the remote sensing community were also presented and results from a powerful and cover change detection



Fig. 1: Public Events - Painting competition on Climate Change for school children.

computer algorithm that permits identification of undisturbed sites using a grid hierarchical scheme was presented. Other multidisciplinary projects (HITE-TERRAPIN, Tracking the Environmental Records in Reservoirs and Agro-ecosystems of Peninsular India) transgressing barriers between natural and human sciences, with combined inputs from archaeologists, historians and geographers in reconstructing past environmental changes, were additional highlights. In this context for example, luminescence dating and micro morphology of pedogenic carbonate cutans (secondary carbonate coatings) emerged as additional tools for reconstructing landscape history in arid peninsular Indian archaeological sites. Further, the widespread occurrences of artificial and interlinked rain harvesting systems (irrigation tanks/ lakes) in Peninsular India, providing a high-resolution sedimentary record of erosion and environmental change for the past few centuries, were discussed. Initial results are highly promising.

A three-day training programme comprised a field excursion into a dry deciduous forest of the Eastern Ghats (a disjoint chain of hills in south-eastern peninsular India) to

introduce field-sampling protocols for quantitative pollen and vegetation studies.

This meeting was planned in tandem with another important national meeting at Anna University Chennai - that organized a workshop on understanding dry land soils and early Quaternary paleoclimate under the aegis of UNESCO sponsored international geological correlation programme (IGCP-413 on drylands) along with a training course on Quaternary soils as palaeoclimate indicators and a common seminar with the french institute on “Radiometric dating methods and Palaeoenvironments during the Quaternary”. This synergy aimed at optimising resources and increasing the outreach of the PAGES science to a wide cross section of Earth system scientists researchers, particularly young scientists who could avail the benefits of both training programmes.

The response and feedback from the participants during and after the programme has motivated the organizers to plan regular summer or winter training schools. Although specialized, the meeting did capture the attention of the local media based on a curtain raiser including several public events, such as a painting competition on the theme for school children, a photographic and poster exhibition and popular multimedia presentations to introduce the overall science, economics and politics of climate change, formed a part of this programme. The response was tremendous.

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