

intensity of their operation thus leading to spread of desert margins at the expense of more productive lands and triggering rapid landuse changes and related inevitable land degradation.

There was a large participation from the developing world. Two geoscientists from India, the author of this note and Dr. Sheila Mishra from Deccan College, Pune, attended the Uppington Conference and presented scientific papers on the Thar desert and on the history of Narmada river respectively. They also participated in the deliberations during the post-conference field excursion to different parts of the Kalahari Desert environments in South Africa.

The formal component of the Conference comprised three days of oral presentations, organised into twelve Technical Sessions, with alternating sessions on long term and contemporary change providing papers of interest to all participants on each day. A total of 59 papers were presented, each reporting original research or in the case of four keynote papers synthesising current understanding of the topical themes.

The Technical Sessions dealt with the following themes on dryland environment: 1. Environmental change in southern African drylands; 2. Drylands in the Quaternary; 3. Dryland degradation; 4. Degradation: land user and scientific views; 5. Degradation and Desertification in South Africa; 6. Aeolian Systems; 7. Kalahari sediments and ecosystems; 8. Dryland research methods and applications; 9. Dryland hydrological systems; 10. Dryland degradation in Asia and Africa; 11. Dryland degradation in southern Africa; 12. Drylands in the Quaternary.

Thirty delegates participated in a five-day post-conference field excursion. The field trip examined peri-Kalahari and Kalahari sites of particular importance in yielding information on the dynamics and sensitivities of late Quaternary environmental change in the dryland component of the southern African summer rainfall zone. A number of areas where research into contemporary dryland

degradation and restoration is active were also visited.

Recent investigations have contributed to a clarification of the major trends in the development of the Kalahari since the Cretaceous. Recognition has been made of the complexities of controlling factors and a movement has occurred away from unhelpful over-generalisations towards an increased awareness of the need to identify local and regional factors affecting sediment stratigraphy, geomorphic processes and Kalahari development. Although the details and complexities of events in the long-term evolution of the Kalahari remain somewhat skeletal and require refinement, advances to date have provided an appropriate frame work in which the better documented Late Pleistocene-to-recent environmental changes can be evaluated and interpreted.

Research in southern Africa continues on three fronts and includes researchers from the countries concerned and from Germany and the UK. In the Kalahari, investigations on the timing and nature of major late Quaternary environmental changes continue to focus on developing a better understanding of the timing and controls on major late Quaternary events. In this respect, new work of dating deep sediment exposures at Mamatwan mine are proving most promising since they appear to identify two major phases when aeolian activity was prevalent, with a hiatus from c120-60 ka. Elsewhere, there are promising correlations in the optically stimulated luminescence dated records of dune construction in the northern Cape, South Africa and southern Namibia, respectively developed at UK and German laboratories. In the semi-arid Karoo region of South Africa, researchers from three UK institutions are collaborating with University of Cape Town investigators, examining the timing of valley fill and localised dune development, from the Late Quaternary to present.

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IAEA/RCA WORKSHOP ON APPLICATION OF RADIOISOTOPES FOR SEDIMENT TRANSPORT STUDIES

The workshop on 'Application of Radioisotopes for Sediment Transport Studies' (RAS-8-080) was organized by the International Atomic Energy Agency (IAEA) under the Regional Cooperative Agreement (RCA) through Bhabha Atomic Research Centre (BARC) Mumbai from 20-25th May 2002. The objective of the workshop was to

provide theoretical and practical knowledge on the application of radioisotopes to study suspended and bed load transport to ascertain suitability of dumping sites for dredged materials as well as for fundamental studies in sediment transport. Dr. U. Saravana Kumar of the Isotope Hydrology Section (IHS) of BARC was the Course Director.

Twenty scientists/engineers participated in the workshop including five from India. The other participants were from Bangladesh, China, Indonesia, Republic of Korea, Malaysia, Myanmar, Philippines, Thailand and Vietnam. Apart from the experts in this field from BARC, Dr. Cath Hughes (Australian Nuclear Science and Technology Organisation, ANSTO, Sydney, Australia) and Dr. Mathew Chadwick (Water Research Laboratory, University of New South Wales, Sydney, Australia) were invited as IAEA expert faculty. The workshop was held at Hotel Parlae International, Villa Parle (E), Mumbai.

The workshop started with an impressive opening ceremony in which Dr. L.K. Ghosh, Additional Director, Central Water and Power Research Station (CWPRS), Pune participated. The technical session started soon after the opening ceremony, in which participants introduced themselves, followed by a lecture on 'Introduction to Governing Processes of Sediment Transport in Rivers and Oceans' by Dr. L.K. Ghosh. The lectures that followed included topics such as: (1) Introduction to numerical modelling for studying sediment transport; (2) Advances in tracer techniques and choice of tracers; (3) Data collection and navigation for radiotracer studies; (4). Safety aspects during a radiotracer experiment; (5) Analyses of radiotracer data for sediment transport studies etc. Case studies presented include 'Radiotracer applications in sediment transport investigations: ANSTO experiences' followed by the experience of BARC. Details of a radiotracer investigation carried out at Calcutta Port Trust, for selection of suitable dumping site for dredged materials were also presented in detail.

This workshop also included a visit to CWPRS at Pune. At CWPRS, Dr. U.V. Purandare and Dr. U. Ramesh delivered lectures on the activities of CWPRS, the

importance of Physical Modelling and various case studies conducted by CWPRS in major ports of India. The participants were taken to physical modelling sites for ports of Visakhapatnam, New Mangalore, and Kandla. The visit to these physical modeling sites was very impressive.

The workshop also included one-day practical demonstration off Mumbai Coast. This included injection and tracking of radiotracers for sediment transport investigation, demonstration of nucleonic suspended sediment concentration gauge, and methods of data collection and navigation for radiotracer studies etc.

The concluding day of the workshop included presentation of projects/case studies by participants. The undersigned presented the problems and perspectives of river sand mining in Kerala. The IAEA experts and experts from BARC took sincere interest to improve and streamline the concepts and programmes presented by the participants. The Course Director on behalf of IAEA, requested each participant to answer a questionnaire for their evaluation of participant-response and suggestions to improve such workshops. The training programme ended with a closing ceremony attended by Dr.N. Ramamoorthy, Associate Director of Isotope Group, BARC and Chief Executive, Board of Radiation and Isotope Technology (BRIT), and Dr. Gurusharan Singh, Head, Isotope Application Division of BARC. At this ceremony, Course Certificates were distributed to the participants.

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REPORT ON THE INTERNATIONAL CONFERENCE ON "INSTABILITY-PLANNING AND MANAGEMENT"

An international conference on "Instability-Planning and Management" was held at Ventnor, Isle of Wight, United Kingdom from 20-23 May 2002. The conference was organized by Coastal Environment, Isle of Wight Council, Ventnor, United Kingdom. More than two hundred participants covering forty countries attended the conference. The main purpose of this conference was to translate theory and policy into practice in terms of management of ground instability problems and land use planning. The presentations

were made on following seven different technical sessions: (i) Instability-planning and management; (ii) Unstable land-problems and opportunities, legal and planning issues; (iii) Hazard identification and risk assessment; (iv) Handling information relating to unstable ground; (v) Instability, planning and the natural environment; (vi) Coastal and climate change and instability; (vii) Instability management-from policy to practice. On the second day one session was devoted exclusively for poster presentations.