

**NF-POGO Visiting Professorship in India:
Calculation of Regional-Scale Primary Production for Indian Waters and
Application to Ecosystem Dynamics**

Host Institution: National Institute of Oceanography, Kochi (India)
Visiting Professor: Dr. Trevor Platt, FRS, FRSC (Canada)
Period of Training: November 2004 – March 2005
Total Cost: \$152,027

Dr. Trevor Platt provided training to a total of 24 students from India, Vietnam, Thailand and Tanzania at the National Institute of Oceanography, Kochi (India). The training was built around the use of remotely-sensed data on ocean colour as a tool for the analysis of the marine ecosystem. The course also covered the bio-optical basis of ocean colour, the retrieval of pigment biomass, the calculation of primary production and the interactions between physical and biological processes in the ocean. Specialised equipment was procured for NIO as part of the NF-POGO Visiting Professorship Programme and the participants were trained on the use and interpretation of data collected by the equipment. Access to the equipment was absolutely essential to the success of the training programme, and was rated very highly by the participants among the benefits from the training programme. This equipment was seen as critical to the training itself and also to the continuation of work in the subject area by the trainees. The equipment purchased included:

- HPLC machine with accessories for phytoplankton pigment analysis
- Photosynthesis – Irradiance incubator
- A spectrophotometer with integrating sphere
- Plant-growth incubator

Dr. Platt provided lectures on theoretical fundamentals which were complemented by practical demonstrations of analyses of satellite data on ocean colour, and *in situ* field sampling and laboratory analyses of water properties important for the interpretation of remotely-sensed data on ocean colour (phytoplankton absorption, photosynthesis-irradiance parameters, pigment composition using HPLC). Dr. Platt was assisted by a team from Canada, including Shubha Sathyendranath, Peter Payzant, Linda Payzant and Marie-Hélène Forget, and many experts drawn from the region. In addition, participants worked with the Professor on the design and execution of some five small research projects, as well as on the analysis and interpretation of data, on presentation of results at seminars and on preparation of research papers and project proposals. Application of relevant mathematical methods for the analysis of marine ecosystems was encouraged. The goal was for the trainees and professor to work together as a team, and to develop strategies for establishing long-term successful observations and research in biological oceanography of the Indian Ocean region.

A total of 15 text books as well as reprints and software were distributed to the participants and to the NIO-Kochi Library, to enhance their learning. The Director of NIO plans to develop the regional laboratory as a centre for analysis of the marine ecosystem using remote sensing as the basis *i.e.* the subject area covered by the

training. To this end, the investment in equipment and training will prove to be of great value, and should continue to bear fruit in the long term. The Visiting Professor and the Senior Scientists and management of the Institute were unanimous in their praise of the value and importance of the programme.