

Training Workshop on Marine Resources Sampling, Data Collection & Interpretation for the South Asian Seas

Conducted in India
18 to 22 September 2009

Report

Organised by
South Asian Seas Programme
South Asia Co-operative Environment Programme

in collaboration with
Ministry of Earth Sciences, Government of India and
United Nations Environment Programme

Partners - UN Division for Ocean Affairs and Law of the Sea
UNEP - GRID Arendal





REPORT ON THE REGIONAL TRAINING WORKSHOP ON MARINE RESOURCES SAMPLING, DATA COLLECTION AND INTERPRETATION FOR THE SOUTH ASIAN SEAS

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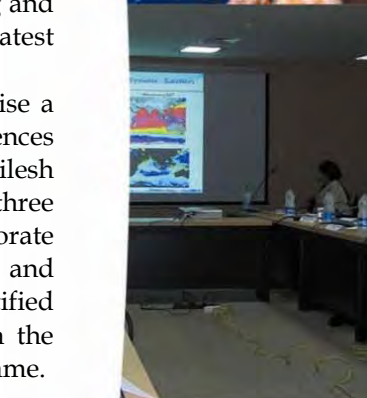
Background

The Plenipotentiaries Meeting of the South Asian Seas Programme formally adopted the Action Plan in March 1995 wherein Capacity Building is one of the four major Priority Subject Matter Area. In view of the above, South Asian Seas Programme (SASP)/SACEP has identified the requirement to involve middle Level Managers working in the field of Policy Making and Research relevant to South Asian Seas should be given an opportunity to understand the latest development at the Regional and International level.

South Asian Seas Programme (SASP) of SACEP, Colombo conceived this idea to organise a Training Workshop for SAS member countries and approached Ministry of Earth Sciences (MoES) Government of India to extend the technical and expertise support. Dr. Shailesh Nayak, Secretary, MoES readily agreed and came forward to provide all support and three Institutions such as Integrated Coastal and Marine Area Management Project Directorate (ICMAM) Chennai, National Centre for Antarctic and Ocean Research (NCAOR) Goa and Indian National Centre for Ocean Information Services (INCOIS) Hyderabad were identified to co-ordinate this activity. The major boost to this Training Workshop came through the timely financial assistance extended by Dr Jacqueline Alder, UNEP Regional Seas Programme.

During the World Ocean Conference in Manado, Indonesia in May 2009 SASP/SACEP approached UNEP GRID Arendal and UNDOALOS to join this unique programme by deputing their experts to deliver lectures. Subsequently during the meeting in UN Head Quarters, Mr Serguei Tarassenko, Director UNDOALOS agreed to depute Ms Alice Hicuburundi to join us in this exercise. Also Dr Morten Sørensen, Head, Marine Programme of UNEP/GRID-Arendal agreed to be part of this programme by extending the expertise of Ms Kristina Thygesen UNEP/GRID The detailed programme was finalised jointly by Government of India and SASP/SACEP during the meeting held at New Delhi in July 2009. SASP geared up to get nominations from member countries. The SAS member countries nominated two delegates from each country.

First Leg 18 September	Chennai, India Integrated Coastal and Marine Area Management - Project Directorate, Chennai Government of India	Inaugural Function Theme : Marine Pollution Near Shore Environment
Second Leg 19 to 21 September	On board Sagar Kanya National Centre for Antarctic and Ocean Research Goa, Government of India	Theme : Ocean - Data collection Policy and Management
Third Leg 22 September	Hyderabad, India Indian National Centre for Ocean Information Services Government of India	Theme : Ocean - Observation Valedictory Function



WORKSHOP PROGRAMME

Theme I Marine Pollution	<ol style="list-style-type: none"> 1. Coastal Ocean Monitoring and Prediction System, A Long-term Programme to monitor health of our seas 2. Oil Spill and Mitigation techniques 	<p>B.R.Subramanian ICMAM Project Directorate Ministry of Earth Sciences Commandant JBS Virk, TM Indian Coast Guard</p>
Theme II Near Shore environment	<ol style="list-style-type: none"> 3. Application of Geographical Information System (GIS) in Coastal and Marine Environment 4. Monitoring of Shoreline Changes Tools and Techniques 	<p>B.R.Subramanian ICMAM Project Directorate Ministry of Earth Sciences India Ramanamurthy Ministry of Earth Sciences India</p>
Theme III Ocean - Data collection	<ol style="list-style-type: none"> 5. Surface Water Sampling 6. Nutrient Analysis Demonstration Theory and Laboratory Analysis 7. Sediment Sampling using Van Veen Grab at 200m water depth 8. CTD cast at 500m water depth 9. Multi Beam Echo Sounder survey 10. Demonstration at 2000m water depth 11. Research Vessel Navigation 12. Communication and Safety Equipment on board the vessel 13. Safety and Boat Drill 14. Engine Room and Propulsion System 15. Dynamic Position System 16. Plankton Net Sampling 	<p>P Madeswaran MM Subramanian On board ORV Sagar Kanya</p>
Theme IV Ocean - Observation INCOIS Ministry of Earth Sciences, Govt. of India	<ol style="list-style-type: none"> 17. Ocean State Forecast 18. Ocean Observations and Modelling for realising Operational Oceanography 19. Ocean Data and Information System 20. Potential Fishing Zone advisories A unique service to the fishermen community for locating potential fishing zones in the seas 21. Early Warning System for Tsunami & Storm Surges in the Indian Ocean 22. Ocean Data Modelling 23. Satellite Ocean Colour 24. Ocean Information Bank 25. Ocean State forecast 	<p>T M Balakrishnan Nair M. Ravichandran</p> <p>Pattabhi Rama Rao M. Nagaraja Kumar</p> <p>Lab visit</p>
Theme V Policy and Management	<ol style="list-style-type: none"> 26. Significance of GPA in South Asia 27. Introduction to an Ecosystem Approach 28. Scientific aspects of Marine Ecosystems 29. International Legal and Policy Framework for Areas-based Management, including for the Ecosystem Approach 30. Geoscience as a Tool for Marine Management: The Application of Biophysical Data to support decision making 31 Status of International Environmental Agreements on the coastal and marine environment By SAS member countries in South Asian Seas region 	<p>Anjan Datta UNEP Alice Hicuburundi UNDOALOS Alice Hicuburundi UNDOALOS Alice Hicuburundi UNDOALOS</p> <p>Kristina Thygesen UNEP/GRID Arendal R Venkatesan</p>

Programme Objective

SASP of SACEP organised this Regional Training Workshop on “Marine Resources Sampling and Data Collection and Interpretation for South Asian Seas” targeting mid-level managers to help them in effectively perform their duties in conservation and management of marine resources.

Workshop

This 5 day regional training workshop on Marine Resources Sampling, Data Collection and Interpretation on board research vessel Sagar Kanya and in laboratories was organised for the mid-level managers working in Government Departments in South Asian Seas member countries (Bangladesh, India, Maldives, Pakistan and Sri Lanka).

Chennai

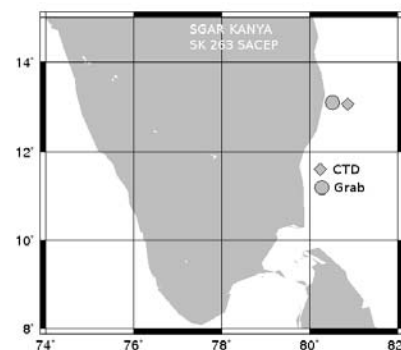
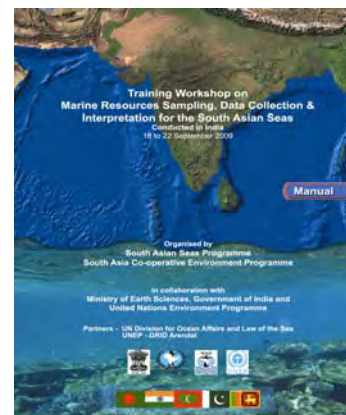
On 18th September, the Training Workshop was inaugurated in Chennai by Dr Anjan Datta of UNEP. In his speech he broadly outlined the significance of Regional Seas Programme and efforts taken by UNEP on Conservation and Management of Oceans and he also outlined the importance regional co-operation and congratulated South Asian Seas Programme for the initiative in organising the unique workshop. Dr. B. R. Subramanian Government of India in his welcome address emphasised the need of ocean data collection and interpretation. A Training Manual on the Workshop was released by Dr Anjan Datta. With the introduction of delegates from SAS member countries, the experts delivered four lectures. Four expert lectures were delivered with practical data covering the two themes Marine Pollution and Near Shore Environment

Cruise

On 19th September, The delegates boarded the Ocean going Research Vessel Sagar Kanya. The Ship set sail from Chennai Port heading towards east to the selected location for sampling at 14. 30 hrs. Subsequently on board the ship, sessions were inaugurated by Mr. P. Madeswaran, Director, Ministry of Earth Sciences, Government of India with welcome address by Mr Singh Captain of the vessel. Mr M M Subramanian briefed on the salient features of the vessel and proposed plan of activities. The first lecture On Board on Nutrient Analysis was delivered by Dr Sivaji Patra and analytical set up were established by Indian Scientist. Later Indian Scientists demonstrated surface water sampling were demonstrated to participants on nutrient analysis with systematic explanation including reagent preparation was also shown.

The delegates concluded with thanks to Indian Scientists for their sincere efforts in conducting this experiment in spite of hostile ship conditions, where getting correct data is very difficult. One of the experts mentioned that how it is difficult and expensive to get such data which are very much required for policy and management. Also Spectrophotometer Operation and Analysis was shown during the analysis. Finally result matched with standard that showed the importance of systematic data collection and need to have expertise. Later Sea Bed Sediment Sampling was conducted at 200m water depth using Van veen Grab.

The CTD is an instrument lowered from the sea surface to the seabed, was continuously sending data back up the cable to a computer on the ship. It measures temperature, salt, plankton chlorophyll, dissolved oxygen. The sampling bottles can be triggered to shut at any depth to collect water samples to analyse for nutrient concentrations and plankton species. CTD cast was performed at 500m water depth. Salinity and temperature with depth profile was demonstrated. After the retrieval of CTD unit participants joined with Indian Scientists and collected seawater samples. The participants got involved in the discussions and some of them participated in analytical process



On 20th September a visit to Navigation and Communication Facility of the research vessel was undertaken. Capt Amarjeet Singh explained the uniqueness of research vessel navigation with emphasis on Dynamic Position System available on board for perfect sea keeping in high seas. Also he briefed on the traditional way of navigation and navigational chart reading to the delegates. The Radio Officer on board showed about IMMARSAT Satellite communication system and other radio safety equipment like EPIRB on board the vessel. He also emphasised on the systematic ship safety and fire fighting appliances survey being conducted by Mercantile Marine Department. The delegates understood the overview of the ship navigation in particular for scientific activities. Later participants had opportunity to see the Ship Propulsion and Engine Room Facility which were explained by Mr Saubhagya Kumar Sahoo Chief Engineer

Customary Boat Drill was conducted to get familiarised with safety and fire fighting appliances on board the ship. SOLAS regulations were explained to the delegates

This was followed by three lectures by UNDOALOS on Ecosystem Introduction to An Ecosystem Approach, Scientific Aspects of Marine Ecosystems and International Legal and Policy Framework for Area based Management, including for the ecosystem approach. Later Dr. Anjan Datta spoke on the importance of GPA and on Land Based Pollution in South Asian countries. There was a lecture by Ms Kristina Thygesen of UNEP GRID Arendal on Geoscience as a Tool for Marine Management: the Application of Biophysical Data to support decision making which covered the practical aspects of Sea Bed Mapping on Policy Issues. Finally the Status of International Environmental Agreements on the Coastal and Marine Environment by SAS member countries in South Asian Seas region was presented. This data was given to each participant requesting them to verify data presented in their respective countries

On 21st September vessel reached Chennai Port and delegates got glimpses of ship navigation to berth and in the evening delegates left for INCOIS Hyderabad.

Hyderabad

INCOIS is the Data Warehouse of Ocean related Information gathered from various Institutions in India. This information is then translated into deliverable products to a range of users such as Fishing Community, State Fishery Department Officers, Planning Commission, Ports and Harbours, Shipping Industry, Navy, Coast Guards, Central Pollution Control Board etc.

On 22nd September, after the welcome speech by Dr. Satheesh Shenoi. Director INCOIS, Scientists presented 4 lectures as per schedule. The delegates interacted with speakers and got clarifications on many of their queries and understood the quantum of data collected and interpreted. The Director very kindly offered to extend the Ocean Information Services to South Asian Seas member countries, in particular, on the on CholoroGEN and Coral Reef Mapping with Satellite Imagery. The delegates agreed to discuss this with their Ministries and are expected to interact with INCOIS India through SACEP/SASP. In the afternoon the delegates visited the Tsunami Warning System was shown along with Colour Lab, Coral Reef Mapping & Ocean Forecast Laboratories.

Valedictory Function

The Valedictory Function was held with a special address by Dr Satheesh Shenoi Director INCOIS who was the Chief Guest for the function and Dr Anjan Datta gave away the certificates to the participants. Finally participants expressed their views and suggested that such workshops should be conducted periodically which will bring together SAS member countries to conserve and protect marine environment.

The workshop ended with vote of thanks by SACEP who thanked everyone who supported this unique exercise to be completed in a successful manner.



Outputs Achieved

- The workshop strengthened the collaboration and interaction among the participants and with experts that will contribute to develop and implement future regional activities. The Government of India offered to support SAS member countries in Mapping Coral Reef Ecosystem as it is being executed in India by INCOIS and also CholoGEN Project wherein data products are disseminated to India Iran, Maldives, Thailand, Kenya, Omen and Tanzania on products such as Chlorophyll, Sea Surface Temperature, TSM.
- The participants could enhance their skills and knowledge from the hands-on experience and the lectures delivered by eminent resource persons from the Indian Research - Institutions of Ministry of Earth Sciences Government of India such as ICMAM PD - Chennai, NCAOR - Goa and INCOIS - Hyderabad Indian Coast Guard and UNEP, UNDOALOS and UNEP GRID Arendal on correlation and interpretation of data with relevance of Ocean Policy and Management.
- The workshop enabled the participants to understand the importance of Ocean Data Collection and Interpretation which would benefit them to define policies and programmes. This will help in their respective countries to effectively perform their duties in Conservation and Management of Marine Resources.
- The Training Manual which was launched at the Opening of the Workshop in Chennai provided detailed information with research articles presented as Five Theme Areas can be a reference reading material in the field of Ocean Management and participants can always recollect their field experience gained and can correlate to the manual

Feed back

It is appropriate to quote from the feedback received from delegates/experts

- *One of the experts after witnessing the Tsunami Warning System on 21 September that "2 million people living along the South Asian Seas Coast could sleep peacefully as there are 2 scientists manning the Tsunami Warning Centre (round the clock) at INCOIS Hyderabad"*
- *Ocean Data Collection using ship methods is most expensive and time consuming and this workshop showed the importance on policy issues*
- *This 5 day was most memorable learning experience with both technical and practical exposure in particular on board the ship*
- *All the participants expressed the need to have such workshop regularly and this should be beginning*

	Country / Organisation	Name
D E L E G A T E S	Bangladesh	Mr. Abani Bhushan Thakur
	Bangladesh	Mr A.H.M Golam Kibria
	India	Mr Dhanasekaran, Ramachandran
	India	Mr Purushottom Sakhare
	Maldives	Mr Rahmathulla Shaheed
	Maldives	Mr Abduk Rahman Adil
	Pakistan	Mr Ehsan Ahmed
	Pakistan	Ms. Farzana Altaf Shah
	Sri Lanka	Ms. D. M. T. K. Dissanayake
	Sri Lanka	Mr A. Jagath M. Gunasekera
	UNEP	Dr. Anjan Datta
	UNDOALOS	Ms Alice Hicuburundi
	UNEP - GRID Arendal	Ms Kristina Thygesen
	SACEP / SASP	Dr. R. Venkatesan
	SACEP / SASP	Mr Hiran Tillekeratne
	Mr Prasantha Dias Abeyegunawardene	

Acknowledgements

SASP/SACEP expresses their sincere thanks to the Government of India, UNEP, UNDOALOS and UNEP GRID Arendal, for the support in conducting this workshop successfully. SAS member countries are thanked for involving in this activity

To conclude: This is the shortest ever programme organised by SASP/SACEP in 4 months from the concept formulation to successful completion

