

NATIONAL INSTITUTE OF OCEANOGRAPHY  
(Council of Scientific and Industrial Research)  
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REPORT ON THE  
98TH OCEANOGRAPHIC CRUISE OF  
O.R.V. SAGAR KANYA

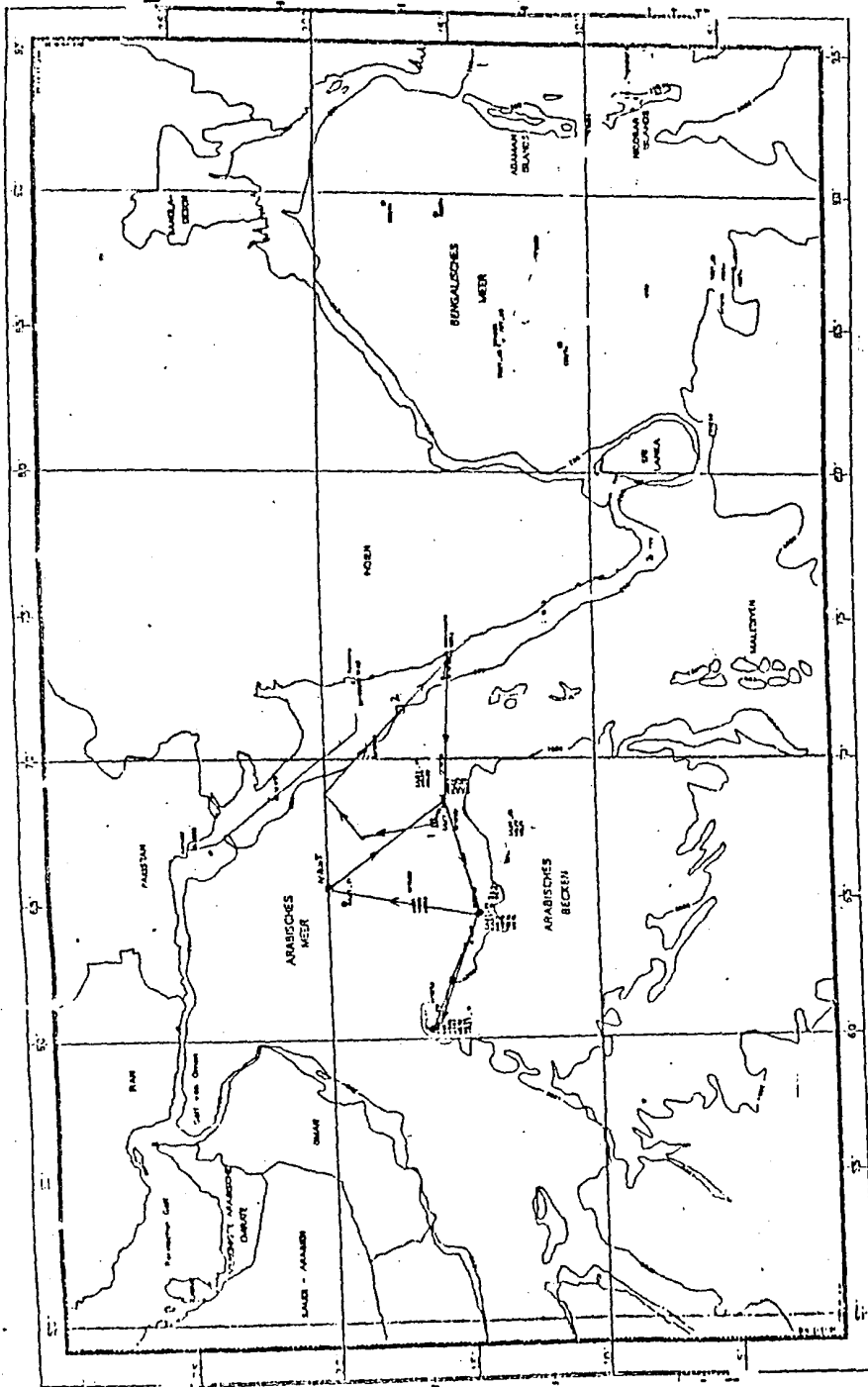
( 3rd to 21st January, 1995 )

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O.R.V. SAGAR KANYA

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ORV Sayur Kanya - 98  
*crisis track.*

## 2. CRUISE SUMMARY

This cruise is part of an on-going Indo-German collaborative programme in the field of marine geology and oceanography, to understand and evaluate the vital role played by monsoons and its implications on Biogeochemical processes in the northern Indian Ocean. The main task involved was to quantify the particulate flux sinking to the ocean floor through sediment trap moorings at pre-selected locations in both the Arabian Sea and Bay of Bengal.

The cruise started from Mormugao Harbour on 3.1.1995 to recover the sediment traps in the Arabian Sea which were deployed during Oct./Nov., 1993 and to re-deploy them. Three sediment traps were recovered from EAST, CAST and WAST and they were re-deployed. An additional trap at NAST was also deployed. Deep-sea core sample was collected at a depth of 3300 m at  $16^{\circ}12.78'N$  and  $67^{\circ}47.74'E$ . During the cruise, continuous echosounding was carried out besides collecting zooplankton and aerosol samples. The cruise ended on 21.1.1995 at Mormugao Harbour.

3. PARTICIPANTS

a) Scientific Component :

M.V.S. Gupta	- Chief Scientist)	
A.S. Muralinath	)	
B. Vijaykumar	)	
G. Parthiban	)	
V.S. Rajaraman	)	National Institute of
R. Venkatesan	)	Oceanography, Goa.
G. Janakiraman	)	
S.S. Pattanshetti	)	
A. Sardar	)	
B. Subramanyam	)	
M.M. Subramaniam	- Shipboard trainee	

Holger Breul	)	
Sandra Krause	)	
Christian Meyer	)	Institute of Biogeochemis-
Stephan Reschke	)	try and Marine Chemistry,
Jorg Tiemann	)	University of Hamburg.

b) Ship's complement :

Capt. Chidananda Pal	- Master
C.P. Girilal	- Chief Officer
Sam Abraham	- Second Officer
M. Thangamani	- N.W.K.O.
T.J. Tojan	- Radio Officer
Sudhir R. Garge	- Purser
Dinesh Kumar Tyagi	- Medical Officer
Subrata Dhar	- Chief Elec. Officer
S. Janaka	- Second Elec. Officer
M.N. Muraleedharan	- Third Elec. Officer
Sukanta Dutta	- Act. 3/E/O
Dharikshan Singh	- 4/E/O
Subrata Biswas	- 5/E/O
M.F.M. Louis	- Elec. Officer
K. Pandey	- Elec. Officer
R.M. Fernandes	- Catering Officer

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#### 4. INTRODUCTION

This cruise is part of an ongoing Indo-German collaborative programme in the field of marine geology and oceanography. The main purpose of this project is to understand and evaluate the vital role played by monsoons and its implication on Biogeochemical processes in the northern Indian Ocean.

In order to achieve the above goals, the main task was to quantify the particulate flux sinking to the ocean floor through sediment trap moorings at pre-selected locations in both the Arabian Sea and Bay of Bengal.

These studies would enable us to understand precisely the upwelling phenomenon in relation to monsoon and also its implication on changing hydrography. The result of this programme is immensely relevant in the context of the JGOFS (India) a core component of the IGBP.

#### 5. OBJECTIVES

- a. To recover the sediment traps from EAST, CAST and WAST in the Arabian Sea which were deployed during the cruise on board F/S SONNE during Oct./Nov., 1993.
- b. To re-deploy at EAST, CAST and WAST, in addition, to deploy an additional trap location (NAST).
- c. To collect deep-sea core samples at pre-selected sites.

- d. To collect zooplankton samples.
- e. To run continuous echosounding.
- f. To collect aerosol samples along the cruise track.

## 6. CRUISE DETAILS

O.R.V. SAGAR KANYA sailed off from Mormugao Harbour on 3.1.1995 with eleven participants from NIO and five from University of Hamburg. The cruise was undertaken under the Indo-German collaborative programme to understand and evaluate the vital role played by monsoons and its implication on biogeochemical processes in the northern Indian Ocean. The particulate flux sinking to the ocean floor was studied through sediment trap moorings at pre-selected stations in both the Arabian Sea and the Bay of Bengal.

The first task was to recover the sediment traps from the EAST, CAST and WAST which were deployed during October/November, 1993. On 5.1.1995, the ship arrived at the EAST sediment trap location at 15°37.55'N and 68°33.55'E. After the recovery of the traps, water sampling was carried out. On 7.1.1995, the ship arrived at CAST station (14°27.82'N, 64°36.09'E) and recovered the second sediment trap. On 9.1.1995, the trap was recovered at WAST station (16°21.25'N, 60°17.79'E). All the three recovered sediment traps were re-deployed and another trap was also deployed at NAST location. On 15.1.1995, the ship stopped for collection of deep-sea core at a depth of 3300 m at



location 16°12.78'N, 67°47.73'E. Due to continued rough sea condition, the next coring station was abandoned. Throughout the cruise echosounding and collection of aerosol and zooplankton samples were continued.

On completion of the cruise, the ship arrived at Mormugao harbour on 21.1.1995.

#### 7. RECOMMENDATIONS

1. Hydrographic winch wire is badly rusted, hence new wire rope may be replaced immediately.
2. All the water samplers in the Port-Wet lab. are damaged, hence they may be replaced with new ones.
3. On-board Benthos Deck Unit and the transponder are malfunctioning. Since it is very essential to release the deep-sea moorings, this may immediately be rectified, if not, a new unit may be procured at the earliest.
4. The Vacuum pump in the multi-purpose lab. is not functioning. It may be rectified.
5. Telephones may be installed in all the cabins of the scientists.

#### 8. ACKNOWLEDGEMENT

The Chief Scientist and other participants are grateful to the Captain and the crew for their cooperation throughout the cruise.