

**ASSESSING THE RELATIONSHIP BETWEEN
INDIAN OCEAN SEA SURFACE TEMPERATURE
AND PRECIPITATION USING RAMA BUOY DATA**

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TABLE OF CONTENT

| | Page No. |
|----------------------------------------------------------------------------------------------------------|-----------|
| DECLARATION | i |
| ABSTRACT..... | ii |
| ACKNOWLEDGEMENT | iii |
| LIST OF TABLES..... | vi |
| LIST OF FIGURES | vii |
| ABBREVIATIONS | ix |
| CHAPTER 01 | 1 |
| INTRODUCTION..... | 1 |
| 1.1.1 Background..... | 1 |
| 1.1.2 Problem statement and Justification..... | 2 |
| 1.1.3 Objectives | 2 |
| LITERATURE REVIEW..... | 3 |
| 1.2.1 The Indian Ocean | 3 |
| 1.2.2 Rain fall pattern in the Indian Ocean..... | 4 |
| 1.2.3 Sea surface Temperature in Indian Ocean..... | 6 |
| 1.2.4 Monsoon wind pattern In Indian Ocean | 7 |
| 1.2.5 Monsoon currents in Indian Ocean..... | 8 |
| 1.2.5.1 Southwest Monsoon..... | 8 |
| 1.2.5.2 Northeast Monsoon..... | 9 |
| 1.2.6 Research Moored Array for African–Asian–Australian Monsoon Analysis and Prediction (RAMA) | 10 |
| 1.2.7 Relationship between Sea surface temperature and Rainfall..... | 13 |
| CHAPTER 02 | 18 |
| METHODOLOGY..... | 18 |

| | |
|--------------------------------------------------------------------------|-----------|
| 2.1 Site..... | 18 |
| 2.2 Instruments and data used | 18 |
| 2.2.1 Sea surface temperature..... | 19 |
| 2.2.2 Wind speed and direction | 20 |
| 2.2.3 Precipitation..... | 20 |
| 2.3 Data Analysis | 21 |
| CHAPTER 03 | 24 |
| RESULTS | 24 |
| 3.1 Sea Surface Temperature, Precipitation and Wind Variation | 24 |
| 3.1.1 Sea Surface Temperature (SST) | 24 |
| 3.1.2 Precipitation..... | 26 |
| 3.1.3 Wind Speed and Direction..... | 28 |
| 3.1.4 Wind direction variation in northern and southern hemisphere | 31 |
| 3.2 Correlations of Sea surface temperature and Precipitation | 32 |
| CHAPTER 04 | 36 |
| DISCUSSION | 36 |
| CONCLUSION | 41 |
| REFERENCES | 42 |
| APPENDICES | 46 |

ABSTRACT

Precipitation in the Indian Ocean associated countries depends on the monsoon winds, which is modulated by the intensity of the heating and cooling of the Indian Ocean. Sea surface temperature is an indicator of air-sea interaction, reflecting the heat fluxes in and out of the Indian Ocean. This study is intended to explore any possible relation between the sea surface temperature and precipitation, if any. Results of this study will be contributes to the prediction of monsoon using sea surface temperature.

In situ sea surface temperature, precipitation and wind data, for the period from 2007-12, are collected from the eleven buoys (Bay of Bengal (BoB) -3, Equator (EQ) -2, and south of equator (SoE) - 06), moored under the Array for African-Asian-Australian Monsoon Analysis and Prediction program (RAMA) of the Global Tropical Moored Buoy Array. The buoys are an integral part of the Global Ocean Observing System (GOOS) and Global and Climate Observing System (GCOS). Linear correlations were obtained between SST and precipitation in the same region as well as different regions.

No any significant correlation was observed between SST and precipitation in the equatorial region and BoB, but significant positive correlation (0.58) was shown in the south of equatorial region. There were significant negative correlations have shown between SST and precipitation in the equator and the south of the equator (0.73), BOB and the south of the equator (0.78), south of the equator and BoB (0.75) respectively. It was found that the rainfall in the south of equator is affected by SST during the northeast monsoon, but rainfall in the north of equator affected by SST during southwest monsoon. Therefore, it can be concluded that the SST has a negative relationship with southwest monsoon in north of equator and northeast monsoon in the south of equator.

Key words: Precipitation, RAMA buoy, Sea surface temperature,