Abstract

Large reserves of manganese nodules have been identified in the Central Indian Basin, as a result of extensive exploration comprising more than 2000 shipdays, 7 research vessels, 9000 samples, 400,000 km of narrowbeam echosounding, 300,000 sq km of multibeam sounding, over 50,000 photographs, 450 hours of video data and 1130 km of deeptowed SBP and SSS data.

Spatial variation of nodule abundance and grade, their inter-relationship with one another, as well as the bathymetry of the seabed were the prime considerations for selection of the 'Pioneer Area' of 150,000 sq km, which was allocated to India in 1987. An environmental impact assessment experiment has also been initiated to evaluate the possible effects of mining activity on the deepsea environment.

Key words: Manganese nodules, spatial distribution, seafloor features, application to mining.

Introduction

As a result of a planned approach and extensive exploration activity, India became the first country to be allocated an area of 150,000 sq km in the Central Indian Basin (Fig. 1), by the International Seabed Authority in 1987. Beginning with the regional surveys (at 100 km grid), and followed by closer sampling (at 25 km grid), detailed bathymetric surveys and large number of deeptow profiles, have resulted in a large database for identification of potential areas for mining in future.