



R F D

Results Framework Document
(RFD 2012-13)

for
National Centre for Antarctic and Ocean
Research (NCAOR)
(March, 2012)

Section 1:

VISION

To take up and implement such scientific programmes in the Polar and Southern Ocean regions that will ensure a lead role for India amongst the nations involved in polar and oceanographic research.

MISSION

To plan, promote, co-ordinate and execute the entire gamut of polar science and logistic activities of the country in order to ensure a perceptible and influential presence of India in Antarctica, Arctic and to uphold our strategic interests in the global framework of nations in the Southern Continent and the surrounding ocean.

OBJECTIVES & FUNCTIONS

- To undertake, aid, promote, guide and co-ordinate scientific research in the fields of polar science and Southern Ocean Oceanography.
- To serve as a nodal agency responsible for the overall coordination and implementation of the Indian Antarctic and Arctic Programmes.
- To establish and maintain research base in Antarctica and provide all operational and logistic support.
- To encourage multi-disciplinary and multi-institutional research both at National and International levels, especially in the frontier areas of science, which are emerging and have potential applications.
- To devise, formulate and initiate programs, which will create knowledge base for future commercial and thematic interests of India in Antarctica, Arctic and the Southern Ocean.
- To effectively interact and liaison with SCAR, COMNAP, SCALOP and other international bodies in order to keep the Indian Antarctic Program abreast with international developments and to ensure a perceptible presence of India in the global framework of nations in Antarctica.
- To extend a singular research laboratory setup with such facilities which are of specialized nature or otherwise not easily accessible.
- To develop predictive models for dynamic processes controlled and driven by Antarctica and the surrounding oceans.
- To coordinate, address and monitor all environmental issues in Antarctica arising out of the Environmental Protocol.
- To develop a complete database inventory and repository (National Antarctic Data Centre) for Antarctic and Arctic Science and logistics including a polar museum and a library.
- To provide a fertile platform to generate specialized human resource capabilities for polar science and logistics through training, fellowships, awards, workshops, publications, and exchange of scientists etc., both at national and international levels.
- To coordinate cruise planning and management of the oceanographic research vessels engaged by the Ministry of Earth Sciences and the NCAOR.
- To take up other scientific and technological projects of the Ministry of Earth Sciences when entrusted.

Section 2: Inter se Priorities among Key Objectives, Success indicators and Targets

Objective	Weight	Action	Success Indicator	Unit	Weight	Target / Criteria Value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
1. To improve our understanding of Polar Science and its implications for climate change	65.00	[1.1] Planning, Coordination and implementation of Indian Antarctic Program	[1.1.1] Launching of the 32 nd Expedition	Date	13.00	20/11/2012	01/12/2012	15/12/2012	31/12/2012	15/01/2013
			[1.1.2] Completion of targeted scientific and logistics tasks	%	5.42	100	90	80	70	60
			[1.1.3] Initiation of Phase II construction-stage activities of the 3 rd station	Date	6.5	30/11/2012	15/12/2012	20/12/2011	31/12/2012	15/01/2013
		[1.2] Planning, Co-ordination and implementation of the Scientific Expeditions to the Arctic	[1.2.1] Launching of the 6 th Expedition in the Arctic region during the summer (S) and winter (W) 2012-13	Date	6.5	25/06/2012	10/07/2012	15/07/2012	20/07/2012	25/07/2012
			[1.2.2] Completion of all targeted scientific and logistics activities at Ny-Alesund for the year	Date	5.42	01/03/2013	10/03/2013	15/03/2013	20/03/2013	25/03/2013
		[1.3] Planning, Co-ordination and implementation of the Scientific studies in the Indian Ocean sector of the Southern Ocean.	[1.3.1] Launching of Southern Ocean Expedition (2012-13)	Date	10.83	15/01/2013	25/01/13	05/02/2013	10/02/2013	15/02/2013
			[1.3.2] Completion of analytical work of data collected during the previous expedition and submission	Date	5.42	15/10/2012	31/10/2012	15/11/2012	30/11/2012	15/12/2012
		[1.4] In-house R&D projects in the fields of cryospheric studies, polar remote sensing, paleoclimatology, polar biology and environmental studies	[1.4.1] Completion of targeted field data collection and analytical work and submission of reports	%	6.5	100	90	80	70	60
			[1.4.2] Publication of results in peer-reviewed journals	Number	5.42	15	12	10	8	5

2. To conduct survey for assessing non-living resources	35.00	[2.1]	Survey, exploration for polymetallic nodules, Cobalt crust, hydrothermal sulphides, gas hydrates, and survey of Exclusive Economic Zone and CLCS	[2.1.1]	Deployment of Research Vessel	Days	17.50	280	270	260	250	220
		[2.2]	Geological and Tectonic Evolution of the Northern Indian Ocean and activities related to Integrated Ocean Drilling Program (IODP)	[2.2.1]	Completion of Data analyses pertaining to the Laccadive offshore region; data collection from the forearc region of Andamans and field studies on Barren and Narcondam islands	Date	11.67	31/08/2012	30/09/2012	31/10/2012	01/01/2013	15/02/2013
		[2.2.2]		Revision and submission of the scientific proposal to IODP based on the comments/ observations from the reviewers; Participation of Indian scientists in IODP cruise	Date	5.83	31/10/2012	15/11/2012	30/11/2012	15/12/2013	15/01/2013	

Section 3. Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual value for FY 10-11	Actual value for FY 11-12	Target value for FY 12-13	Projected value for 13-14	Projected value for 14-15
1. To improve our understanding of Polar realm and its implications for climate change	[1.1] Planning, Coordination and implementation of Indian Antarctic Program	[1.1.1] Launching of the Annual Expedition	Date	17/10/10	26/10/2011	10/11/2012	20/11/13	20/11/2014
				100%	100%	100%		
		[1.1.2] Completion of targeted scientific and logistics tasks	%	100	100	80	100	100
				100%	100%	80%		
		[1.1.3] Initiation of Phase II construction stage activities of the 3 rd station	Date	01/11/10	10/11/11	30/11/2012	-	-
				100%	100%	100%		
	[1.2] Planning, Co-ordination and implementation of the Scientific Expeditions to the Arctic	[1.2.1] Launching of the summer (S) and winter (W) phases of study in the Arctic region	Date	25/05/10	16/05/2011	01/06/12	15/06/2013	15/06/2014
				100%	100 %	100%		
		[1.2.2] Completion of all targeted scientific and logistics activities at Ny-Alesund for the year	Date	24/03/11	28/04/12	15/04/2013	24/04/2014	24/04/2015
				100%	70%	Below 60%		
	[1.3] Planning, Co-ordination and implementation of the Scientific studies in the Indian Ocean sector of the Southern Ocean.	[1.3.1] Launching of Southern Ocean Expedition	Date	22/01/2011	25/12/11	11/01/13	15/01/14	15/01/15
				95%	100%	100%		
		[1.3.2] Completion of analytical work of data collected during the previous expedition and submission	Date	31/12/2010	31/12/2011	31/10/2012	31/12/2013	31/12/2014
				100%	100%	100%		
[1.4] In-house R&D projects in the fields of cryospheric studies, polar remote sensing, paleoclimatology, polar biology and environmental studies	[1.4.1] Completion of targeted field data collection and analytical work and submission of reports	%	95%	100%	100%	100%	100%	
			100%	100%	100%			
	[1.4.2] Publication of results in peer-reviewed journals	Number	48	18	24	20	30	
			100%	100%	100%			

2. To conduct survey for assessing non-living resources	[2.1]	Survey, exploration for polymetallic nodules, Cobalt crust, hydrothermal sulphides, gas hydrates, and survey of Exclusive Economic Zone and CLCS	[2.1.1]	Deployment of Research Vessel	Days of Cruises (ORV Sagar Kanya)	267	249	279	270	270
						80%	70%	100%		
	[2.2]	Geological and Tectonic Evolution of the Northern Indian Ocean and activities related to Integrated Ocean Drilling Program (IODP)	[2.2.1]	Completion of Data analyses pertaining to the Laccadive offshore region; data collection from the forearc region of Andamans and field studies on Barren and Narcondam islands	Date	31/03/2011	01/01/2012	01/02/2013	01/2/2014	01/02/2015
						100%	100%	60%		
			[2.2.2]	IODP workshop on the Indian proposal for scientific drilling in the Arabian Sea; revision and submission of the scientific proposal to IODP based on the comments/ observations from the reviewers; Participation of Indian scientists in IODP cruise	Date	30/03/2011	31/03/2012	Conducted on 14-15 Jan 2013	31/03/2014	31/03/2015
						100%	100%	100%		

Section 4
Description and Definition of Success Indicators
and Proposed Measurement Methodology

Objective	Action	Success Indicator	Definitions/Methodology
1. To improve our understanding of the Polar realm and its implications for climate change	Planning, Coordination and implementation of Indian Antarctic Program	Launching of Annual Expedition to Antarctica, Pre-construction and construction stage activities at the site of the new station, and completion of targeted scientific and logistics activities	Actual completion of all targeted scientific data collection; Launching and return of the expedition as per schedule.
	Planning, Coordination and implementation of Scientific Studies in the Arctic	Launching of Summer & Winter phases of the studies in the Arctic, and completion of all targeted scientific activities	Actual completion of all targeted scientific data collection; Launching and return of the expedition as per schedule.
	Planning, Coordination and implementation of Scientific studies in the Indian Ocean sector of the Southern Ocean	Launching of Southern Ocean Expedition, and completion of all targeted scientific activities	Actual completion of all targeted scientific data collection; Launching and return of the expedition as per schedule.
	In-house R&D projects in the fields of cryospheric studies, polar remote sensing, paleoclimatology, polar biology and environmental studies	completion of all targeted scientific activities and publications in peer-reviewed journals	No. of samples analysed vis-à-vis the targets and the number of publications vs. targeted
2. To conduct survey for assessing non-living resources	Survey, exploration for polymetallic nodules, Cobalt crust, hydrothermal sulphides, gas hydrates, and survey of Exclusive Economic Zone	completion of all targeted scientific activities and publications in peer-reviewed journals	Area surveyed vs. planned and no. of publications
	Geological and Tectonic Evolution of the Northern Indian Ocean and activities related to Integrated Ocean Drilling Program (IODP)	Completion of targeted scientific studies, finalization and submission of proposal for deep sea drilling under IODP	Studies carried out vs. planned, the no. of publications, and the date of submission of drilling proposal to IODP and its acceptance.

Section 5: Specific Performance Requirements from other Departments

SI. No.	Objective	Department	Relevant Success Indicator	What do you need?	Why do you need it	How much you need?	What happens if you do not get it?
1	To improve Our understanding of Polar realm and its implications for climate change	Planning Commission	Launching Expeditions to the Antarctic, Arctic and the Southern Ocean	Mandatory ingredients for program implementation	Funds required for launching expeditions	In full measure	Project cannot be implemented in its entirety.

Section 6: Outcome/ Impact of activities of NCAOR

1	2	3	4	5	6	7	8	9
Sl. No.	Outcome/ Impact of organisation/ RCs	Jointly responsible for influencing this outcome/ impact with the following department(s)	Success Indicator	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15
1	Indian Antarctic Program	Participating Organisations/ Institutions, Research Advisory Committee of NCAOR/ NCAP	Launching of the Annual Expedition (Unit: Date)	30	31	32	33	34
				20/12/10	26/10/11	10/11/12	20/11/13	20/11/14
2	Scientific Expeditions to the Arctic	Participating Organisations/ Institutions, Research Advisory Committee of NCAOR.	Launching of Arctic Expedition (Unit: Date)	25/05/10	16/05/11	01/06/12	15/06/13	15/06/14
3	Scientific studies in the Indian Ocean sector of the Southern Ocean.	Participating Organisations/ Institutions, Research Advisory Committee of NCAOR.	Launching of Southern Ocean Expedition (Unit: Date)	22/01/11	25/12/11	11/01/13	15/01/14	15/01/15
4	In-house R&D projects in the fields of cryospheric studies, polar remote sensing, paleoclimatology, polar biology and environmental studies	Research Advisory Committee of NCAOR.	Completion of targeted field data collection and analytical work and submission of reports (Unit: %)	100	100	100	100	100
			Publication of results in peer-reviewed journals (Unit: Number)	44	35	24	40	40
5	Survey, exploration for polymetallic nodules, Cobalt crust, hydrothermal sulphides, gas hydrates, and survey of Exclusive Economic Zone	JSTAC and Participating Organisations/ Institutions	Deployment of Research Vessel (Unit: Days of Cruises - ORV Sagar Kanya)	269	249	279	270	270
6	Activities related to Integrated Ocean Drilling Program (IODP)	Participating Organisations/ Institutions, Expert Group for coordinating Indian activities in	IODP workshop on the Indian proposal for scientific drilling in the Arabian Sea; revision and submission of the scientific proposal to IODP based on the comments/ observations from the reviewers; Participation of Indian scientists in IODP cruise. (Unit: Date)	31/03/11	31/03/12	14-15 January 2013	31/03/14	31/03/15