



Government of India

R F D

(Results-Framework Document)
for

National Centre for Antarctic and Ocean
Research (NCAOR)
(2013-2014)

Section 1: Vision, Mission, Objectives and Functions

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

- 1 To improve our understanding of Polar Science and its implications for climate change
- 2 To conduct survey for assessing non-living resources as well as to undertake scientific research in the ocean realm.

Functions

- 1 To undertake, aid, promote, guide and co-ordinate scientific research in the fields of polar science and Southern Ocean Oceanography.
- 2 To serve as a nodal agency responsible for the overall coordination and implementation of the Indian Antarctic, Arctic and Southern Ocean Programmes.
- 3 To establish and maintain research bases in Polar realms and provide all operational and logistic support.
- 4 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.
- 5 To effectively interact and liaison with SCAR, COMNAP, SCALOP, IASC, NySMAC, SOOS and other international bodies in order to keep the Indian Polar Program abreast with international developments and to ensure a perceptible presence of India in the global framework of nations in the Polar regions.
- 6 To extend a singular research laboratory setup with such facilities which are of specialized nature or otherwise not easily accessible.
- 7 To coordinate, address and monitor all environmental issues in Antarctica arising out of the Environmental Protocol.
- 8 To develop a complete database inventory and repository (National Polar Data Centre) for Antarctic and Arctic Science and logistics including a polar museum and a library.
- 9 To conduct surveys for assessing the marine non-living resources and to initiate scientific research activities in the marine domain.

Section 1: Vision, Mission, Objectives and Functions

- 10 To coordinate cruise planning and management of the oceanographic research vessels of the Ministry of Earth Sciences and the NCAOR.
- 11 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	59.00	[1.1] Planning, Coordination and implementation of Indian Antarctic Program	[1.1.1] Launching of the 33rd Expedition	Date	19.00	20/11/2013	01/12/2013	15/12/2013	31/12/2013	15/01/2014
			[1.1.2] Completion of targeted scientific and logistics tasks and return of members of 32nd expedition	Date	5.00	08/04/2013	12/04/2013	15/04/2013	17/04/2013	20/04/2013
			[1.1.3] Completion of analytical work of data collected during previous expedition and submission of reports	Date	1.50	10/10/2013	15/10/2013	20/10/2013	25/10/2013	31/10/2013
			[1.1.4] Publication of results in peer-reviewed journals	Number	2.50	15	13	12	10	9
		[1.2] Planning, Co-ordination and implementation of the Scientific Expeditions to the Arctic	[1.2.1] Launching of the 7th Expedition in the Arctic region during the summer (S) and winter (W) 2013-14	Date	5.50	15/06/2013	20/06/2013	25/06/2013	30/06/2013	04/07/2013
			[1.2.2] Completion of targeted scientific and logistics tasks and return of members of 6th expedition	Date	5.00	25/04/2013	28/04/2013	30/04/2013	02/05/2013	05/05/2013
			[1.2.3] Completion of analytical work of data collected	Date	1.50	10/10/2013	15/10/2013	20/10/2013	25/10/2013	31/10/2013

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%	
			during previous expedition and submission of reports								
			[1.2.4] Publication of results in peer-reviewed journals	Number	1.00	6	5	4	3	2	
		[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 7th Southern Ocean Expedition (2013-14)	Date	14.50	15/01/2014	25/01/2014	05/02/2014	10/02/2014	15/02/2014	
			[1.3.2] Completion of targeted scientific and logistics tasks and return of 7th expedition	Date	1.50	01/03/2014	05/03/2014	08/03/2014	10/03/2014	15/03/2014	
			[1.3.3] Completion of analytical work of data collected during the previous expedition and submission	Date	1.00	15/11/2013	18/11/2013	22/11/2013	30/11/2013	15/12/2013	
			[1.3.4] Publication of results in peer-reviewed journals	Number	1.00	8	6	5	4	2	
[2] To conduct survey for assessing non-living resources as well as to undertake scientific research in the ocean realm.	30.00	[2.1] Survey, Exploration and EIA activities under polymetallic hydro sulphide programme	[2.1.1] Deployment of Research Vessel- data collection	Sq.km	2.50	2000	1800	1600	1500	1200	
			[2.1.2] Completion of processing, analysing and	Date	4.00	27/03/2014	28/03/2014	29/03/2014	30/03/2014	31/03/2014	

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%
			interpretation of data collected							
		[2.2] Geoscientific studies of the Exclusive Economic Zone	[2.2.1] Deployment of Research Vessel- data collection	Sq.km	2.00	150000	140000	130000	120000	110000
			[2.2.2] Completion of processing, analysing and interpretation of data collected	Date	2.50	27/03/2014	28/03/2014	29/03/2014	30/03/2014	31/03/2014
		[2.3] Surveys for the delineation of the outer limits of the Indian Continental Shelf	[2.3.1] Deployment of Research Vessel- data collection	line km	2.50	5000	4000	3000	2000	1000
			[2.3.2] Completion of processing, analysing and interpretation of data collected	Date	1.50	23/03/2014	25/03/2014	29/03/2014	30/03/2014	31/03/2014
		[2.4] Scientific Ocean Drilling in Indian Ocean through integrated Ocean drilling Program (IODP)	[2.4.1] Expert review by IODP and scientific response submission by IODP-India to the Arabian Sea drilling proposal, Acquisition of site survey data for the drilling proposal.	Date	3.00	30/06/2013	31/07/2013	30/08/2013	30/11/2013	31/03/2014
			[2.4.2] Indian IODP participants meet to discuss their involvements in the Arabian Sea	Date	4.00	24/03/2014	26/03/2014	27/03/2014	28/03/2014	31/03/2014

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%		
			IODP proposal. Participation of Indian scientists in IODP expeditions, Liaisoning with international program agency towards IODP activities									
		[2.5] Deep crustal studies of the Indian continental margin and its interior: An onshore-offshore perspective	[2.5.1] Analyses of multi-channel seismic data along Indian margins and developing integrated sub-surface geological models for SW Indian margin and Andaman Sea regions.	Date	2.50	31/08/2013	30/09/2013	30/11/2013	31/12/2013	31/03/2014		
		[2.6] Exploring the origin of the largest Geoid Low on the Earth	[2.6.1] To understand the origin of largest Geoid low on the Earth in Indian Ocean region using plural geophysical approach	Date	3.50	30/09/2013	31/10/2013	30/11/2013	31/12/2013	31/03/2014		
		[2.7] Publications	[2.7.1] Publication of results in peer-reviewed journals	Number	2.00	10	8	6	4	2		

* Mandatory Objective(s)

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%
* Efficient Functioning of the RFD System	3.00	Timely submission of Draft RFD (2014-15) for approval	On-time submission	Date	2.0	05/03/2014	06/03/2014	07/03/2014	10/03/2014	11/03/2014
		Timely submission of Results for RFD (2012-13)	On-time submission	Date	1.0	01/05/2013	02/05/2013	05/05/2013	06/05/2013	07/05/2013
* Administrative Reforms	4.00	Implement ISO 9001 as per the approved action plan.	% Implementation	%	2.0	100	95	90	85	80
		Prepare an action plan for Innovation	On time submission	Date	2.0	30/07/2013	10/08/2013	20/08/2013	30/08/2013	10/09/2013
* Improving Internal Efficiency /responsiveness / service delivery of Ministry / Department	4.00	Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%	2.0	100	95	90	85	80
			Independent Audit of implementation of public grievance redressal system	%	2.0	100	95	90	85	80

* Mandatory Objective(s)

Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value for FY 11/12	Actual Value for FY 12/13	Target Value for FY 13/14	Projected Value for FY 14/15	Projected Value for FY 15/16
[1] To improve our understanding of Polar Science and its implications for climate change	[1.1] Planning, Coordination and implementation of Indian Antarctic Program	[1.1.1] Launching of the 33rd Expedition	Date	26/10/2011	10/11/2012	20/11/2013	20/11/2014	20/11/2015
		[1.1.2] Completion of targeted scientific and logistics tasks and return of members of 32nd expedition	Date	01/04/2011	03/04/2012	08/04/2013	08/04/2014	08/04/2015
		[1.1.3] Completion of analytical work of data collected during previous expedition and submission of reports	Date	12/10/2011	15/10/2012	10/10/2013	10/10/2014	10/10/2015
		[1.1.4] Publication of results in peer-reviewed journals	Number	9	7	13	15	15
	[1.2] Planning, Co-ordination and implementation of the Scientific Expeditions to the Arctic	[1.2.1] Launching of the 7th Expedition in the Arctic region during the summer (S) and winter (W) 2013-14	Date	16/05/2011	01/06/2012	15/06/2013	15/06/2014	15/06/2015
		[1.2.2] Completion of targeted scientific and logistics tasks and return of members of 6th expedition	Date	04/06/2011	28/04/2012	20/04/2013	25/04/2014	10/04/2015

Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value for FY 11/12	Actual Value for FY 12/13	Target Value for FY 13/14	Projected Value for FY 14/15	Projected Value for FY 15/16
		[1.2.3] Completion of analytical work of data collected during previous expedition and submission of reports	Date	12/10/2011	15/10/2012	10/10/2013	10/10/2014	10/10/2015
		[1.2.4] Publication of results in peer-reviewed journals	Number	5	5	6	6	6
	[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 7th Southern Ocean Expedition (2013-14)	Date	25/12/2011	11/01/2013	15/01/2014	15/01/2015	16/01/2016
		[1.3.2] Completion of targeted scientific and logistics tasks and return of 7th expedition	Date	08/02/2012	01/03/2013	01/03/2014	01/03/2015	01/03/2016
		[1.3.3] Completion of analytical work of data collected during the previous expedition and submission	Date	31/12/2011	31/10/2012	15/11/2013	15/11/2014	15/11/2015
		[1.3.4] Publication of results in peer-reviewed journals	Number	4	2	8	8	8
[2] To conduct survey for assessing non-living resources as well as to undertake	[2.1] Survey, Exploration and EIA activities under polymetallic	[2.1.1] Deployment of Research Vessel- data collection	Sq.km	--	10000	2000	5000	2000

Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value for FY 11/12	Actual Value for FY 12/13	Target Value for FY 13/14	Projected Value for FY 14/15	Projected Value for FY 15/16
scientific research in the ocean realm.	hydro sulphide programme							
		[2.1.2] Completion of processing, analysing and interpretation of data collected	Date	--	31/03/2013	31/03/2014	31/03/2015	31/03/2016
	[2.2] Geoscientific studies of the Exclusive Economic Zone	[2.2.1] Deployment of Research Vessel- data collection	Sq.km	80000	80000	150000	1000000	100000
		[2.2.2] Completion of processing, analysing and interpretation of data collected	Date	31/03/2012	--	31/03/2014	31/03/2015	31/03/2016
	[2.3] Surveys for the delineation of the outer limits of the Indian Continental Shelf	[2.3.1] Deployment of Research Vessel- data collection	line km	--	--	5000	--	--
		[2.3.2] Completion of processing, analysing and interpretation of data collected	Date	--	--	23/03/2014	--	--
	[2.4] Scientific Ocean Drilling in Indian Ocean through integrated Ocean drilling Program (IODP)	[2.4.1] Expert review by IODP and scientific response submission by IODP-India to the Arabian Sea drilling proposal, Acquisition of site survey data for the	Date	01/01/2012	01/02/2013	01/02/2014	01/02/2015	--

Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value for FY 11/12	Actual Value for FY 12/13	Target Value for FY 13/14	Projected Value for FY 14/15	Projected Value for FY 15/16
		drilling proposal.						
		[2.4.2] Indian IODP participants meet to discuss their involvements in the Arabian Sea IODP proposal. Participation of Indian scientists in IODP expeditions, Liaisoning with international program agency towards IODP activities	Date	31/03/2012	15/01/2013	31/03/2014	31/03/2015	--
	[2.5] Deep crustal studies of the Indian continental margin and its interior: An onshore-offshore perspective	[2.5.1] Analyses of multi-channel seismic data along Indian margins and developing integrated sub-surface geological models for SW Indian margin and Andaman Sea regions.	Date	--	--	31/03/2014	--	--
	[2.6] Exploring the origin of the largest Geoid Low on the Earth	[2.6.1] To understand the origin of largest Geoid low on the Earth in Indian Ocean region using plural geophysical approach	Date	--	--	31/10/2014	31/03/2015	31/03/2016
	[2.7] Publications	[2.7.1] Publication of results in peer-	Number	2	3	6	8	8

Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value for FY 11/12	Actual Value for FY 12/13	Target Value for FY 13/14	Projected Value for FY 14/15	Projected Value for FY 15/16
		reviewed journals						
* Efficient Functioning of the RFD System	Timely submission of Draft RFD (2014-15) for approval	On-time submission	Date	--	--	31/03/2013	31/03/2014	31/03/2015
	Timely submission of Results for RFD (2012-13)	On-time submission	Date	--	--	15/04/2013	15/04/2014	15/04/2015
* Administrative Reforms	Implement ISO 9001 as per the approved action plan.	% Implementation	%	--	--	95	5	--
	Prepare an action plan for Innovation	On time submission	Date	--	--	10/08/2013	10/08/2014	10/08/2015
* Improving Internal Efficiency /responsiveness / service delivery of Ministry / Department	Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%	--	--	95	--	--
		Independent Audit of implementation of public grievance redressal system	%	--	--	95	--	--

* Mandatory Objective(s)

Section 4: Acronym

Sl.No	Acronym	Description
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Section 4: Description and Definition of Success Indicators and Proposed Measurement Methodology

SI.No	Success indicator	Description	Definition	Measurement	General Comments
1	[1.1.1] Launching of the 33rd Expedition	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.	
2	[1.2.1] Launching of the 7th Expedition in the Arctic region during the summer (S) and winter (W) 2013-14	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.	
3	[1.3.1] Launching of 7th Southern Ocean Expedition (2013-14)	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.	

Section 5 : Specific Performance Requirements from other Departments

Location Type	State	Organisation Type	Organisation Name	Relevant Success Indicator	What is your requirement from this organisation	Justification for this requirement	Please quantify your requirement from this Organisation	What happens if your requirement is not met.
Central Government		Departments	testorg	<p>[1.1.1] Launching of the 33rd Expedition</p> <p>[1.2.1] Launching of the 7th Expedition in the Arctic region during the summer (S) and winter (W) 2013-14</p> <p>[1.3.1] Launching of 7th Southern Ocean Expedition (2013-14)</p>	Mandatory ingredients for Program implementation	Funds required for launching expeditions	In full measure	Project cannot be implemented

Section 6: Outcome/Impact of Department/Ministry

Outcome/Impact of Department/Ministry	Jointly responsible for influencing this outcome / impact with the following department (s) / ministry(ies)	Success Indicator	Unit	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16
1 Indian Antarctic Program	Participating Organisations/ Institutions, Research Advisory Committee of NCAOR/ NCAP	Launching of the Annual Expedition	Date	26/10/2011	10/11/2012	20/11/2013	20/11/2014	20/11/2015
		Completion of targeted scientific and logistics tasks and return of members of expedition of previous FY	Date	01/04/2011	03/04/2012	08/04/2013	08/04/2014	08/04/2015
		Completion of analytical work of data collected during previous expedition and submission of reports	Date	12/10/2011	15/10/2012	10/10/2013	10/10/2014	10/10/2015
		Publication of results in peer-reviewed journals	Number	9	7	13	15	15
2 Scientific Expeditions to the Arctic	Participating Organisations/ Institutions, Research Advisory Committee of NCAOR.	Launching of Arctic Expedition	Date	16/05/2011	01/06/2012	15/06/2013	15/06/2014	15/06/2015
		Completion of targeted scientific and logistics tasks and return of members of expedition of previous FY	Date	01/04/2011	28/04/2012	20/04/2013	25/04/2014	10/04/2015
		Completion of analytical work of data collected during previous expedition and submission of reports	Date	12/10/2011	15/10/2012	10/10/2013	10/10/2014	10/10/2015
		Publication of results in peer-reviewed journals	Number	5	5	6	6	6
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	Date	25/12/2011	11/01/2013	15/01/2014	15/01/2015	15/01/2016

Section 6: Outcome/Impact of Department/Ministry

Outcome/Impact of Department/Ministry	Jointly responsible for influencing this outcome / impact with the following department (s) / ministry(ies)	Success Indicator	Unit	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	
		Completion of targeted field data collection and analytical work and submission of reports	Date	08/02/2012	01/03/2013	01/03/2014	01/03/2015	01/03/2016	
		Completion of analytical work of data collected during the previous expedition and submission	Date	31/12/2011	31/10/2012	15/11/2013	15/11/2014	15/11/2015	
		Publication of results in peer-reviewed journals	Number	4	2	8	8	8	
4	Survey, exploration for Hydrothermal sulphides	Review Committee for Hydrothermal studies; for Submission to ISBA – MEA/MoD and Planning Commission	Deployment of Research Vessel- data collection	Sq. km.		10000	2000	5000	2000
		Completion of processing, analysing and interpretation of data collected	Date		31/03/2013	31/03/2014	31/03/2015	31/03/2016	
5	Survey, exploration for Exclusive Economic Zone	Review Committee for EEZ studies	Deployment of Research Vessel- data collection	Sq. km.	80000	80000	150000	100000	100000
		Completion of processing, analysing and interpretation of data collected	Date	31/03/2012		31/03/2014	31/03/2015	31/03/2016	
6	Survey, exploration for CLCS	Ministry of Earth Sciences, Ministry of External Affairs and National Hydrographic Office	Deployment of Research Vessel- data collection	line km.			5000		
		Completion of processing, analysing and interpretation of data	Date			23/03/2014			

Section 6: Outcome/Impact of Department/Ministry

Outcome/Impact of Department/Ministry	Jointly responsible for influencing this outcome / impact with the following department (s) / ministry(ies)	Success Indicator	Unit	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16
		collected						
7 Integrated Ocean Drilling Program (IODP)	Participating Organisations/ Institutions, Participants, Expert Group for coordinating Indian IODP activities	Indian IODP participants meet on the Indian proposal for scientific drilling in the Arabian Sea; Review and submission of the scientific proposal to IODP based on the comments/ observations from external reviewers; Participation of Indian scientists in IODP cruise, Site survey data acquisition.	Date	31/03/2012	31/03/2013	31/03/2014	31/03/2015	
8 Deep Crustal Studies	Research Advisory Committee (RAC) of NCAOR, Goa	Analyses and interpretation of seismic data from Indian Margins including SW margin and Andamans.	Date			31/03/2014		
9 GEOID	Participating Organisations/ Institutions and Expert Group Members	Preparatory studies towards understanding of largest Geoid low on Earth; Desktop study including literature review, Brainstorming meeting.	Date			31/03/2013	31/03/2015	31/03/2016
10 Geosciences Publications	Publications	Publication of results in peer-reviewed journals	Number	2	3	6	8	8