



**Northwest
Pacific
Action Plan**



Distr. GENERAL

UNEP/NOWPAP IG. 11/7/Rev. 1

20 December 2006

Original: English

Eleventh Intergovernmental Meeting of
the Northwest Pacific Action Plan
Moscow, Russian Federation,
20-21 December 2006

General NOWPAP Policy on Data and Information Sharing

Approved by the 11th NOWPAP IGM

General NOWPAP Policy on Data and Information Sharing

Table of Contents

1.	INTRODUCTION	3
2.	BACKGROUND AND OBJECTIVES	3
3.	GENERAL POLICY.....	4
4.	PRESENT STATUS AND UTILIZATION OF THE EXISTING OCEANOGRAPHIC AND METEOROLOGICAL DATA EXCHANGE SYSTEMS.....	5
5.	TASKS OF NOWPAP MEMBERS AND DINRAC	6
6.	REFERENCES	7
	APPENDIX A STATUS OF DATA EXCHANGE POLICY OF IOC	9
	APPENDIX B OVERVIEW OF EXISTING OCEANOGRAPHIC DATA AND INFORMATION EXCHANGE SYSTEMS .	10
	B.1 World Data Centers for Oceanography	10
	B.2 National Oceanographic Data Centers in the IOC/IODE System.....	10
	B.3 WESTPAC (IOC Sub-Commission for the Western Pacific Region).....	11
	B.4 NEAR-GOOS	11

1. Introduction

The Action Plan for the protection, management and development of the marine and coastal environment of the Northwest Pacific Region (NOWPAP) was adopted at the First Intergovernmental Meeting (Seoul, the Republic of Korea, 14 September 1994) by representatives of the People's Republic of China, Japan, the Republic of Korea and Russian Federation (hereafter as NOWPAP Members). The geographical scope for this Action Plan is the marine and coastal zone from about 121°E to 143°E and from approximately 33°N to 52°N (hereafter as NOWPAP Region), without prejudice to the sovereign right of any NOWPAP Members.

The contents of seven priority activities include:

- NOWPAP/1: Establishment of a comprehensive database and information management system;
- NOWPAP/2: Survey of national environment legislation, strategies and policies;
- NOWPAP/3: Establishment of a collaborative, regional monitoring programme;
- NOWPAP/4: Development of effective measures for regional co-operation in marine pollution preparedness and response;
- NOWPAP/5: Commence the establishment of Regional Activity Centers and their network;
- NOWPAP/6: Raising public awareness regarding marine, coastal and associate with freshwater environment;
- NOWPAP/7: Assessment and management of land-based activities.

Four Regional Activity Centers have been established to implement the above NOWPAP activities:

- DINRAC, Beijing: Data and Information Network Regional Activity Centre, to support the implementation of NOWPAP/1;
- POMRAC, Vladivostok: Pollution Monitoring Regional Activity Centre, to support the implementation of NOWPAP/3;
- CEARAC, Toyama: Special Monitoring and Coastal Environmental Assessment Regional Activity Centre, to support the implementation of NOWPAP/3;
- MERRAC, Daejeon: Marine Environmental Emergency Preparedness and Response Regional Activity Centre, to support the implementation of NOWPAP/4.

2. Background and Objectives

The marine and coastal environmental data and information are fundamental for all scientific research projects and management programme. The NOWPAP Members have collected these data and information, and data and information exchange systems have been developed by international organizations such as Intergovernmental Oceanographic Commission (IOC) of UNESCO. In order to improve the marine and coastal environmental data and information exchange among the NOWPAP Members, a policy on data and information sharing is necessary for all NOWPAP activities. A project of

“Establishment of the NOWPAP Policy on Data and Information Sharing” was agreed at the first DINRAC Focal Points Meeting (Shanghai, China, 25-28 November 2002), as one of activities in biennium 2002-2003.

3. General Policy

Cooperation and coordination in data and information sharing among the specialists, researchers, managers, and decision-makers in NOWPAP Members are essential to the success of the NOWPAP programmes. In order to activate and accelerate the marine and coastal environmental data and information exchange and sharing in NOWPAP Members and also non-NOWPAP Members, the following general policy is suggested, based upon the IOC oceanographic data exchange policy, which is highly respected among NOWPAP Members. The IOC data exchange policy was adopted at the Twenty-Second Session of the IOC Assembly (Paris, 24 June – 4 July, 2003). A brief history of the IOC oceanographic data exchange policy adoption is shown in Appendix A.

Preamble

The timely, free and unrestricted international exchange of marine and coastal environmental data is essential for the efficient acquisition, integration and use of ocean observations gathered by the NOWPAP Members for a wide variety of purposes of NOWPAP programmes including the prediction of weather and climate, the operational forecasting of the marine and coastal environment, the preservation of life, the mitigation of human-induced changes on the marine and coastal environment, as well as for the advancement of scientific understanding that makes this possible.

Recognizing the vital importance of these purposes to all humankind and the role of NOWPAP and its programmes in this regard, the NOWPAP Members agree that the following clauses shall frame the NOWPAP policy for the sharing of marine and coastal data and information and its associated metadata.

Clause 1

NOWPAP Members shall provide timely, free and unrestricted access to all data, information, associated metadata and products generated under the auspices of NOWPAP programmes.

Clause 2

NOWPAP Members are encouraged to provide timely, free and unrestricted access to relevant data, information and associated metadata from non-NOWPAP programmes that are essential for application to the preservation of life, beneficial public use and protection of the ocean environment, the forecasting of weather, the operational forecasting of the marine and coastal environment, the monitoring and modeling of climate and sustainable development in the marine and coastal environment.

Clause 3

NOWPAP Members are encouraged to provide timely, free and unrestricted access to the marine and coastal environmental data, information and associated metadata, as referred to in Clauses 1 and 2 above, for non-commercial use by the research and education communities, provided that any products or results of such use shall be published in the open literature without delay or restriction.

Clause 4

With the objective of encouraging the participation of governmental and non-governmental marine and coastal data and information gathering bodies in international marine and coastal environmental data and information exchange and maximizing the contribution of marine and coastal environmental data and information from all sources, this Policy acknowledges the right of NOWPAP Members and data originators to determine the terms of such exchange, in a manner consistent with international conventions, national laws and regulations, where applicable.

Clause 5

NOWPAP Members shall, to the best practicable degree, use data centers linked to IODE's NODC and WDC network as long-term repositories for the marine and coastal environmental data, information and associated metadata. NOWPAP programmes and DINRAC will co-operate with data contributors to ensure that data can be accepted into the appropriate systems and can meet quality requirements.

Definitions

'Free and unrestricted' means non-discriminatory and without charge. "Without charge", in the context of this resolution means at no more than the cost of reproduction and delivery, without charge for the data and products themselves.

'Data' consists of marine and coastal environmental observation data, derived data and gridded fields.

'Metadata' is "data about data" describing the content, quality, condition, and other characteristics of data.

'Non-commercial' means not conducted for profit, cost-recovery or re-sale.

'Timely' in this context means the distribution of data and/or products, sufficiently rapidly to be of value for a given application.

'Product' means a value-added enhancement of data applied to a particular application.

4. Present Status and Utilization of the Existing Oceanographic and Meteorological Data Exchange Systems

For oceanographic data exchange and management, the system of International Oceanographic Data Exchange (IODE) of Intergovernmental Oceanographic Commission (IOC) of UNESCO comprises the World Data Centers (WDC) which have established under the guidance of the International Council of Scientific Unions (ICSU) and the National Oceanographic Data Centers (NODC). All NOWPAP Members constitute the NODC, and also China and Russia constitute WDC for Oceanography. Japan Oceanographic Data Center (JODC) manages the oceanographic data of WESTPAC (IOC Sub-

Commission for the Western Pacific Region) programme as the Responsible National Oceanographic Data Center (RNODC). In fact the oceanographic data exchange and sharing goes into effect among NOWPAP and non-NOWPAP Members for a long time.

The North-East Asian Regional GOOS (NEAR-GOOS) which is implemented by NOWPAP Members, as a regional pilot project of the Global Ocean Observing System (GOOS), provides the oceanographic data through the Internet widely and freely. Overview of existing oceanographic data and information exchange systems are shown in Appendix B.

In addition the meteorological and oceanographic data have been exchanged in real-time under the World Meteorological Organization (WMO). The WMO/IOC Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM) is an intergovernmental body of experts, which provides the international, intergovernmental coordination, regulation and management mechanism for an operational oceanographic and marine meteorological observing, data management and services system. Until the formation of JCOMM in 1999, the coordination of these activities was provided by two separate bodies: the WMO Commission for Marine Meteorology (CMM) and the Joint IOC/WMO Committee for the Integrated Global Ocean Services System (IGOSS). JCOMM is the result of the recognition of the increasing demand for integrated marine meteorological and oceanographic data and services, and the efficiencies that may be achieved by combining the expertise and technological capabilities of the WMO and IOC systems.

In NOWPAP Region, there are already several intergovernmental, regional and domestic systems dealing with oceanographic data and information exchange and sharing. Therefore it is also strongly encouraged to utilize the existing data exchange and sharing policy and systems, in order to facilitate exchange, and activate and accelerate the marine and coastal environmental data and information sharing in NOWPAP Members and also non-NOWPAP Members.

5. Tasks of NOWPAP Members and DINRAC

NOWPAP Members and DINRAC shall carry out their responsibility for the following tasks in order to activate and accelerate the marine and coastal environmental data and information exchange and sharing in NOWPAP Members.

1. NOWPAP Members shall provide all marine and coastal environmental data, information, associated metadata and products under the auspices of NOWPAP programmes to the DINRAC and the relevant Regional Activity Centers, and provide timely, free and unrestricted access to them.
2. NOWPAP Members shall be encouraged to provide timely, free and unrestricted access to all marine and coastal environmental data, information, associated metadata and products from non-NOWPAP programmes that are essential for application to the protection of marine and coastal environment.
3. DINRAC shall be responsible to disseminate free and unrestricted access to all marine and coastal environmental data, information, associated metadata and products which are submitted by NOWPAP Members.
4. DINRAC shall maintain contact with the monitoring programmes of CEARAC and POMRAC, and MERRAC and other relevant NOWPAP activities.

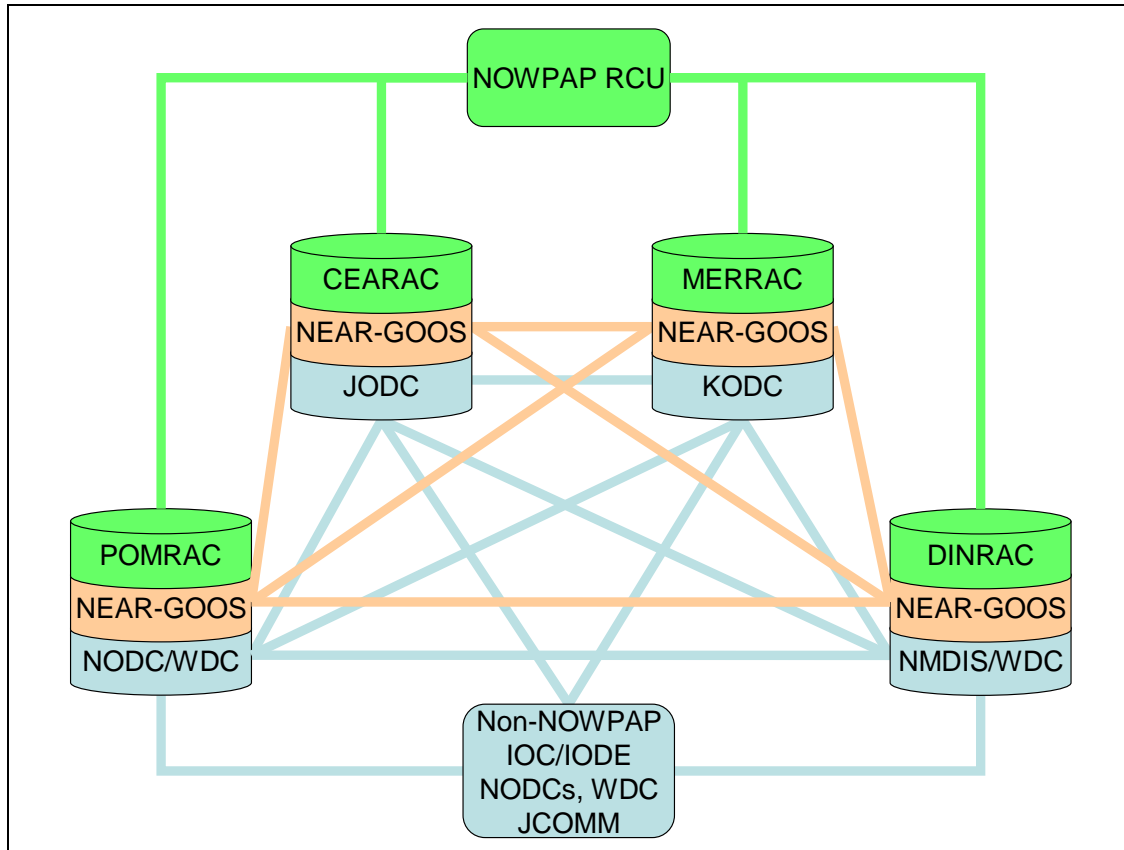


Fig. 1: Schematic view of exchange and sharing of marine and coastal environmental data, information and NOWPAP programmes using existing system.

6. References

- Global Ocean Observing System (GOOS), ioc.unesco.org/goos/
- IOC-XXII Adopts new IOC Oceanographic Data Exchange Policy, ioc.unesco.org/iode/contents.php?id=200
- International Oceanographic Data and Information Exchange (IODE), Intergovernmental Oceanographic Commission (IOC), ioc.unesco.org/iode/
- Japan Oceanographic Data Center (JODC), www.jodc.go.jp
- Joint WMO/IOC Commission for Oceanography and Marine Meteorology (JCOMM), www.wmo.ch/web/aom/marprog/
- North-East Asian Regional Global Ocean Observing System (NEAR-GOOS), ioc.unesco.org/goos/NearGOOS/neargoos.htm
- Proposal for NOWPAP/1 Phase II, 1998, UNEP/IOC/NOWPAP WG.12/2/Rev.1.
- WESTPAC, www.jodc.go.jp/projecct_westpac.html

- World Data Center (WDC), www.ngdc.noaa.gov/wdc/wdcmain.html

Appendix A Status of Data Exchange Policy of IOC

The Second Session of the Intergovernmental Working Group on IOC Oceanographic Data Exchange Policy was held at UNESCO Headquarters, Paris on 17 and 18 June 2002, immediately following the 35th Session of the IOC Executive Council. After short presentations and discussions, the Meeting decided to create a policy statement including a preamble and six clauses:

- Preamble: to outline the fundamental principles;
- Clause 1: statement on exchange related to IOC programmes;
- Clause 2: statement on exchange related to non-IOC programmes;
- Clause 3: statement referring to research and education communities;
- Clause 4: statement on associated rights of the data originators and Member States;
- Clause 5: statement referring to long-term repositories for oceanographic data;
- Clause 6: statement on capacity building.

The Second Session of the Intergovernmental Working Group on IOC Oceanographic Data Exchange Policy agreed on the draft policy.

The above IOC Oceanographic Data Exchange Policy has been discussed since 1961 and adopted at the IOC/IODE-XVII meeting and then at the 22nd session of the IOC Assembly. All IOC regional programmes and projects, such as WESTPAC and NEAR-GOOS, as well as World Data Centers (WDC) and National Oceanographic Data Centers (NODC), follow the IOC Data Exchange Policy.

Appendix B Overview of Existing Oceanographic Data and Information Exchange Systems

B.1 World Data Centers for Oceanography

Scientific data gathering has a long history, but mechanisms for data distribution and exchange are more recent. The first large-scale international scientific enterprises were the International Polar Years of 1882-1883 which eventually led to the International Geophysical Year of 1957-1958. Planning of the IGY was coordinated by CSAGI, the Special Committee for the IGY set up by the International Council for Science. CSAGI established the World Data Center system to serve the IGY, and developed data management plans for each IGY scientific discipline. Because of its success, the WDC system was made permanent and used for post-IGY data.

Over the years the tally of WDCs has changed. A comprehensive set of WDCs was established in China in 1988. The WDC in the U.S.A. has expanded and WDC in Russia is now operated by three different organizations. Some of the WDC centers in Europe and Asia have moved or have closed, but new centers have opened. In 1999, the method of naming WDCs was modified to remove the -A, -B, -C, and -D references. World Data Centers are now referenced by the type of center without reference to the country operating the center, i.e. WDC for Glaciology. If there is more than one WDC for a discipline, the name of the city where the WDC resides is appended, i.e. WDC for Glaciology, Boulder. All centers now have computer facilities and most use electronic networks to meet requests, exchange catalog information and transfer data.

Today the WDC system is healthy and viable. Most centers are maintaining their funding, though not without struggle. Data acquisition, storage and distribution are expensive, WDCs cost money, but they are cost-effective in transferring data to users, and their operational costs represent a tiny fraction of worldwide scientific activity. The ICSU Panel on World Data Centers hopes that this Guide will provide a useful overview of the system.

For NOWPAP Members, there are two WDCs for Oceanography. WDC for Oceanography, Tianjin, China is maintained by State Oceanographic Administration (SOA) collocated with National Oceanographic Data and Information Center and provides many kinds of oceanographic data by magnetic tapes and/or disks.

WDC for Oceanography, Obninsk, Russia is maintained by Federal Service of Russia for Hydrometeorology and Monitoring of the Environment and provides copies of data and information products, information on incoming data; use of library, e-mail, fax and post. Web is available: <http://www.meteo.ru/>.

B.2 National Oceanographic Data Centers in the IOC/IODE System

The IOC was established in UNESCO to increase the knowledge on marine science and marine resources with the aim of promotion of scientific researches through Member States activities. The following recommendations were made at the first General Assembly in 1961 to encourage the system of

International Oceanographic Data Exchange (IODE): (i) to promote data exchange in the framework of World Data Center (WDC) system under the guidance of the International Council of Scientific Unions (ICSU); (ii) to promulgate the concept of Declared National Programmes (DNP) and National Oceanographic Data Center (NODC) as national activities being carried out with the intention to exchange the data; (iii) to standardize the format for international exchange of marine scientific data; (iv) to assist the development of NODC.

The IODE system consists of three WDCs Oceanography; in Silver Spring, Maryland, U.S., in Obninsk, Russia, and in Tianjin, China as core of IODE system. National Oceanographic Data and Information Center, Japan Oceanographic Data Center (JODC; www.jodc.go.jp), Korea Oceanographic Data Center (KODC; www.nfrda.re.kr/kodc/index_e.html) and Oceanographic Data Center of All-Russian Research Institute of Hydrometeorological Information (RIHMI-WDC; www.meteo.ru/index_e.html) established as the National Oceanographic Data Centers in China, Japan, Korea and Russia, respectively, in the IODE system. The RIHMI-WDC also has a Regional Oceanographic Data Center (RODC) in Vladivostok, operated by the Far Eastern Regional Hydrometeorological Research Institute (FERHRI).

B.3 WESTPAC (IOC Sub-Commission for the Western Pacific Region)

The WESTPAC programme started in 1979 with 19 Member States as a semi-permanent project for comprehensive marine research in the western Pacific area. The fields of observation and investigation in this project are physical oceanography, biology, geology, geophysics and pollution.

As the Responsible National Oceanographic Data Center (RNODC) for WESTPAC, the JODC assists the development of the programme by publishing "WESTPAC Data Management Guide". In addition JODC holds a training course on oceanographic data management for the staff of the oceanographic data center in the developing countries in the WESTPAC region.

B.4 NEAR-GOOS

As a regional pilot project of the Global Ocean Observing System (GOOS), the North-East Asian Regional GOOS (NEAR-GOOS) is being implemented by China, Japan, Korea and Russia. NEAR-GOOS is intended to provide a regional framework for gathering and distributing oceanographic data in the North-East Asian region (Fig. 1), almost covered in NOWPAP Region, in enabling participating countries to make better use of their investments in ocean observations and research towards the establishment of the Global Ocean Observing System. Oceanographic data and relevant products generated within NEAR-GOOS system will be open at free cost through electronic communications for various forms of marine uses.

The oceanographic/marine meteorological data in the NEAR-GOOS region are maintained at the Regional Delayed Mode Data Base (RDMDB). The Regional Delayed Mode Data Base receives the data from the Regional Real Time Data Base (RRTDB) 30 days after they are collected. The Regional Delayed Mode Data Base also collects the data/products from the National Delayed Mode Data Bases (NDMDB) except those collected through Regional Real Time Data Base (Fig.2). National Data Bases of NEAR-GOOS are shown in Table 1.

Table 1: National Data Bases of NEAR-GOOS.

	Regional Real Time Data Base (RRTDB)	Regional Delayed Mode Data Base (RDMDB)
China	dell1500sc.nmefc.gov.cn	near-goos.coi.gov.cn
Japan	goos.kishou.go.jp	near-goos1.jodc.go.jp
Korea	near-goos.kordi.re.kr	kodis.nfrdi.re.kr/near_goos
Russia	hydromet.com/project/near-goos	www.pacificinfo.ru/en/near-goos

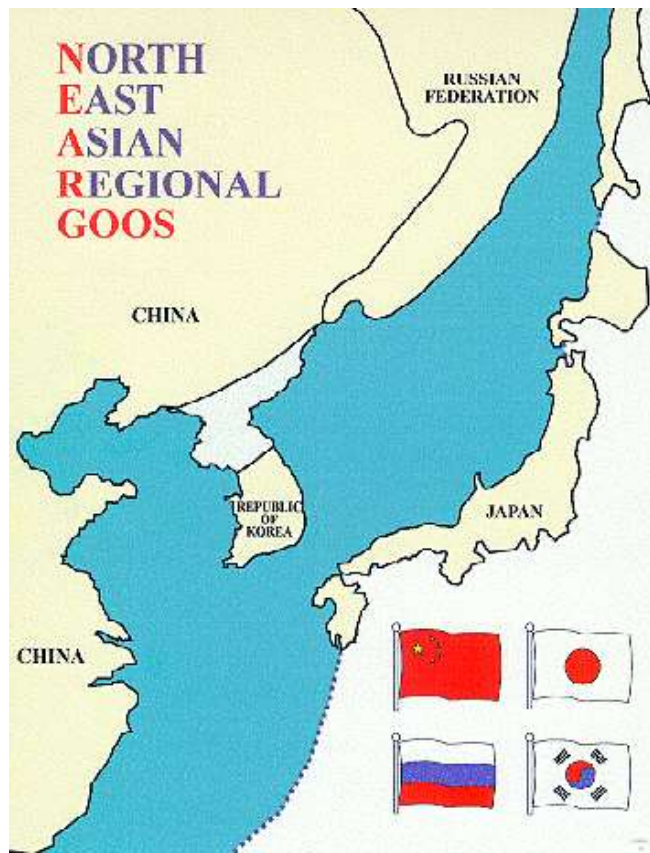
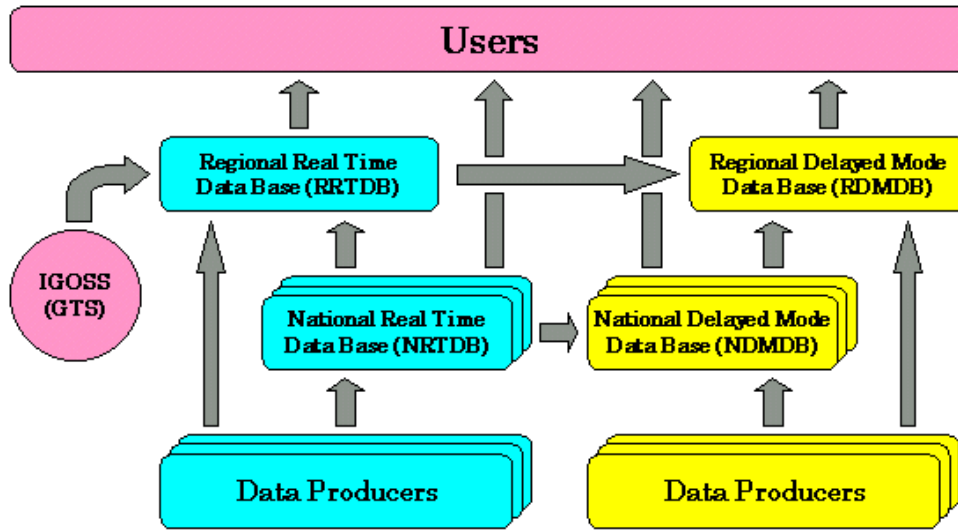


Fig. B1: Map of NEAR-GOOS region and member states.



Data Flow in the NEAR-GOOS Data Exchange System

Fig. B2: Data flow in the NEAR-GOOS Data Exchange System
