

NOWPAP POMRAC



**Northwest Pacific Action Plan
Pollution Monitoring Regional Activity Centre**

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Report of the 1st Meeting of NOWPAP POMRAC Working Group on Integrated Coastal and River Basin Management (ICARM)

Toyama, Japan

10-11 July 2007

NOWPAP POMRAC



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REPORT OF THE 1ST MEETING OF NOWPAP POMRAC WORKING GROUP ON INTEGRATED COASTAL AND RIVER BASIN MANAGEMENT

(TOYAMA, JAPAN, 10-11 JULY 2007)

Background leading to this meeting

1. The Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific Region (NOWPAP) and three Resolutions were adopted at the First Intergovernmental Meeting (Seoul, Republic of Korea, 14 September 1994: UNEP/NOWPAP/IG.1/5). Resolution 1 identified five areas of priority for implementation of the Action Plan, one of which was NOWPAP/3: Establishment of a collaborative, regional monitoring programme.

2. Following the decision of the 3rd NOWPAP Intergovernmental Meeting, the responsibility for NOWPAP/3 (Regional Monitoring Programme) was jointly shared by the Special Monitoring and Coastal Environmental Assessment Regional Activity Center (CEARAC) and the Pollution Monitoring Regional Activity Center (POMRAC) to carry out regional activities.

3. Following the results of discussions at the 10th Intergovernmental Meeting of NOWPAP (Toyama, Japan, 24-26 November 2005), the responsibilities and activities of POMRAC in 2006-2007 should focus on the following items (UNEP/NOWPAP IG.10/5/rev.1):

- Regional Overviews on AD (atmospheric deposition) and RDI (river and direct inputs);
- State of Marine Environment Report (with other RACs);
- Integrated Coastal and River Basin Management;
- Land Based Sources of Pollution (with other RACs).

4. The 4th NOWPAP POMRAC Focal Points Meeting (Qingdao, China, 25-26 April 2006) decided to implement several activities related to Integrated Coastal and River Basin Management in NOWPAP Region in 2006/7 (UNEP/NOWPAP/POMRAC/FPM 4/12 Annex 10), namely:

- to create the Working Group on Integrated Coastal and River Basin Management (ICARM WG),
- to organize the 1st Meeting of ICARM WG,
- to prepare National Reports and Regional Overview on ICARM.

5. Focal Points and Experts of NOWPAP members, namely, People's Republic of China, Japan, Republic of Korea and Russian Federation participated in the 1st Meeting of NOWPAP POMRAC Working Group on Integrated Coastal and River Basin Management. International Consultant, representatives of NOWPAP RCU Toyama office and CEARAC also participated in the Meeting. The full list of participants is attached to the present Report as Annex 1.

Agenda Item 1. Opening of the Meeting

6. The 1st Meeting of NOWPAP POMRAC Working Group on Integrated Coastal and River Basin Management was opened at 9:00 am at the Conference Room in Tower 111 (INTEC Building), Toyama, Japan, 10 July 2007 by the Director of POMRAC, Dr. Anatoly Kachur. He

stressed that Integrated Coastal Area and River Basin Management is a new direction in NOWPAP activities. He expressed his gratitude to CEARAC and RCU for assistance in organization of the Meeting.

7. Dr. Tkalin has followed with his welcoming remarks. He noted that there are a lot of examples of realization of Integrated Coastal Area and River Basin Management programs, i.e. for the Mediterranean Sea or the seas of East Asia (PEMSEA). Positive experience of these programs can be useful for NOWPAP work. He proposed to use worldwide accepted term ICARM instead of ICRBM. The Meeting has agreed on his proposal.

Agenda Item 2. Organization of the Meeting

8. According to the agreed procedure of electing officers on a rotational basis, the Meeting unanimously elected Dr. Shulkin as the Chairperson, and Ms. Wang as the Rapporteur.

Agenda Item 3. Adoption of the Agenda

9. Dr. Kachur introduced to the Meeting participants the List of documents (Annex 2), the Provisional Agenda (Annex 3) and Timetable (Annex 4) for the Meeting. The meeting has adopted the provisional agenda.

Agenda Item 4. Background information about Integrated Coastal and River Basin Management (ICARM) in the NOWPAP region

10. Academician Baklanov has made his presentation on activities aimed at the development and establishment of Integrated Coastal and River Basin Management in the world and NOWPAP Region. He paid attention to principles of ICARM policy, namely: stable development, prevention of harm to natural habitat, taking of preventive measures, restoration of collapsed natural habitat (Appendix 1).

Agenda Item 5. Overview of existing activities, problems and future plans regarding to Integrated Coastal and River Basin Management in NOWPAP Member States

11. National Experts from NOWPAP member states made their presentations on integrated coastal and river basin management in their countries and related problems. The presentations of National Reports are attached as Appendices 2-5.

12. Dr. Tkalin noted that not all presentations contained ICARM information. He also stressed that examples of ICARM in member states should cover NOWPAP region.

Agenda Item 6. Discussion of the Guidance for NOWPAP ICARM Working Group

13. Dr. Kachur has presented the draft Guidance for NOWPAP ICARM Working Group. After discussion, the Meeting decided that the main objectives of the Working Group on Integrated Coastal and River Basin Management will be as follows:

- To collect and compile existing ICARM methodologies being used by NOWPAP member states;
- To prioritize issues related to ICARM activities in NOWPAP member states (including transboundary ones).
- To assist member states in applying efficient ICARM methodologies, including coastal and river basin planning (landscape, urban and marine spatial) and risk management, by disseminating tools and good practices, organizing training courses, etc.

Agenda Item 7. Discussion of Terms of Reference for NOWPAP ICARM Working Group

14. Dr. Kozhenkova has presented draft of Terms of Reference for NOWPAP ICARM Working Group (Annex 5). The meeting has reviewed and adopted the document.

15. The Meeting has decided that the Terms of Reference could be presented for adoption by the 5th NOWPAP POMRAC FPM.

Agenda Item 8. Review of the structure and contents of National Reports for NOWPAP ICARM Working Group

16. Dr. Kachur has presented the draft Structure of National Reports on Integrated Coastal and River Basin Management in NOWPAP region. After discussion, the Meeting approved the Structure of National Report (Annex 6).

17. The meeting also discussed and approved the procedure for preparation of the National Reports for NOWPAP ICARM Working Group. The procedure will be as follows:

- The National Reports will be compiled and written based on the 'Structure and Contents of National Reports' agreed upon by the 1st POMRAC ICARM WG Meeting (Toyama, July 2007).
- The National Reports will be prepared by either POMRAC Focal Points assisted by national experts or directly by national experts. Financial support for the preparation of the National Reports will be provided by POMRAC. The experts will be nominated before 15 August 2007.
- Memoranda of Understanding between POMRAC and nominated experts will be signed before 1 September 2007.
- Draft National Reports will be submitted to POMRAC Secretariat by POMRAC Focal Points after review and approval, no later than 15 October 2007 except Korea presenting the Draft report before 30 October. POMRAC Secretariat will distribute the drafts by e-mail among POMRAC Focal Points and experts. After receiving comments from experts of ICARM WG and POMRAC FPs (within 30 days), the reports will be submitted to POMRAC FPs for review and adoption.
- The 6th POMRAC FPM (May 2008) will discuss and agree whether the National Reports are completed.
- When finalized, the National Reports will be printed as a POMRAC technical report.

Agenda Item 9. Discussion on the Reference Database for ICARM

18. Dr. Kozhenkova has presented the document on ICARM Reference Database. She stressed that two NOWPAP Regional Activity Centers could be involved into preparation of the database, POMRAC and DINRAC, as well as that preliminary agreement between POMRAC and DINRAC on this project already exists. The meeting discussed and agreed the structure and procedure of preparation of the database (Annex 7).

Agenda Item 10. Discussion on the workplan for 2007/8 for NOWPAP ICARM Working Group

19. Dr. Kachur has presented the Draft of the Workplan and Budget for Integrated Coastal and River Basin Management Activities of POMRAC in 2007/8. The meeting reviewed the proposed Workplan. During the discussion, the need of cooperation between RACs was highlighted. It was also noted that long term strategy for NOWPAP ICARM Working Group might be developed after preparation of National Reports and Regional Overview on ICARM in NOWPAP region. Finally, the Workplan and Budget for 2007/8 were adopted (Annex 8).

Agenda Item 11. Other Matters

20. Dr. Kachur informed the Meeting participants that the 5th NOWPAP POMRAC Focal Points Meeting will be tentatively held on 8-9 October 2007 in Vladivostok, Russia. He drew attention of the Focal Points that they should be accompanied by at least one ICARM expert (supported by POMRAC) from each member country.

21. Dr. Tkalin underlined that the future NOWPAP POMRAC Focal Points Meeting is to be held no less than two weeks before the 12th Intergovernmental Meeting of NOWPAP (24-26 October 2007).

Agenda Item 12. Adoption of the report of the meeting

22. The Meeting reviewed and adopted the report of the Meeting prepared by POMRAC secretariat and checked by the Rapporteur.

Agenda Item 13. Closure of the Meeting

23. The Chairperson declared the Meeting closed at 17:20 on Wednesday, 11 July 2007.



Participants of the 1st Meeting of NOWPAP POMRAC Working Group
on Integrated Coastal and River Basin Management

(Toyama, Japan, 10-11 July 2007)

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Annex 1

List of participants of the 1st Meeting of NOWPAP POMRAC Working Group on Integrated Coastal and River Basin Management

Annex 1

List of participants of the 1st Meeting of NOWPAP POMRAC Working Group on Integrated Coastal and River Basin Management

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Annex 2

**List of documents
for the 1st Meeting of NOWPAP POMRAC Working Group
on Integrated Coastal and River Basin Management**

Annex 2

List of documents for the 1st Meeting of NOWPAP POMRAC Working Group on Integrated Coastal and River Basin Management

Provisional Agenda	UNEP/NOWPAP/POMRAC/ICRBM WG 1/1
Annotated Provisional Agenda	UNEP/NOWPAP/POMRAC/ICRBM WG 1/2
Timetable	UNEP/NOWPAP/POMRAC/ICRBM WG 1/3
Background information about Integrated Coastal and River Basin Management (ICRBM) and Draft Guidance for NOWPAP ICRBM Working Group	UNEP/NOWPAP/POMRAC/ICRBM WG 1/4
Draft Terms of reference for NOWPAP POMRAC Working Group - Integrated Coastal and River Basin Management (ICRBM)	UNEP/NOWPAP/POMRAC/ICRBM WG 1/5
DRAFT Structure of National Reports on Integrated Coastal and River Basin Management in NOWPAP Region	UNEP/NOWPAP/POMRAC/ICRBM WG 1/6
DRAFT Reference Database on Integrated Coastal and River Basin Management in NOWPAP Region (ICRBM Reference Database)	UNEP/NOWPAP/POMRAC/ICRBM WG 1/7
DRAFT Workplan and Budget for Integrated Coastal and River Basin Management Activities of POMRAC in 2006/2007 (2008)	UNEP/NOWPAP/POMRAC/ICRBM WG 1/8
Provisional list of participants	UNEP/NOWPAP/POMRAC/ICRBM WG 1/Inf.1

Annex 1. ACTION PLAN for the protection, management and development of the marine and coastal environment of the Northwest Pacific Region

NOWPAP Publication № 1
UNEP, 1997

Annex 2. NOWPAP EVOLUTION: New Directions for the NOWPAP RACs and RCU

UNEP/NOWPAP IG. 10/5/rev. 1

Annex 3. National Report of China Integrated Coastal and River Basin Management in the NOWPAP Region

Annex 4. ICRBM in Japan

Prof. Hiroaki TANAKA, Kyoto University, Graduate School of Engineering, Research Center for Environmental Quality Management

Annex 5. Assessment of Integrated Coastal and River Management and Related Problems in Republic of Korea

Hyun Taik OH, Hee-Gu CHOI, Won-Keun JANG

Annex 6. Conceptual Framework and Planning for integrated coastal area and river basin management

Dr. Ivan ARZAMASTSEV

Annex 3

Provisional Agenda

Annex 3

Provisional Agenda

Day 1 (July 10, 2007)

1. Opening of the Meeting
2. Organization of the meeting
3. Adoption of the Agenda
4. Background information about Integrated Coastal and River Basin Management (ICARM) in the Northwest Pacific Region
5. Overview of existing activities, problems and future plans regarding to Integrated Coastal and River Basin Management in NOWPAP Member States
 - 5.1. Report of National Expert of China
 - 5.2. Report of National Expert of Japan
 - 5.3. Report of National Expert of Republic of Korea
 - 5.4. Report of National Expert of Russian Federation
6. Discussion of the Guidance for NOWPAP ICARM Working Group
7. Discussion of the Terms of the References for NOWPAP ICARM Working Group

Day 2 (July 11, 2007)

8. Review of the structure and content of National Reports for NOWPAP ICARM Working Group
9. Discussion on the Reference Database for ICARM
10. Discussion on the workplan for 2007/8 and on long term strategy for NOWPAP ICARM Working Group
11. Other matters
12. Adoption of the report of the meeting
13. Closure of the meeting

Annex 4
Timetable

Annex 4

Timetable

Day 1 (July 10, 2007)

8:45 – 9:00 Registration

9:00 – 9:15 Agenda Item 1. Opening of the Meeting

9:15 – 9:30 Agenda Item 2. Organization of the Meeting

9:30 – 9:40 Agenda Item 3. Adoption of the Agenda

9:40 – 10:00 Agenda Item 4. Background information about Integrated Coastal and River Basin Management (ICARM) in the Northwest Pacific Region

10:00 – 10:20 (Coffee Break) (Group Photograph)

10:20 – 12:30 Agenda Item 5. Overview of existing activities, problems and future plans regarding to Integrated Coastal and River Basin Management in NOWPAP Member States

10:20 – 10:50 5.1. Report of National Expert of China

10:50 – 11:20 5.2. Report of National Expert of Japan

11:20 – 11:30 (Coffee Break)

11:30 – 12:00 5.3. Report of National Expert of Republic of Korea

12:00 – 12:30 5.4. Report of National Expert of Russian Federation

12:30 – 14:00 Lunch Break

14:00 – 15:45 Agenda Item 6. Discussion of the Guidance for NOWPAP ICARM Working Group

15:45 – 16:00 (Coffee Break)

16:00 – 17:00 **Agenda Item 7. Discussion of the Terms of the References for NOWPAP ICARM Working Group**

18:30 – 20:30 *Reception party*
Intec Building, the 4th floor, Sui-ho room

Day 2 (July 11, 2007)

9:00 – 10:20 **Agenda Item 8. Review of the structure and content of National Reports for NOWPAP ICARM Working Group**

10:20 – 11:00 **Agenda Item 9. Discussion on the Reference Database for ICARM**

11:00 – 11:15 (Coffee Break)

11:15 – 12:20 **Agenda Item 10. Discussion on the workplan for 2007/8 and on long term strategy for NOWPAP ICARM Working Group**

12:20 – 12:30 **Agenda Item 11. Other Matters**

12:30 – 16:00 Lunch Break
Preparation of the meeting report by the Secretariat

16:00 – 17:30 **Agenda Item 12. Adoption of the report of the meeting**

17:30 **Agenda Item 13. Closure of the Meeting**

Annex 5

**TERMS OF REFERENCE
FOR NOWPAP POMRAC WORKING GROUP ON
INTEGRATED COASTAL AND RIVER BASIN MANAGEMENT
(ICARM)**

Annex 5

TERMS OF REFERENCE FOR NOWPAP POMRAC WORKING GROUP ON INTEGRATED COASTAL AND RIVER BASIN MANAGEMENT (ICARM)

Background

In 1994, when the *Action Plan for the protection, management and development of the marine and coastal environment of the Northwest Pacific region* was adopted, it was acknowledging that the overall goal of the Northwest Pacific Action Plan is “The wise use, development and management of the coastal and marine environment so as to obtain the utmost long-term benefits for the human populations of the region, while protecting human health, ecological integrity and the region's sustainability for future generations” (NOWPAP publication № 1, UNEP 1997).

The strategy for wise management of the Northwest Pacific coastal and marine environment should consist of 5 main elements:

- monitoring and assessment of the environmental condition
- creation of an efficient and effective information base
- integrated coastal area planning
- integrated coastal area management
- establishment of a collaborative and cooperative framework

The 10th Intergovernmental Meeting of NOWPAP (Toyama, Japan, 24-26 November 2005), have decided that POMRAC should focus on activities related to Integrated Coastal and River Basin Management which includes land-based sources of pollution. All activities related to Integrated Coastal and River Basin Management will be implemented in close collaboration with all NOWPAP RACs (document UNEP/NOWPAP IG.10/5/rev.1).

The 4th NOWPAP POMRAC Focal Points Meeting (Qingdao, China, 25-26 April 2006) decided to implement several activities in 2006/7 (UNEP/NOWPAP/POMRAC/FPM 4/12 Annex 10) namely:

- to create the Working Group for Integrated Coastal and River Basin Management (ICARM WG),
- to organize the 1st Meeting of ICARM WG,
- to prepare National Reports and Regional Overview on ICARM.

Goal and Objectives

The main goal of the NOWPAP Working Group for Integrated Coastal and River Basin Management (NOWPAP ICARM WG) is to contribute to developing strategy for integrated coastal and river basin management in NOWPAP region.

The main objectives of ICARM WG are:

- (a) Exchange information to ensure practical implementation of activities related to the Integrated Coastal and River Basin Management in the NOWPAP region.
- (b) Promote, coordinate and harmonize regional cooperation in the NOWPAP region related to the Integrated Coastal and River Basin Management.

Functions

The functions of ICARM WG are to:

- Identify and carry out the cooperative actions in the NOWPAP region related to the Integrated Coastal and River Basin Management.
- Promote information exchange and technical cooperation, including education, training and technology transfer in the fields related to the Integrated Coastal and River Basin Management.
- Review ongoing regional and national activities and advise POMRAC on necessary follow-up actions related to the Integrated Coastal and River Basin Management.
- Advise POMRAC on necessary activities related to the goals and objectives of NOWPAP in the field of Integrated Coastal and River Basin Management.

Participation

Each NOWPAP Member will nominate its representatives to ICARM WG. The Working Group will be composed two experts from each NOWPAP Member.

Other relevant international or/and regional or/and national organizations dealing with Integrated Coastal and River Basin Management in the NOWPAP region may be invited to participate in the work of ICARM WG as observers or consultants.

Activities

To achieve the main objectives of the Working Group for Integrated Coastal and River Basin Management, the following activities will be carried out:

- Collect and compile existing ICARM methodologies being used by NOWPAP member states;
- Prioritize issues related to ICARM activities in NOWPAP member states (including transboundary ones).
- Assist member states in applying efficient ICARM methodologies, including coastal and river basin planning (landscape, urban and marine spatial) and risk management, by disseminating tools and good practices, organizing training courses, etc.

Procedures

Meetings of the Working Group for ICARM will be held as requested by the POMRAC Focal Points Meeting. The POMRAC Focal Points Meeting will discuss the needs and timing of the meeting.

The Working Group for ICARM shall adopt, mutates mutandis, the rules of procedures of the UNEP Governing Council.

The Chairperson for each meeting will be elected by the Working Group for ICARM on a rotational basis. The Chairperson will continue to serve as the chairperson of ICARM WG during the intersessional period, until a new chair is elected in the following meeting.

The Working Group for ICARM will try to achieve decisions by consensus. Lack of consensus will be reported to the next POMRAC Focal Points Meeting.

The Working Group for ICARM will advise, when necessary, to the POMRAC Focal Points Meeting on amendments to the present Terms of Reference for ICARM WG.

The Working Group for ICARM will consider and adopt a report at each of their session. The reports will be circulated to all participants in the meeting. The director of POMRAC will present the reports to the POMRAC Focal Points Meeting.

POMRAC will act as the secretariat for ICARM WG.

Budget and Expenses

The ICARM WG activities will be supported by the NOWPAP Trust Fund through POMRAC budget. Other external funds should also be sought in accordance with the development of POMRAC activities.

Language

The working language of the ICARM WG will be English. The host country of each of the meeting sessions may interpret English into the language of the host country.

Annex 6

STRUCTURE OF NATIONAL REPORTS ON INTEGRATED COASTAL AND RIVER BASIN MANAGEMENT IN THE NOWPAP REGION

Annex 6

STRUCTURE OF NATIONAL REPORTS ON INTEGRATED COASTAL AND RIVER BASIN MANAGEMENT IN THE NOWPAP REGION

Executive Summary

Introduction

Brief introduction of Integrated Coastal and River Basin Management in the country.
Importance of ICARM procedures for the country and necessary ICARM strategy in the country.

Geographical scope of relevant region of NOWPAP area (geographical coverage of the report, major rivers, coasts, mountains, cities, climate, physical geography, etc.).

Institutional arrangements for developing these reports (who prepared this report).

Part I. Assessment of present social, environmental and economic situation (e.g., 2005), revealing conditioning reasons and factors including the historical review for the last 5 or 10 years (population, distribution of communities, anthropogenic activities which cause inputs of contaminants to river basins and coastal zones). Brief information on natural resources and environmental impacts from different sectors of economy (e.g., industry, agriculture, aquaculture, transport, tourism).

Part II. Experience of ICARM planning and implementation in the country

Analysis of situation in the country (mostly on the territory related to NOWPAP region), identification of existing ICARM issues. Examples of existing schemes of land-use management (or functional zoning) in coastal areas and river basins. Causal Chain Analysis of environmental problems.

National priorities and alternatives of problem solving.

Major scientific and/or administrative programs, actors/organizations, institutional framework, regular or irregular activities/projects, etc.

Singling out international (transboundary) issues, priorities and alternatives of problem solving.

Part III. Overviews of national policies and laws related to ICARM

Part IV. Training activities and programs related to ICARM

Conclusions (including proposals for future national and regional ICARM-related activities and priorities in NOWPAP region, if any)

References (publications, websites and other information sources)

[Format of chapters, sample tables and figures will be prepared by POMRAC Secretariat]

Annex 7

REFERENCE DATABASE ON INTEGRATED COASTAL AND RIVER BASIN MANAGEMENT IN NOWPAP REGION (ICARM REFERENCE DATABASE)

Annex 7

REFERENCE DATABASE ON INTEGRATED COASTAL AND RIVER BASIN MANAGEMENT IN NOWPAP REGION (ICARM REFERENCE DATABASE)

Background

According to decision of the 4th NOWPAP POMRAC Focal Points Meeting (Qingdao, China, 25-26 April 2006) POMRAC should implement several activities on Integrated Coastal and River Basin Management in NOWPAP Region in 2006/7 (UNEP/NOWPAP/POMRAC/FPM 4/12 Annex 10).

Reference Database on Integrated Coastal and River Basin Management in NOWPAP Region (ICARM Reference Database) is established in accordance with POMRAC Secretariat proposal and approved at the First Meeting of NOWPAP Working Group for Integrated Coastal and River Basin Management (ICARM WG) for improving information exchange related to integrated management of coastal areas and river basins in North-West Pacific.

This database would comprise data on articles, scientific reports, databases and Internet resources concerning sustainable development of coastal zones and river basins in NOWPAP Region. Thus, the database will improve coordination and harmonization of regional cooperation for environmental management "...which includes cooperative training in assessment methodologies, ecosystem management, control of wastes from industrial, agricultural and domestic sources, and the formulation of contingency plans for dealing with pollution emergencies" (NOWPAP publication № 1, UNEP 1997).

Foundation of ICARM Reference Database project

POMRAC and DINRAC are supposed to collaborate in ICARM Reference Database foundation. The basic function of Data and Information Network Regional Activity Center (DINRAC) is "...exchange information on marine and coastal environmental data and information management in the NOWPAP region..." (UNEP/NOWPAP/DINRAC/FPM 2/15, Annex 6).

During the 6th NOWPAP DINRAC Focal Points Meeting (Beijing, China, 24-25 May 2007) POMRAC Secretariat together with Director of DINRAC Mr. Jianguo WANG discussed possibility of cooperation between the two RACs on implementation of the project and received approval of DINRAC interest in continuation of mutual work with POMRAC, which began in 2006 and comprised preparation of AD and RDI Reference Databases (UNEP/NOWPAP/POMRAC/FPM 4/12, Annex 10; UNEP/NOWPAP/DINRAC/FPM 6/14).

In the end of July 2007, POMRAC Secretariat will offer DINRAC to collaborate in ICARM Reference Database foundation. In case of agreement, the duties will be allotted as follows: POMRAC will provide for obtaining reference data and present the data to DINRAC; DINRAC, in consequence, will develop electronic database for its hosting in Internet. The database will be available through both POMRAC and DINRAC web-sites.

In case of DINRAC impossibility to participate in the project, POMRAC will discuss other variants for its realization.

To realize the project, POMRAC Secretariat suggests approving supplementary budget for Establishment of ICARM Reference Database of US\$ 2000, each National Expert of the four countries to be remunerated with US\$ 500.

Filling ICARM Reference Database

1. ICARM Reference Database filling will be conducted by National Experts nominated by POMRAC Focal Points. Financial support for ICARM Reference Database filling will be provided by POMRAC, according to guidance of POMRAC FPs.
2. National Experts will provide data for ICARM Reference Database (not less than 100 references) considering following recommendations:
 - Each reference should be categorized by type of publication into the following items:
 - a) Monograph
 - b) Article
 - c) Internet resource
 - Each reference should be categorized by headings into the following items:
 - 1) Integrated Coastal Area Management in NOWPAP Member States
 - 2) Integrated River Basin Management in NOWPAP Member States
 - 3) Definite stages of planning and management of coastal zones and river basins in NOWPAP Member States
 - 3.1) Resource management
 - 3.1.1) Management of fishery resources
 - 3.1.2) Management of recreational resources
 - 3.1.3) Preservation of biodiversity
 - 3.2) Environmental management
 - 3.2.1) management of urbanization
 - 3.2.2) management of input of pollutants into the environment from industrial, agricultural and domestic sources
 - 3.2.3) physical alteration and destruction of coastal habitats
 - 3.3) Land use planning of:
 - coastal zone,
 - aquatory,
 - river basin.
 - Each reference on monograph or article should contain the following:
 - a) Author(s)
 - b) Name of publication
 - c) Journal/monograph
 - d) Year of publishing
 - e) Language of the publication
 - f) e-mail or postal address of author (s) or website (*if possible*)
 - g) Location of study area
 - h) Key words

- Each reference **on Internet resource** should contain the following:
 - a) Name of resource
 - b) Author(s) (*if possible*)
 - c) Website
 - d) Language of the publication
 - e) Location of study area
 - f) Key words

Table. Example of reference data presentation

Country	Type of publication	Heading	Reference	Language of the publication	Key words	Location of study area	E-mail or postal address of author (s) or website (for monographs or articles)
Russia	Monograph	3.3) Land use planning of coastal zone	Nature management in coastal areas: (management issues in Russian Far East) / P.Ya. Baklanov, I.S. Arzamastsev et al., Vladivostok: Dalnauka, 2003. 251 p.	In Russian	Zoning, regionalization, land registry, resources, social and economic development, ecosystem	Coastal areas of seas of Russian Far East: Japan/East Sea, Sea of Okhotsk, Bering Sea	BAKLANOV Petr: pbaklanov@tig.dvo.ru ARZAMASTSEV Ivan: arz@tig.dvo.ru
Russia	Article	3.1.1) Fishery resources management	Arzamastsev I.S., Bykova S.V. Mariculture in Primorsky krai // Fishery, 2002, №4, P. 48-50.	In Russian	Problems of mariculture development	Primorsky krai, Russia	ARZAMASTSEV Ivan: arz@tig.dvo.ru
Russia	Internet resource	3.1.3) Preservation of biodiversity	Aspects of sustained management of TRED A area (of Russia). Section 6. Modern state, key issues and main trends in marine biota preservation (Analytic report) / http://www.imb.dvo.ru/misc/trdap/doc005.htm	In Russian	Monitoring of marine biota diversity, influence of economic activities, poaching	Tumen River basin and adjoining marine area, south of Primorsky krai, Russia	

Annex 8

**WORKPLAN AND BUDGET
FOR INTEGRATED COASTAL AND RIVER BASIN MANAGEMENT
ACTIVITIES OF POMRAC IN 2007/2008**

Annex 8

WORKPLAN AND BUDGET FOR INTEGRATED COASTAL AND RIVER BASIN MANAGEMENT ACTIVITIES OF POMRAC IN 2007/2008

1. Introduction

The 10th Intergovernmental Meeting of NOWPAP (Toyama, Japan, 24-26 November 2005), have decided that POMRAC should focus on activities related to Integrated Coastal and River Basin Management which includes land-based sources of pollution. All activities related to Integrated Coastal and River Basin Management will be implemented in close collaboration with all NOWPAP RACs (document UNEP/NOWPAP IG.10/5/rev.1).

The 4th NOWPAP POMRAC Focal Points Meeting (Qingdao, China, 25-26 April 2006) decided to implement several activities in 2006/7 (UNEP/NOWPAP/POMRAC/FPM 4/12 Annex 10) namely:

- to create the Working Group for Integrated Coastal and River Basin Management (ICARM WG),
- to organize the 1st Meeting of ICARM WG,
- to prepare National Reports and Regional Overview on ICARM.

2. Main activities for 2006/2007 (2008)

POMRAC plans to implement several activities in 2006/2007 (2008):

- to create the ICARM WG (2006),
- to organize the 1st Meeting of ICARM WG (2007),
- to prepare the National Reports and Regional Overview (ICARM WG) (2007/2008),
- to develop the reference database for ICARM WG (together with DINRAC) (2007/2008).

1) The First Meeting of ICARM WG

The First Meeting of ICARM WG was held during 10–11 July 2007 in Toyama, Japan.

The major objectives of this meeting will be the following:

- ✓ Overview of existing activities, problems and future plans regarding to Integrated Coastal and River Basin Management in NOWPAP Member States.
- ✓ Discussion of the Guidance for NOWPAP ICARM Working Group.
- ✓ Discussion of the Terms of the References for NOWPAP ICARM Working Group.
- ✓ Review and discussion of the structure and contents of National Reports for NOWPAP ICARM Working Group.
- ✓ Discussion of the structure and contents of reference database for ICARM WG.
- ✓ Discussion of the workplan for Integrated Coastal and River Basin Management Activities of POMRAC in 2007/2008 and preliminary strategy for NOWPAP ICARM Working Group for 2008/2009.

Budget of the First Meeting of ICARM: US\$ 23,535

2) Preparation of the National Reports and Regional Overview for NOWPAP ICARM Working Group

The procedure for preparation of the National Reports and Regional Overview for NOWPAP ICARM Working Group would be as follows:

- The National Reports will be compiled and written based on the 'Structure and Contents of National Reports' agreed upon by the 1st POMRAC ICARM WG (Toyama, 10-11 July 2007).
- The National Reports will be prepared by either the POMRAC Focal Points assisted by National Experts, or directly by National Experts. Financial support for the preparation of the National Reports will be provided by POMRAC.
- Memorandums of Understanding between POMRAC and nominated Experts will be signed before 1 September 2007.
- Draft National Reports will be submitted to POMRAC Secretariat by POMRAC Focal Points after review and approval, no later than 15 October 2007 (30 October for expert from ROK). POMRAC Secretariat will distribute the drafts of NR by e-mail among POMRAC FP's, experts, RACs and RCU. After receiving comments from POMRAC FP's, Experts of ICARM WG and NOWPAP RACs, RCU (within 30 days), the reports will be finalized by authors and submitted to POMRAC FPs for review and adoption.
- The 6th POMRAC FPM (May 2008) will discuss and agree whether the National Reports and draft of Regional Overview.
- When finalized, the National Reports and Regional Overview will be printed as a POMRAC technical report.

Budget of Preparation of National Reports (NRs) and Regional Overview: US\$ 28,000
(20,000 for national experts for preparation of NRs, 5,000 for international consultant for preparation of Regional Overview and 3,000 for printing).

3) Development of reference database for ICARM WG (together with DINRAC)

Reference Database for Integrated Coastal and River Basin Management Working Group (ICARM Reference Database) will be established in accordance with POMRAC Secretariat proposals. Structure and contents of Reference Database will be approved at the First Meeting of NOWPAP ICARM WG (10-11 July 2007, Toyama, Japan).

The procedure for preparation of the Reference Database would be as follows:

- A special MoU/Agreement on the database development will be signed between POMRAC and DINRAC.
- POMRAC Focal Points will nominate Experts, and MOUs on preparation of Lists of References for ICARM Reference Database between POMRAC and Experts will be signed.
- POMRAC experts will prepare the list of references according to the adopted format. POMRAC Secretariat will send it to DINRAC Secretariat.
- DINRAC Experts will prepare Reference Database. It will be uploaded to the DINRAC website and will be linked/copied to POMRAC website. For wider distribution, this Reference Database could be published on CDROM with introductory pamphlet.

Time schedule: throughout 2007/2008

Budget: 2,000 US\$ (500 US\$ for POMRAC expert from each NOWPAP country).

Table

Workplan and Budget for 2007/2008

Activity	Actions and planned date	Responsibility	Remarks	Budget US\$
The 1 st Meeting of ICARM WG	July 2007	POMRAC with assistance of NOWPAP RCU, UNEP	Toyama, Japan	23,535
Preparation of National Reports for ICARM WG	July–October 2007	National Experts from each NOWPAP Member States	\$5,000 for experts	20,000
Preparation of Regional Overview for ICARM	November - December 2007	POMRAC with assistance of UNEP and RCU	through regional consultant	5,000
Publication of National Reports and Regional Overview for ICARM WG	February 2008	POMRAC		3,000*
Development of reference database for ICARM WG (with assistance of DINRAC)	Throughout 2007/8	POMRAC through national experts from NOWPAP Member States		2,000*
Total				53,535

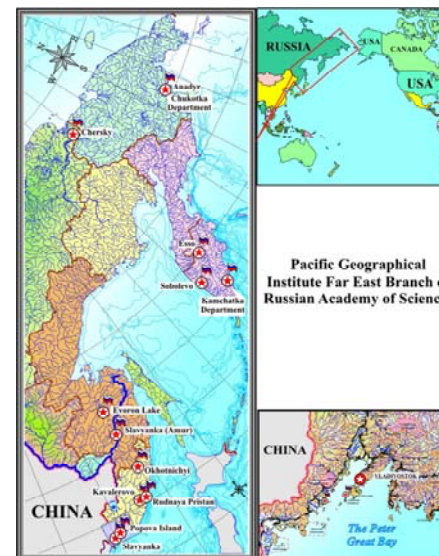
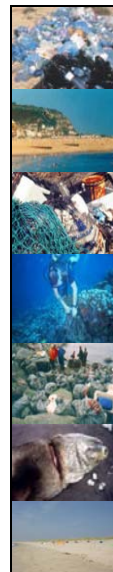
* from Budget of 2008/9 biennium.

Appendix I

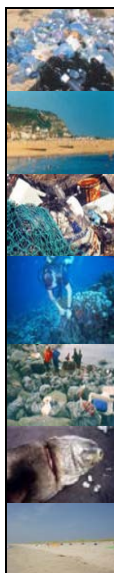
Background Information about Integrated Coastal and River Basin Management

P.Ya. BAKLANOV

***P.Ya. Baklanov
Pacific Geographical Institute,
Far Eastern Branch of RAS,
Vladivostok, 2007***



is determined as
“sustained development in economic, social and environmental spheres of coastal areas in connection with proximity (presence) of sea, at preservation of landscapes, biological and environmental balance in coastal areas for present and future generations”



2.5

•Significant results in ICARM development have been achieved since the end of 1960-s in many economically developed countries of the world (USA, Great Britain, Australia, New Zealand, France, etc.). In these countries:

- Problems of natural management in coastal zones of the sea are in the focus of public attention,
- Flexible governmental system allows to conduct fast and essential changes for increase of ICARM efficiency,
- Wide range of social institutions actively participates in ICARM. It provides positive relation of the population to accepted measures and observance of rules of natural management established for coastal zones.



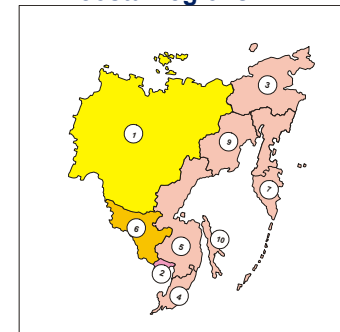
	Stages of ICARM: 1. Inventorying: gathering and structurization of data, dividing into districts and zoning of territories and water areas. 2. Organization: legal maintenance of ICARM/creation of organizational structures of ICARM implementation/development of interrelated programs on natural management, nature preservation and social and economic development. 3. Implementation: performance of programs and projects. 4. Organization and carrying out of monitoring. 5	Principles of ICARM policy: ▪ Stable development, ▪ Prevention of harm to natural habitat, ▪ Taking of preventive measures, ▪ Restoration of collapsed natural habitat 6
	The Model law bases on: - The convention of the United Nations on law of sea of 1982, - Ramsar convention of 1971, - MARPOL convention of 73/78, - A number of regional agreements on protection of marine environment, - Considers statements of Chapter 17 of the Agenda XXI on cooperation of the states in preparation of national principles of complex management 7	Principles of coastal area development under the Model law: Equal distribution and sustainable development of commonly used resources, Development of remote areas, Protection of ecologically fragile areas; the ecosystems which are being under threat; and also habitats and species, Compatibility of various kinds of coastal area management, Priority in development of activities dependent on coastal areas, Unlimited access to shore. 8

Such ICARM includes:

- 1. Allocation of coastal areas
- 2. Inventory of natural conditions, resources, and infrastructure. Revealing of environmental restrictions.
- 3. Functional zoning of territories and water areas.
- 4. Development of a sustainable development model.
- 5. The complex estimation of investment projects.
- 6. The organization of monitoring.

For development ICAM for mouth's coastal zones of the small and middle rivers to carry out jobs on integrated River Basin Management (IRBM) for basins of these rivers.

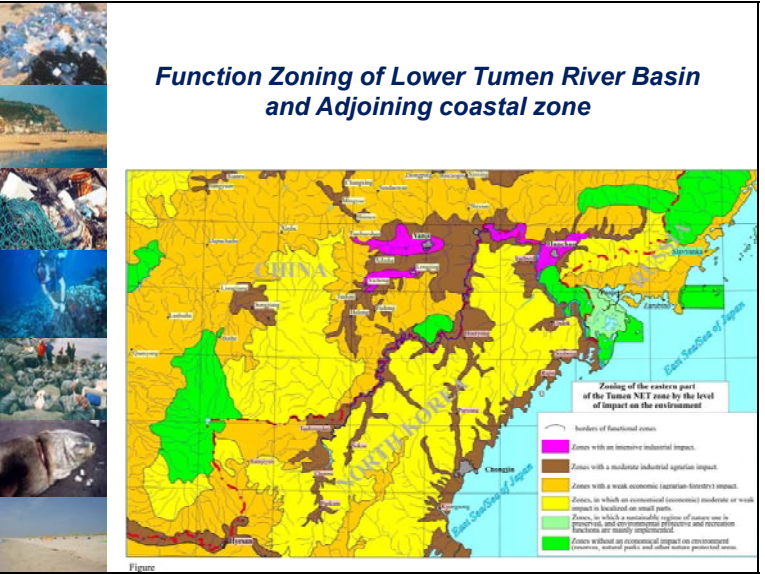
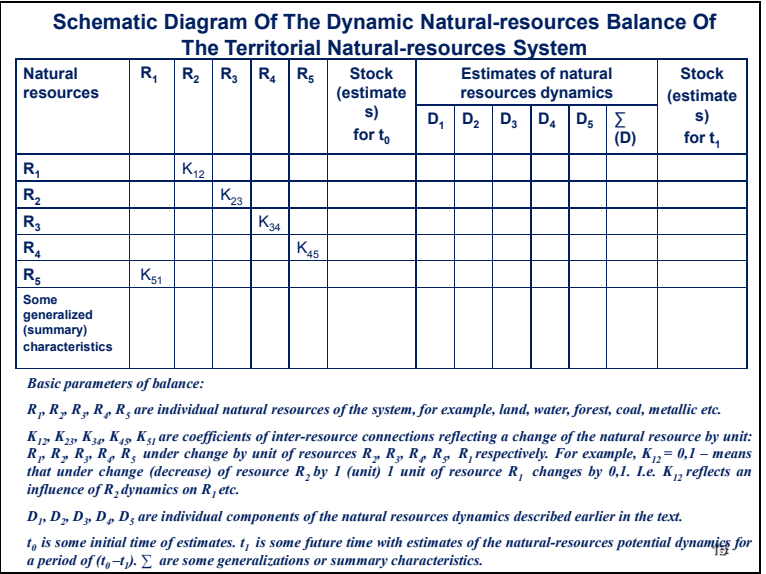
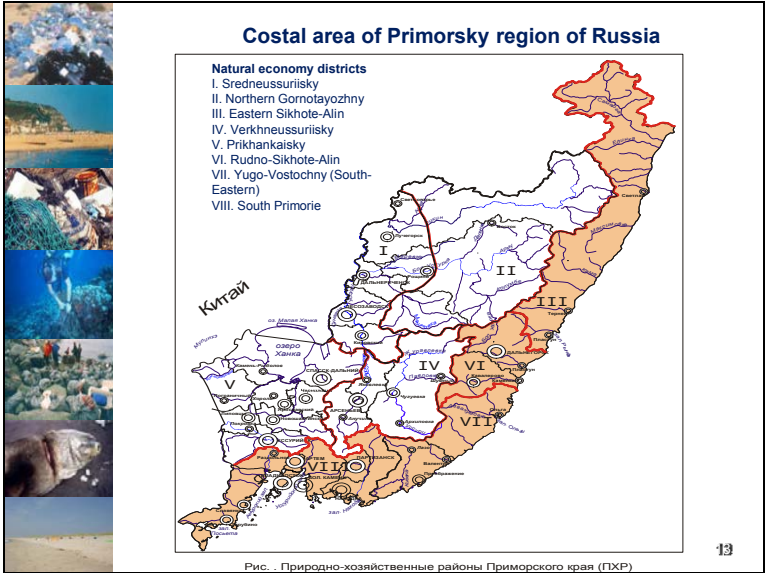
Far East of Russia coastal regions

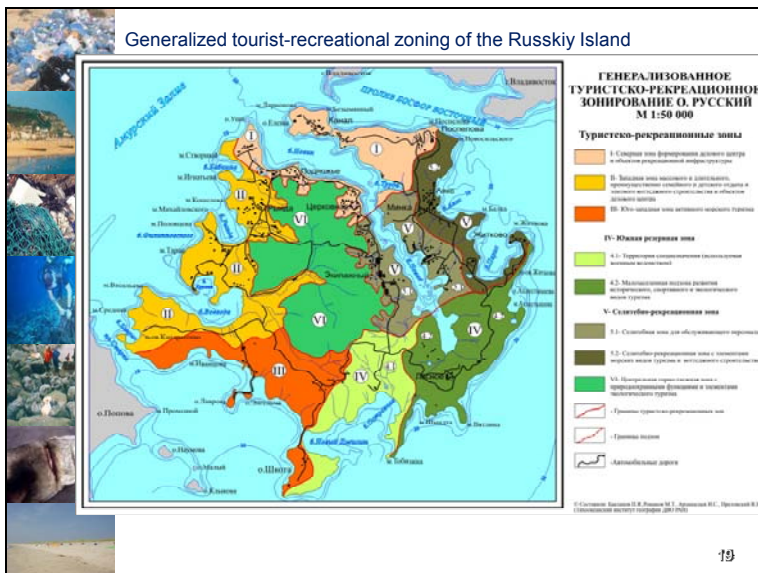
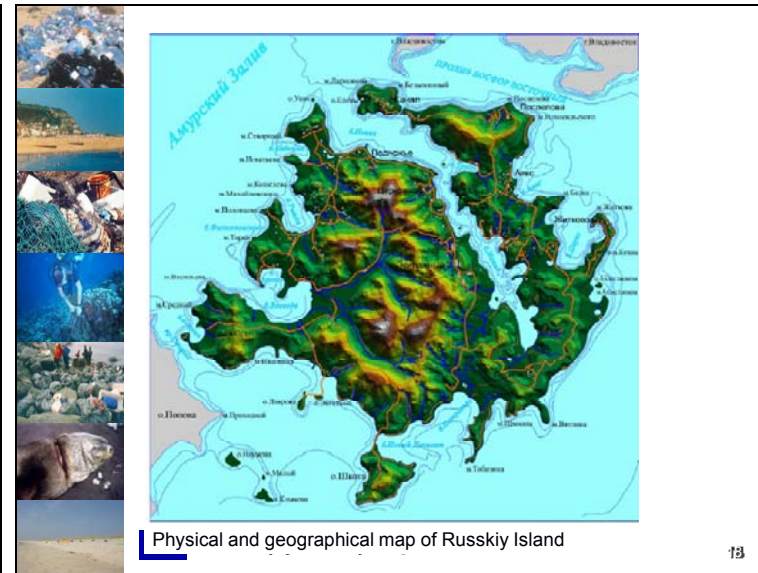
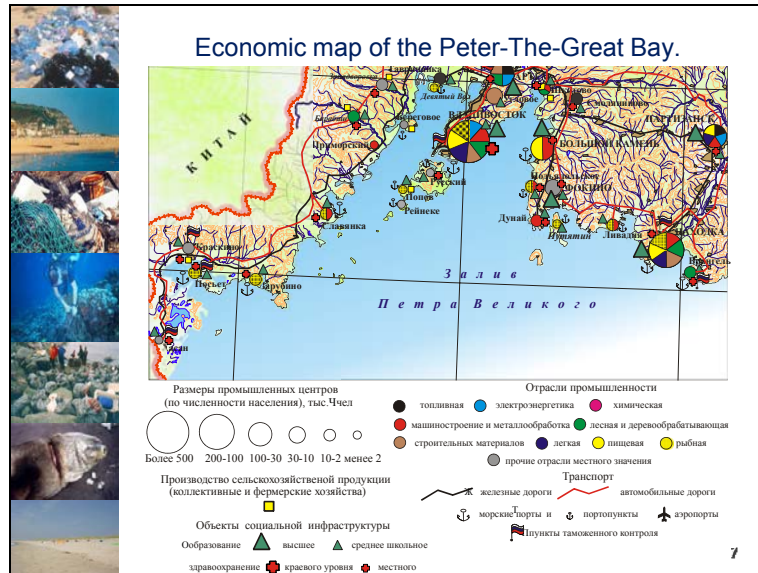


Existing administrative territorial division of Russian Far East

Regions of Far East:

- | | |
|----------------------------------|----------------------------|
| 1 – Republic of Sakha (Yakutia) | 6 – The Amur Region |
| 2 – the Jewish Autonomous Region | 7 – The Kamchatka Region |
| 3 – Chukotka Autonomous Area | 8 – Koryak Autonomous Area |
| 4 – Primorsky krai | 9 – the Magadan Region |
| 5 – Khabarovsk krai | 10 – the Sakhalin Region |





THE PROBLEMS DEMANDING DEVELOPMENT ON ICARM SUBJECTS

Development of principles of sustained development for application to real natural and socio-economic conditions of regional coastal areas

Insufficiency of funds for realization of ICARM programs. Involvement of individual entrepreneurship.

Absence of a national agency for drawing up cadastre of coastal-marine territories and water areas

Many ICARM aspects and programs in the region have transboundary nature. These are TUMANGAN program (between Russian Federation, China, Korea, and Mongolia), BERINGIA (Russia, Canada and the USA), exploitation of Sakhalin shelf (Russia, Japan, etc.).



Appendix II

National Report of China

Integrated Coastal and River Basin Management in the NOWPAP Region

National Report of China

Integrated Coastal and River Basin Management
in the NOWPAP Region

July 2007

Table of Contents

Part I Geographical scope of NOWPAP region in China

Part II National programs

Part III Present situation

Part IV National policies and laws

Part V Conclusion

Part VI Some proposals

Part I Geographical scope of NOWPAP region in China

- The Chinese marine parts in NOWPAP mainly refer to the Yellow Sea, belonging to Liaoning, Shandong and Jiangsu three Provinces.
- The terrestrial parts include Heilongjiang, Jilin, Liaoning, Jiangsu, and Shandong five provinces.
- The total land surface area of the basin and the total length of the coastline is about 1,004,000km² and 6054 km, respectively.
- The regional area accounts for 10.8% of the entire area of China.
- There are 3 parts of basins in National Water Resources' First Zones, Songhua River, Liaohe River and Haihe River basins.

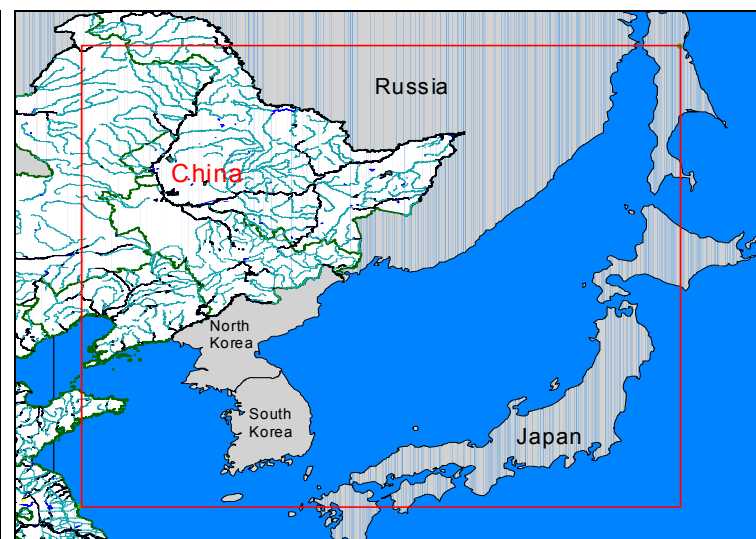


Fig. 1 NOWPAP region

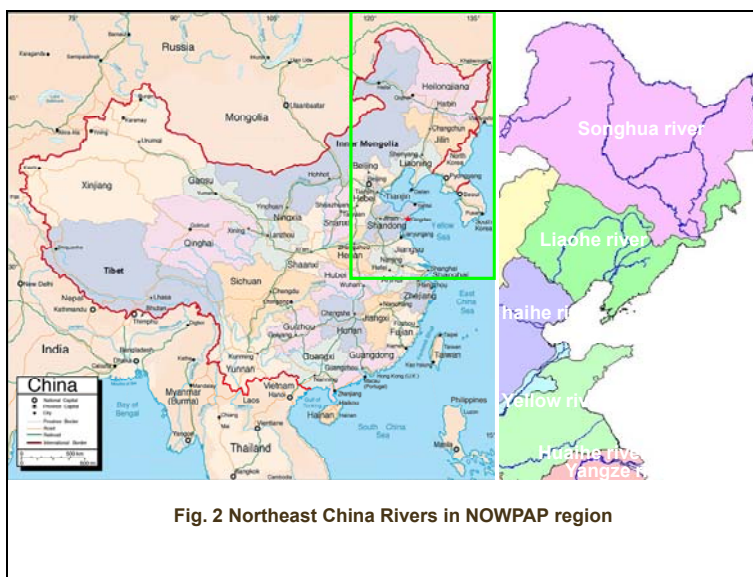


Fig. 2 Northeast China Rivers in NOWPAP region



Fig.3 main rivers and cities in this region

Table 1 Geographical characteristics and economic situation of the main provinces in 2005

Province	Square, km ²	GDP per capita, USD/person	Population (million)
Jiangsu	100,000	3149	74.75
Shandong	150,000	2576	92.48
Liaoning	150,000	2434	42.21
Jilin	180,000	1711	27.16
Heilongjiang	460,000	1850	38.20

Part II National programs

Offshore monitoring

The offshore environmental monitoring network of the State Environmental Protection Administration conducts regular monitoring for two or three times every year in the offshore areas in the entire country except Taiwan Province, Hong Kong and Macao Special Administration Regions, mainly including over 30 key areas and over 300 stationary seawater quality monitoring sites in the offshore areas near cities, estuaries of rivers, key harbors, fishery areas and the marine areas with frequent human activities. In certain areas, monitoring on the sediments and the ambient biological quality is also conducted.

In 2006, two-phase seawater quality monitoring was carried out in 299 monitoring sites in 37 key offshore areas in the country, with 49 sites in Bohai Sea, 54 ones in the Yellow Sea, 93 ones in the East China Sea and 103 ones in the South China Sea, monitoring two or three times per year.

The monitoring items include water temperature, salinity, suspended solid, pH, DO, COD (alkali manganese method), oil, activate phosphate, inorganic nitrogen (nitrite nitrogen, nitrogen nitrate and ammonia nitrogen), non-ion ammonia, mercury, copper, lead and cadmium, altogether 14 ones.

The assessment of the marine water quality follows "Sea water quality standard"(GB3097-1997).

The assessment methodologies of the seawater is single element index method.

•Pollution sources monitoring

In 2006, 587 pollution sources which discharge to seawater directly and the waste water quantity are larger than 100 cube meter are monitored. About 156 river sections which flow into seawater are monitored too.

•Surface water monitoring

Monthly report of surface water monitoring: Haihe River, Huaihe River, Liaohe River, Yangtze River, Yellow River, Songhua River, and 479 sites are included. once every month.

Weekly report of surface water automatic monitoring: 51 automatic stations has been set up, eight items, once per two hours.

Part III Present situation

- River Input : 15 main rivers are listed in report.
- Water grade of rivers which flow into Yellow sea among 48 monitoring sites, 21 sites are grade II or III, the percent is 43.8% , 10 sites are grade IV or , the percent is 20.8% , 17 sites exceed grade V, the percent is 35.4%. the main pollutants are total phosphor, ammonia and COD_{Mn}.

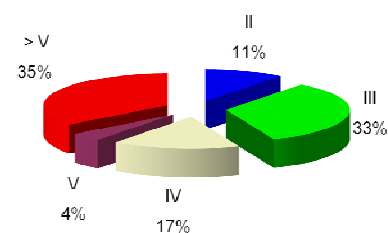


Fig. 4 water grade of rivers which flow into Yellow sea

• The main pollutants discharge of rivers which flow into Yellow sea

The total amount of COD is 250000 tons, while the total amount of NH3-N is 30700 tons. the total amount of oils is 4200 tons, the total amount of total phosphor is 7400 tons.

Heavy metals and **v-phen** are monitored in some river sites, the results show that only a few sites exceed the standard.

• Direct Discharge Pollution Loads

Three province are involved the NOWPAP region in China for direct discharge pollution loads. The pollution loads include the wastewater from main industrial plants and sewage directly into the coast.

The total amount of direct discharge of waste water is 0.19 billion tons, the total amount of COD is 26000 tons, while the total amount of NH3-N is 1900 tons. the total amount of oils is 64 tons, the total amount of total phosphor is 270 tons.

• The quality status of marine water

in 2006, The quality status of Yellow Sea is good: Grade I and II sea water account for 83.7%, 5.2% lower than that of 2005 year. Grade IV seawater accounts for 6.1%, 5.0% lower than that of 2005 year. Grade III sea water account percent going up.

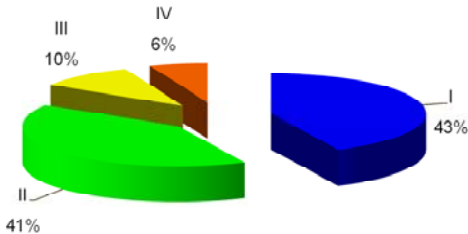


Fig.5 The water quality statistics map in Yellow Sea

Part IV national policies and laws

Table 2 Main Laws and Regulations Related in China

Type	Name and Published Year of Document	Approved by
Law	Law of Fishery (1986)	People's representative Committee of China
	Law of Reservation for Wild Animals (1988)	
	Law of Environmental Protection (1989)	
	Law of Water and Soil Conservation (1991)	
	Law of Prevention on Environmental Pollution by Solid Wastes (1995)	
	Law of Water Pollution Prevention (1996)	
	Law of Mines Resources (1996)	
	Law of Marine Environmental Protection (1999)	
	Law of Water (2002)	
	Law of Promotion on Clean Production (2002)	
	Law of Environmental Influences Assessment (2003)	

(continued)		
Legislation	Managing Guidelines to Protecting on Propagation of Aquaculture Resources (1979)	State Council of China
	Managing Guidelines to Prevention Marine from Shipping (1983)	
	Managing Guidelines to Keep Contamination and Damage from Coastal Construction and Engineering (1990)	
	Managing Guidelines to Keep Contamination and Damage from Pollutants in Terrestrial Sources (1990)	
	Rules on Implementation of the Law of Prevention of Terrestrial Wild Animals (1992)	
	Technical Guidelines on Environmental Impacts Assessment (1993)	
	Rules on Implementation of the Law of Prevention of Water and Soil (1993)	
	Rules on Implementation of the Law of Prevention of Aquicolous Wild Animals (1993)	
	Guidelines on Natural Preservation Zones (1994)	
	Guidelines on Preservation of wild Plants (1996)	
	Management Ordinance of Environmental Protection on Projects (1998)	
	Detailed Rules on Implementation of the Law of Prevention of Water Pollution (2000)	
	Implementation Guidelines on Law of Forests (2000)	

(continued)		
Standard	Sanitary Standard for Drinking Water (1985)	National or Ministries
	Water Quality Standard for Fisheries (1989)	
	Quality Standard for Agricultural Irrigation (1992)	
	Wastewater and Sludge Disposal Standard for Municipal WTP (1993)	
	Integrated Wastewater Discharge Standard (1996)	
	Sea Water Quality Standard (1997)	
	Discharge Standard for Municipal Wastewater (1999)	
	Environment Quality Standard for Surface Water (2002)	
	Standard for Pollution Control of Sewage Marine Disposal Engineering (2000)	

Part V Conclusion

- in 2006, The quality status of Yellow Sea is good: Grade I and II sea water account for 83.7%, 5.2% lower than that of 2005 year. Grade IV seawater accounts for 6.1%, 5.0% lower than that of 2005 year. Grade III sea water account percent going up.
- In 2006, the key pollution elements affecting the water quality in the offshore areas remain the oils, inorganic nitrogen pH, and activate phosphate. In some marine areas, COD, cadmium and lead exceed the standards. The main pollutant is oils, which exceed the standard 2.5 times. Oils pollutant is relevant with shipping, so we must pay great attention to shipping at the same time with pollution from the land.

- Among Liaoning, Shandong and Jiangsu province, the water quality in the offshore areas of Shandong province is fairly good, the water quality in the offshore areas of Liaoning province and Jiangsu province are gently polluted. The percent of grade I and II seawater in Jiangsu province is the lowest.
- Among rivers flowing into the sea, Tumen River, Daliaohe River, Dalinghe River, Yongdingxinhe River, Chaobaixinhe River, Duliujianhe River are seriously polluted. The water of YalujiangRiver, Yellow River, Yihe River are fairly good.

Part VI some **proposals**

- strengthening communion and cooperation in **the NOWPAP Region**, extending advanced technique and experience on marine pollution prevention, developing the pollution prevention in Yellow Sea;
- setting up environmental data managing system of the Yellow Sea, inputting and managing data of relevant regions in time, sharing the data source, compiling environmental quality report of the Yellow Sea, pointing out the problems and the duty and responsibility of different countries in **the NOWPAP Region**, providing some strategies for the governments in these countries;
- The relative country should use the uniform monitoring method and assessment standard, so the data from different country could be acceptable by all of the partners. The training on this kind of method & standard should also be held.

Thank you!

Appendix III

ICRBM in Japan

Hiroaki TANAKA

July 10, 2007

ICRBM in Japan

Hiroaki TANAKA
 Professor
 Kyoto University
 Graduate School of Engineering
 Research Center for Environmental
 Quality Management

ICRBM in Japan

1. Geographical Outline
2. The measures for environmental conservation of the enclosed coastal sea
 - (1) Background
 - (2) Total Pollution Load Control System
 - (3) The measures for reducing pollutant load
 - (4) The measures for environmental improvement at sea areas
 - (5) Outcome
3. Overview of the related national laws
 - (1) Basic Environment Law (1993)
 - (2) Water Pollution Control Law (1970)
 - (3) Sewerage Law (1958)
 - (4) Household Septic Tank Law (Septic Tank Law) (1983)
4. Water Quality regular Monitoring and surveillance
5. Future plans

1. Geographical Outline

-Related Prefectures: 16 prefectures

Land Area: about 180,000km²

Coastline : about 11,000km

<The whole country>

Land Area: about 380,000km²

Coastline : about 34,000km

-Estimated Population in Related Prefectures: about 32 million

-35 first class rivers* flow into the NOWPAP region.

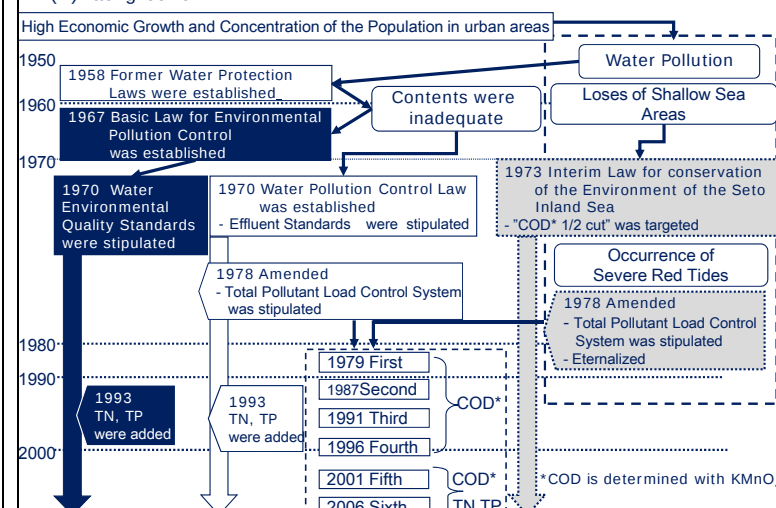
total basin area: about 90,000km²

total length: about 3,900km

*first class river: rivers designated because of their economic importance and their importance to land conservation

Residential Area	Rice Field	Farm Land	Forest
5,127 (Km2)	12,779 (Km2)	12,557 (Km2)	32,539 (Km2)

2. The measures for environmental conservation of the enclosed coastal sea (1) Background



2. The measures for environmental conservation of the enclosed coastal sea

(2) Total Pollution Load Control System

Purpose

Reducing pollutant loads into the large enclosed sea and coastal areas, where effluent standards are insufficient for achieving and maintaining the Water Environmental Quality Standards.

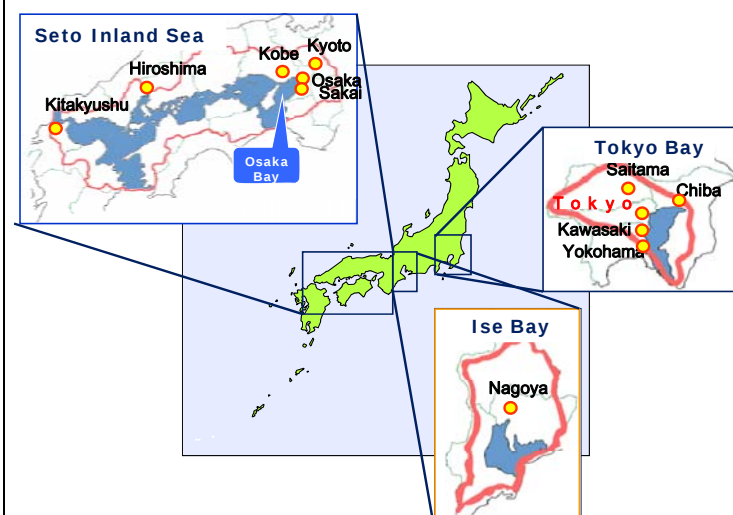
Mechanism of the Total Pollutant Load Control System

Basic Policy for Total Pollutant Load Control

- Minister of the Environment formulates a basic policy
- The policy includes quantitative reduction targets

Total Pollutant Load Control Plan

- The governor of each prefecture makes a plan
- The plan includes the pollutant load control target for each pollution source and means for achieving the target

 Specified Bodies of Water and Regions
(20 prefectures are related)


2. The measures for environmental conservation of the enclosed coastal sea

(3) The measures for reducing pollutant load

Measures for reducing pollutant load from Household

- Installation of sewerage and improvement of household septic tank systems
- Advances in household wastewater treatment

< Treatment rate of household wastewater >			<Population rate of diffusion of advanced sewage treatment>		
	1979	2004		1999	2003
Tokyo Bay	48%	90.5%	Tokyo Bay	4.5%	8.5%
Ise Bay	30%	68.6%	Ise Bay	9.9%	22.2%
Seto Inland Sea	35%	76.3%	Seto Inland Sea	14.1%	24.2%

Measures for reducing pollutant load from Industry

Regulation of Pollutant Load through Total Pollutant Load Control Standards

- Load (kg/day) = concentration (mg/l) × effluent volumes (m³/day) × 10⁻³
- Factories and other commercial facilities with effluent volumes of 50 m³/day or more are obligated to comply

Guidance for reducing pollution load to small commercial facilities

2. The measures for environmental conservation of the enclosed coastal sea

(3) The measures for reducing pollutant load

Measures for reducing pollutant load from Other Sources

- Law for Promoting the Introduction of Sustainable Agricultural Practices



Appropriate Fertilizing in Agriculture

- Law for Promoting Appropriate Management and Use of Excreta Livestock



Appropriate Managing of Excreta of Livestock

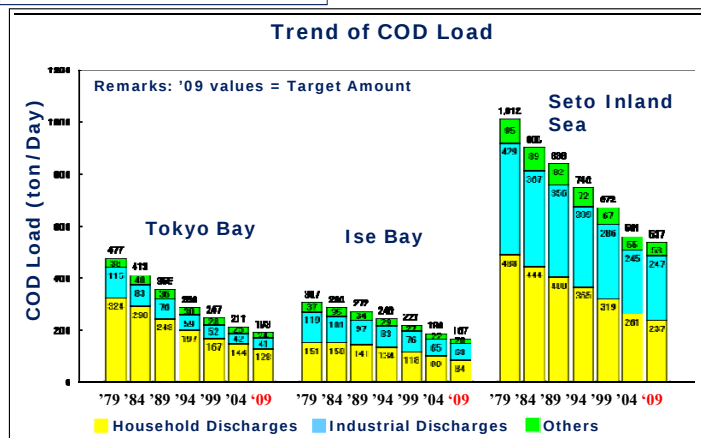
- Law to Ensure Sustainable Aquaculture Production



Appropriate Feeding in Aquaculture

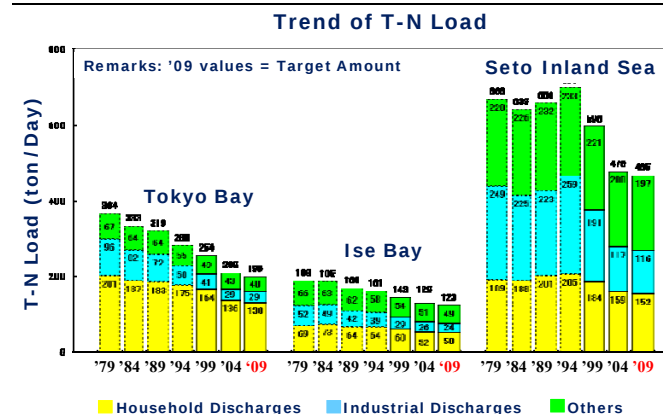
2. The measures for environmental conservation of the enclosed coastal sea

(3) The measures for reducing pollutant load

Trends in Pollution Loads and
Reduction Targets

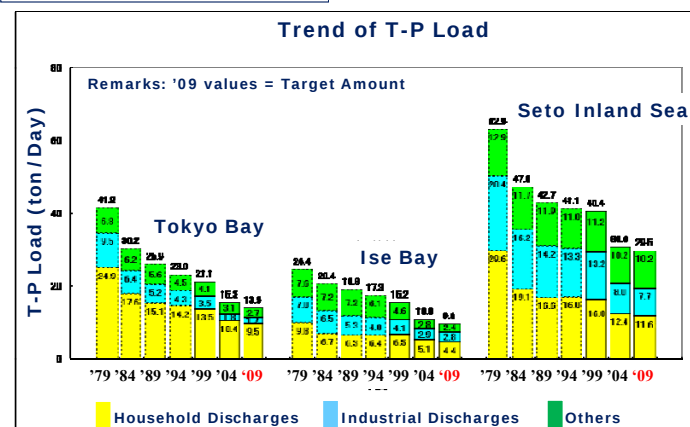
2. The measures for environmental conservation of the enclosed coastal sea

(3) The measures for reducing pollutant load

Trends in Pollution Loads and
Reduction Targets

2. The measures for environmental conservation of the enclosed coastal sea

(3) The measures for reducing pollutant load

Trends in Pollution Loads and
Reduction Targets

2. The measures for environmental conservation of the enclosed coastal sea

(4) The measures for environmental improvement at sea areas

Conservation and Restoration of Tidal flat and Seaweed bed

A period of high economic growth (1950'-70') :
Landfill for Securing the Land for Industry and Distribution

Tidal Flats and Seaweed beds were lost rapidly

Tokyo Bay	9,450ha (1945)	⇨	1,000ha (1983)
Ise Bay	4,900ha (1955)	⇨	1,800ha (2000)
Seto Inland Sea	15,200ha (1949)	⇨	11,700ha (1995)

Restoration of Tidal flat by using Dredged Sediment, etc.

Improvement of Sediments

Removal of Sediment, Sand Covering, etc.

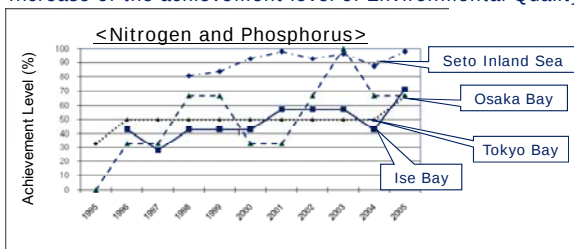
Rebury of the Dredged sites

Depression grounds cause occurrences of Hypoxic Water Mass
(⇒Consider reburying)

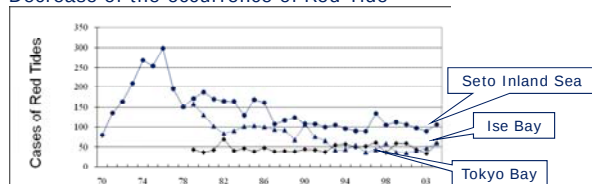
2. The measures for environmental conservation of the enclosed coastal sea

(5) Outcome

1. Increase of the achievement level of Environmental Quality Standards



2. Decrease of the occurrence of Red Tide



3. Overview of the related national laws

(1) Basic Environment Law (1993)

- The basic principles of environmental conservation policies
- The Government shall establish a basic plan with regard to environmental conservation (" Basic Environment Plan") in order to comprehensively and systematically promote the policies for environmental conservation.
- The Government shall respectively establish Environmental Quality Standards, the maintenance of which is desirable for the protection of human health and the conservation of the living environment.

(2) Water Pollution Control Law (1970)

- Regulating effluent discharged by factories or establishments into the Public Water Areas, thereby to protect human health and to preserve the living environment
- Stipulating total pollutant load control system
- Stipulating water quality monitoring system

3. Overview of the related national laws

(3) Sewerage Law (1958)

- The prefectural government (PG) shall establish the comprehensive basin sewerage plan with regard to the efficient development of a sewage system on each public water body for meeting Environmental Quality Standards. Regional sewerages are managed by the PG.
- Management of the public sewage system is mainly under the jurisdiction of municipal governments.
- The technical standard for public sewage systems and the effluent quality standards for sewage treatment facilities are provided by cabinet orders.

(4) Household Septic Tank Law (1983)

- In order to achieve the proper treatment of human sewage and domestic wastewater with household septic tank.
- Regulating the installation, maintenance, cleaning and manufacturing of septic tanks
- Containing provisions for registering or licensing those involved in household septic tank manufacture and sales businesses and establishing a permit system

4. Water Quality regular Monitoring and surveillance

monitoring body

- The governor of a prefecture shall monitor the state of water quality in the Public Water Area and groundwater. (Water Pollution Control Law Article15)
- The governor of a prefecture shall establish a program for the measurement of water quality ("Measurement Program"). The Measurement Program shall provide, with regard to the measurements conducted by the national or local government as to the water quality in the Public Water Area, for the matters to be measured, the station and method of measurement and other necessary items. (Water Pollution Control Law Article16)
- The method of measurement is provided by instructions of MOE.

4. Water Quality regular Monitoring and surveillance

monitoring items

1) Environmental Quality Standards (EQS) for protecting the Human Health

- EQS for Human Health items are applied uniformly to all public waters.

2) EQS for conservation of the Living Environment

- Standard values of EQS for Living Environment items are established for various water quality parameters in different classifications of river, lake and sea area.

4. Water Quality regular Monitoring and surveillance

monitoring items

- Environmental Quality Standards for Human Health (26items)

26 items	Items	Standard Values
	cadmium	0.01 mg/L or less
	total cyanide	not detectable

<26 items>

cadmium, total cyanide, lead, chromium (VI), arsenic, total mercury, alkyl mercury, PCBs, dichloromethane, carbon tetrachloride, 1,2-dichloroethane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, tetrachloroethylene, 1,3-dichloropropene, thiuram, simazine, thiobencarb, benzene, selenium, nitrate nitrogen/nitrite nitrogen, fluorine, boron

(*) In addition to this, water quality standard and bottom sediment quality standard on dioxins are established in accordance with the provisions of Law Concerning Special Measures Against Dioxins.

4. Water Quality regular Monitoring and surveillance

monitoring items

- Environmental Quality Standards for Living Environment (10 items)

items	rivers(AA ~ E category)	lakes(AA ~ C category)	coastal waters(A ~ C category)
BOD	≤ 1 ~ 10mg/L	-	-
C O D	-	≤ 1 ~ 8mg/L	≤ 2 ~ 8mg/L
pH	6.0 ~ 8.5	6.0 ~ 8.5	7.0 ~ 8.3
S S	≤ 25 ~ 100mg/L, etc	≤ 1 ~ 15mg/L, etc	-
DO	2 ~ 7.5mg/L ≤	2 ~ 7.5mg/L ≤	2 ~ 7.5mg/L ≤
total coliform	≤ 50 ~ 5,000MPN/100ml	≤ 50 ~ 1,000MPN/100ml	≤ 1,000MPN/100ml
N-hexane Extracts (oil, etc.)	-	-	not detectable
total nitrogen	-	≤ 0.1 ~ 1mg/L	≤ 0.2 ~ 1mg/L
total phosphorus	-	≤ 0.005 ~ 0.1mg/L	≤ 0.02 ~ 0.09mg/L
total zinc	≤ 0.03mg/L	≤ 0.03mg/L	≤ 0.01 ~ 0.02mg/L

COD is determined with KMnO_4

4. Water Quality regular Monitoring and surveillance

monitoring points and number of samples

- Number of measurement points in fiscal 2005

	River stream	Lake and marsh	Sea area
Health item	4,028	425	1,147
Living environment item	4,618	749	3,178

Number of samples in fiscal 2005

Health item: 259,795

Living environment item: 420,055

4. Water Quality regular Monitoring and surveillance

Public Announcement

- Each prefecture announces the results through white paper and HP.
- MOE compiles the outline of the results of each prefecture.
<http://www.env.go.jp/water/suiiki/index.html>
- Water environmental synthesis information site
<http://mizu.nies.go.jp>

4. Water Quality regular Monitoring and surveillance

Toward better system of regular monitoring and surveillance

- The subsidy from the national coffers on regular water quality monitoring and surveillance done by local governments bodies was terminated in fiscal 2005.
- Transfer of tax revenue sources to local governments bodies
- The central government is in a position to indicate measurement points, items, frequency of measurements, interpretation of accuracy and standard so that local governments can properly and effectively execute regular water quality monitoring and surveillance at their own discretion.
- Efficiency improvement of analytical methods designated for official methods is required.

4. Water Quality regular Monitoring and surveillance (Other Monitoring)

Hydrologic and Water Quality Database (MLIT)

(Object)

To release the observation data at the observing station of MLIT

(Major Observing Items)

River Flow Rate

- • • about 1,500 observing points in Japan

Observing High water flow and Low water flow

Worked out by using water level- River flow rate relation curve

Water Quality

- • • water temperature, pH, turbidity, DO, NH₃, COD, etc.



The pollutant load that flows into the NOWPAP region can be estimated from the water quality concentration and the flow data.

Web Site (Ministry of Land, Infrastructure and Transportation)
<http://www1.river.go.jp/>

4. Water Quality regular Monitoring and surveillance (Other Monitoring)

Marine Pollution Survey (Japan Coast Guard)

In accordance with the provision of Article 46 of Law Relating to the Prevention of Marine Pollution and Maritime Disaster, Japan Coast Guard continuously obtains seawater and marine sediment and analyze how much oil, PCB, heavy metals, etc. each sample has.

Suvey Sea Area	Survey Items	
Sea Area around Japan	surface seawater	oil, PCB, heavy metals
Major Bay (Tokyo Bay, Ise Bay, Osak Bay)	surface seawater	oil, PCB, heavy metals, practical salinity, pH, DO, COD
	marine sediment	oil, PCB, heavy metals, Organotin
Sea Area for ocean disposal of wastes	seawater (surface, intermediate)	oil, PCB, heavy metals
	marine sediment	oil, PCB, heavy metals

Web Site (Japan Coast Guard)
<http://www1.kaiho.mlit.go.jp/KANKYO/OSEN/gaiyo/osen.html>

5.Future plans

Implementation of the Sixth Total Pollutant Load Control

13.Oct,2006	<u>The measures for setting the Sixth Total Pollutant Load Control Standards</u> were notified	By Ministry of the Environment
21.Nov,2006	<u>The Sixth Basic Policy for Total Pollutant Load Control</u> was formulated	
Jun,2007	<u>The Sixth Total Pollutant Load Control Plans</u> were made	By related 20 prefectures
"	<u>The Sixth Total Pollutant Load Control Standards</u> were notified	
1.Sep,2007	Application of the Sixth Total Pollutant Load Control Standards <u>to newly established facility</u> will be start	
1.Apr,2009	Application of the Sixth Total Pollutant Load Control Standards <u>to all facility</u> will be start	



Implementation of various measures for reducing pollutant load



Achieve the Quantitative Reduction Target (target year: 2009)

*Thank you very much
for your kind attention!*

Appendix IV

Assessment of Integrated Coastal and River Management and Related Problems in Republic of Korea

Hyun Taik OH, Hee-Gu CHOI, Won-Keun CHANG



Assessment of Integrated Coastal and River Management and Related Problems in Republic of Korea

Hyun Taik OH, Hee-Gu CHOI, Won-Keun CHANG



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6

Existing DB containing ICRBM Info



STATE

1

State of ICRBM development

- A. Background
- B. History of ICRBM
- C. Geographical scale
- D. National problems
- E. Local problems
- F. Examples of ICRBM implementation

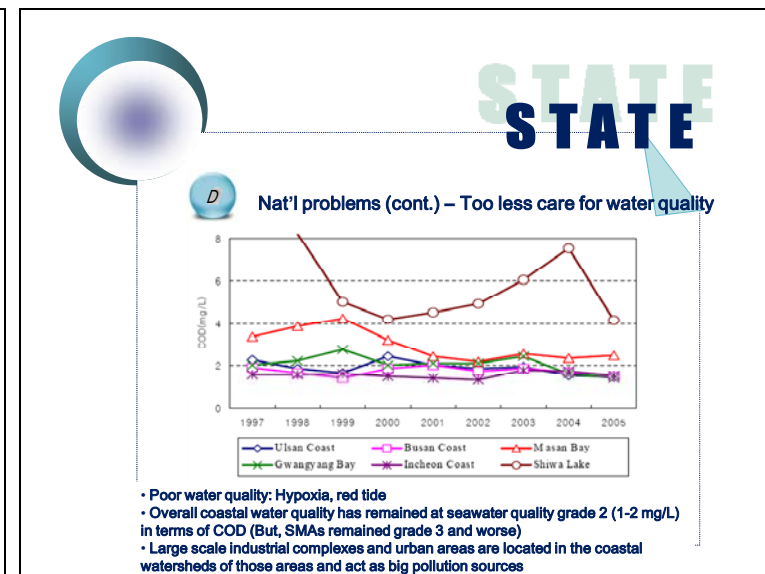
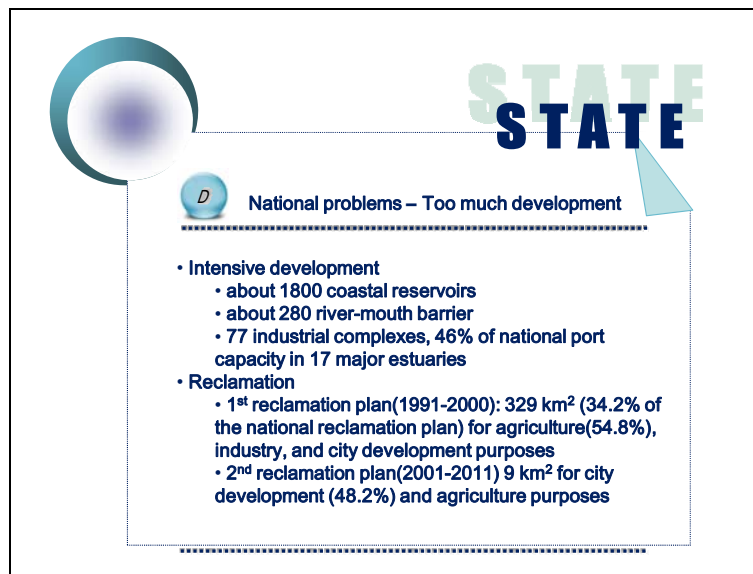
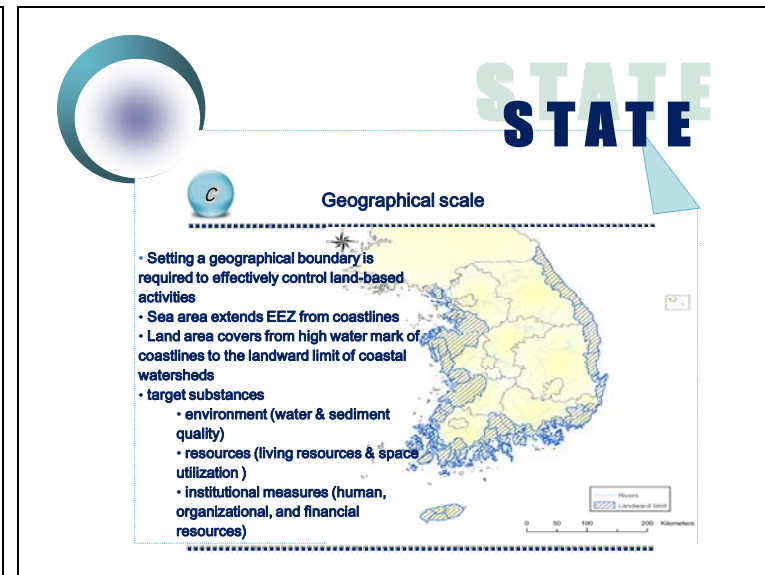
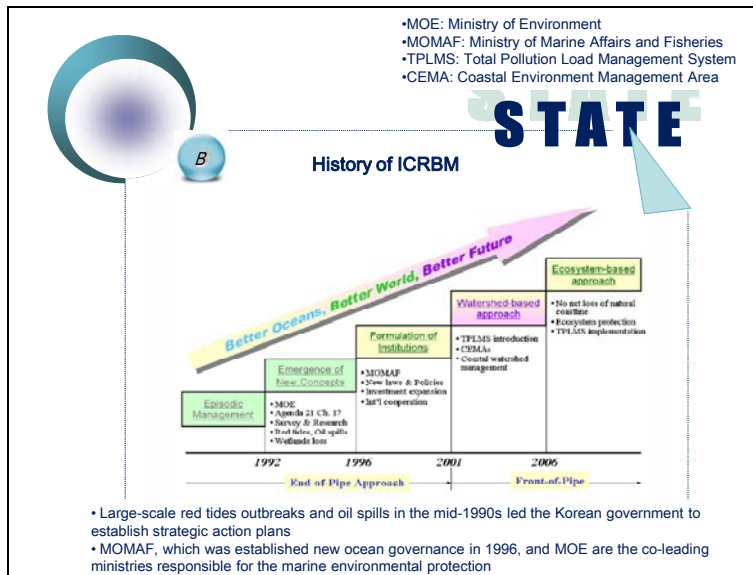


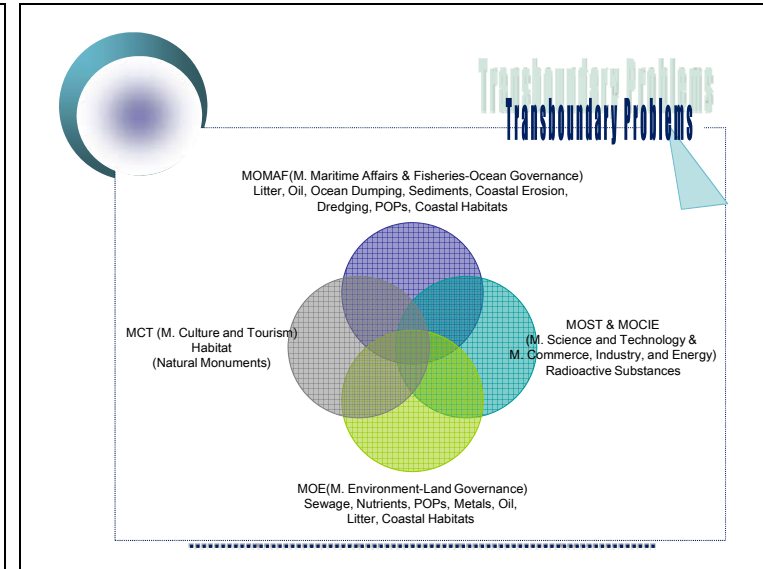
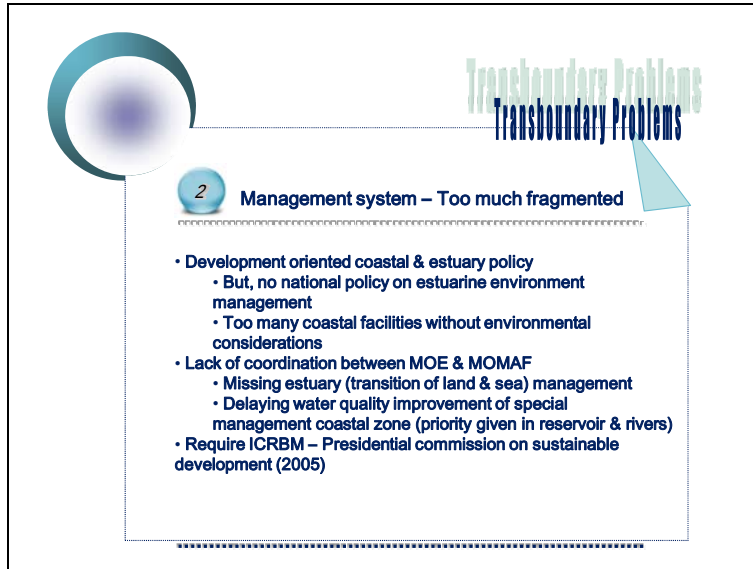
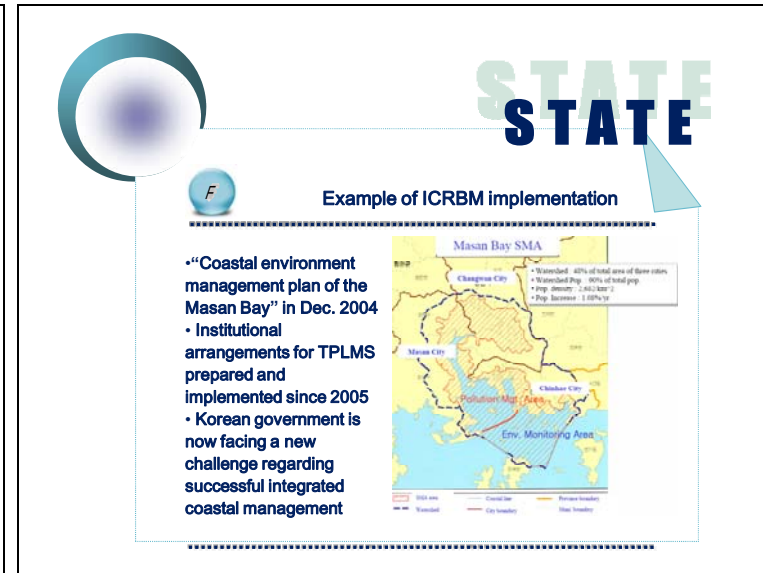
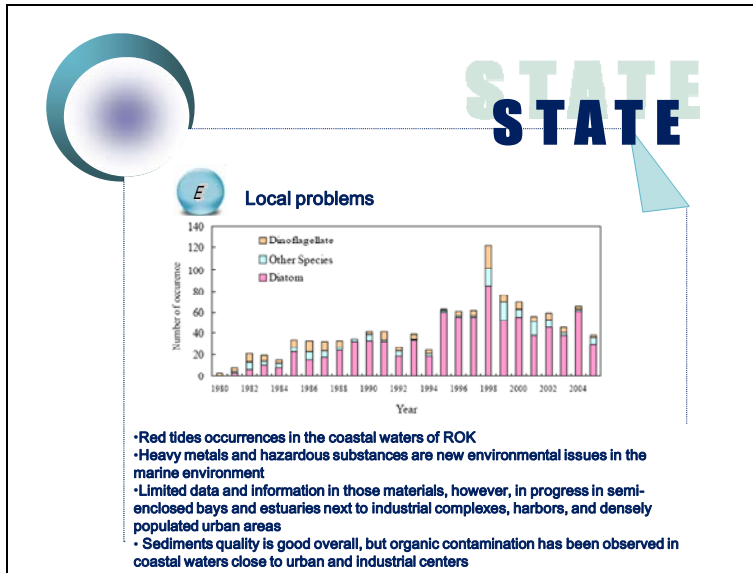
STATE

4

Background: Industrialization & Civilization

- Rapid increase in pollutants input from land based sources into coastal waters
- Highly degradation of coastal habitats, due to intensive coastal development since the 1970s
- BOD increased about 40% during the last decade
- Wetland decreased 20% by reclamation projects during the period of 1987 to 2005
- Not until the mid 1990s did the marine environmental protection become public agenda though





ICRBM Methodology

3 Coordination & Integration in National Level

- Presidential commission on sustainable development
- Developed an “integrated coastal and sea environmental management policy” (2005)
- Suggested 8 new strategies to enhance inter-departmental coordination & integration such as
 - Development integrated coastal and sea protected areas/zones management system
 - Establishment estuary management program
 - Development effective land-based pollution control to improve coastal water quality

ICRBM Program

4 Implementation strategies (MOMAF)

- Consolidation of coastal watershed management regime
- Site-specific and issue dependent approach
- Strengthening decision making support system
- Capacity building and public involvement
- Revision of legal and institutional framework
- International / Regional cooperation

Regulation

5 Brief review of the related legislation

Category	Law and Act	Plan	Government Agency	Relevancy
Setting Policy Direction and Standards for the Management of Environment	Framework Act on the National Land	Comprehensive Plan for the National Land	MOCT	△
	National Land Planning and Utilization Act	City Planning and Land Utilization Plan	MOCT	△
	Framework Act on Environmental Policy	National Comprehensive Environmental Plan	MOE	○
	Framework Act on Marine Fishery Development	Framework Plan for Marine Fishery Development	MOMAF	△
	Coastal Management Act	Integrated Coastal Management Plan	MOMAF	○
The Management of Pollutants and Improvement of Environmental Condition	Marine Pollution Prevention Act	Framework Plan for the Prevention of Marine Pollution	MOMAF	●
		Framework Plan for the Coastal Zone Management	MOMAF	●
	Water Quality Conservation Act	Framework Plan for Wastewater Treatment Facilities	MOE	●
	Special Act on Watershed Management and Community Support for 4 Major River Basins	Framework Plan for Total Pollution Load Management	MOE	○
	Sewerage Act	Framework Plan for Drainage Maintenance	MOE	●
	Act on the Disposal of Sewage, Excreta, and Livestock Wastewater	Framework Plan for the Disposal of Sewage, Excreta, and Livestock Wastewater	MOE	●
	Water Control Act	National Comprehensive Plan for Waters	MOE	○
	Toxic Chemicals Control Act	Framework Plan for the Management of Toxic Chemicals	MOE	○

Regulation

5 Brief review of the related legislation (continued)

Category	Law and Act	Plan	Government Agency	Relevancy
The Protection and Rehabilitation of Control and Marine Ecosystem	Wetlands Conservation Act	Framework Plan for Wetlands Conservation	MOMAF	●
	Natural Environment Conservation Act	National Framework Plan for Conservation of Natural Environment	MOE	○
	Public Waters Management/ Reclamation Act	Public Waters Reclamation Management Plan	MOMAF	●
	Law on the Conservation and Management of Marine Ecosystem	National Plan for the Marine Protected Areas Management	MOMAF	●
	Natural Parks Act	Framework Plan for National Parks	MOE	○
Wildlife Protection Act	Wildlife Protection Act	Framework Plan for Wildlife Protection	MOE	○
	Protection of Cultural Properties Act	Plan for Conservation, Management, and Utilization of Cultural Properties	MOCT	○

Source: modified from MOMAF (2005)

Note: Relevancy shows the degree of cooperation with land-based pollution and activities.

Note: △ The order of relevancy is ● ○ △

Note: *** Special Act on Watershed Management and Community Support Act for 4 Major River Basins is comprised of 'Act on Green River Watershed Management and Community Support', 'Act on Nakdong River Watershed Management and Community Support', and 'Act on Yeongsang & Inha River Watershed Management and Community Support'

ICRBM DB

6 Existing databases containing ICRBM information
<http://www.meis.go.kr>



ICRBM DB

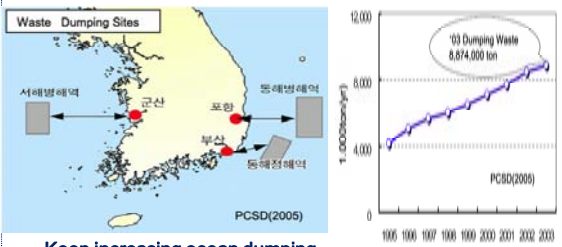
6 ICRBM information (Cont.)

- GIS tool for observation sites
- NFRDI
- NORI
- KORDI
- KOREA Ocean Guard



STATE

D National problems (continued) – Too much dumping



Waste Dumping Sites

서해영해역, 군산, 포항, 부스, 동해영해역, PCSD(2005)

1,000(ton/yr)

1995 1996 1997 1998 1999 2000 2001 2002 2003

03 Dumping Waste 8,874,000 ton

PCSD(2005)

- Keep increasing ocean dumping
- Until 2011, reduce 50% dumping compare to 2005
- Stop dumping in 2012

Appendix V

Integrated Coastal Area and River Basin Management in Russia

I.S.ARZAMASTSEV

INTEGRATED COASTAL AREA AND RIVER BASIN MANAGEMENT IN RUSSIA

*I.S.Arzamastsev
Pacific Geographical Institute,
Far Eastern Branch of RAS,
Vladivostok, 2007*

Human civilization always flourished along seaside and near river basins.

- In Russia, approximately 17 million people live in the coastal zone (within a belt of 50 km from the coastline)
- and only 5 million of them render habitable the coastal zones of the Far-Eastern seas and open coasts of the Pacific Ocean.



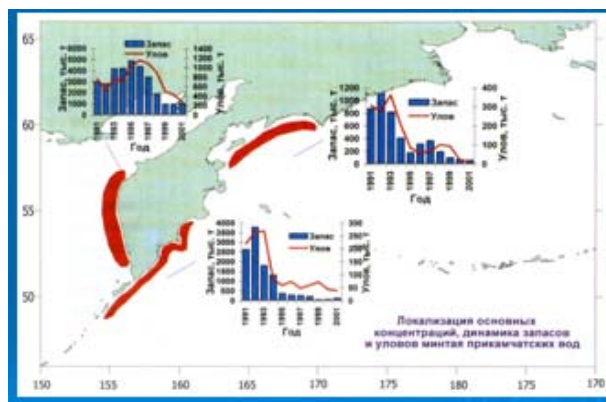
- Russia conducts complex study of hydrometeorological characteristics such as currents, salinity, and distribution of ice fields.

Economics of coastal Far Eastern Regions is oriented to fishery. This is why, the bioresources are under constant study.

One of the problems is extra fishing.

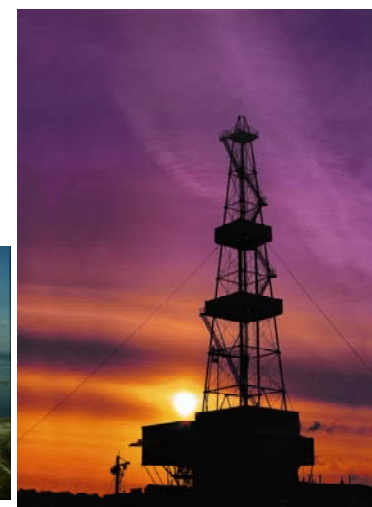
Resources of valuable hydro biotic organisms reduce. Such situation is peculiar for crabs, scallops and pollack.





- Though, recent researches indicated that reduction of pollack results not only from extra fishing but also from natural reasons, namely cyclic changes in population quantity.

- Shelves of Far Eastern seas are rich with oil and gas. On Sakhalin shelf, industrial production of these resources caused environmental problems.



- There was initiated construction of oil pipeline Siberia-Far East. The pipeline crosses many rivers and river basins. Its terminal part will be equipped with facilities for transfer of 30-80 million tons of oil per year. This will result in complex environmental problems.



- South of Primorsky krai is the wonderful place for organizing recreation and tourism for people from Far East and Siberia. Development of recreation and tourism will conflict with industrial development.



- For many years, detailed investigations are being conducted to monitor environment.
- All these investigations, constantly arising conflicts, coastal and related river basin problems indicate evident necessity in application of ICARM methods to organize wise nature management and trend to sustained development of the region.



- Within network of federal goal-oriented program “The World Ocean”, far-eastern scientific centre of Russian Academy of Sciences over five years conducted researches for complex management of coastal areas and river basins.
- These researches are oriented to study of coastal areas of the Far East.



Complex studies of this issue were executed for NOWPAP Caspian Sea region. In Black Sea coastal area near Sochi, where Winter Olympics-2014 will be held, complex activities for ICARM have also been conducted, as well as in north-western Russia, in the vicinity of Murmansk city.



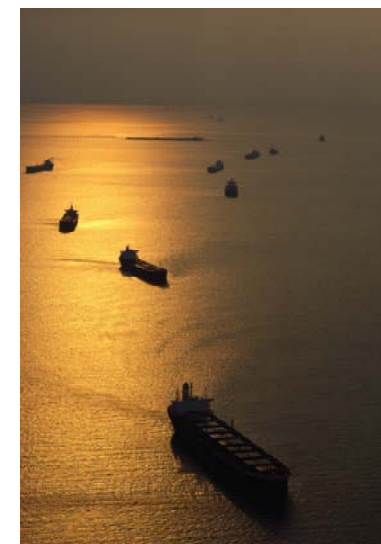
Near Baltic Sea of Russia, in St. Petersburg Russian National Hydrometeorological University, training of ICARM specialists has been carried out for several years already.

As is had been ordered by Administration of St. Petersburg city, propositions for development of concept of the city’s ICARM system as basis of efficient coastal resource management oriented to economical and social development of St. Petersburg, were prepared.

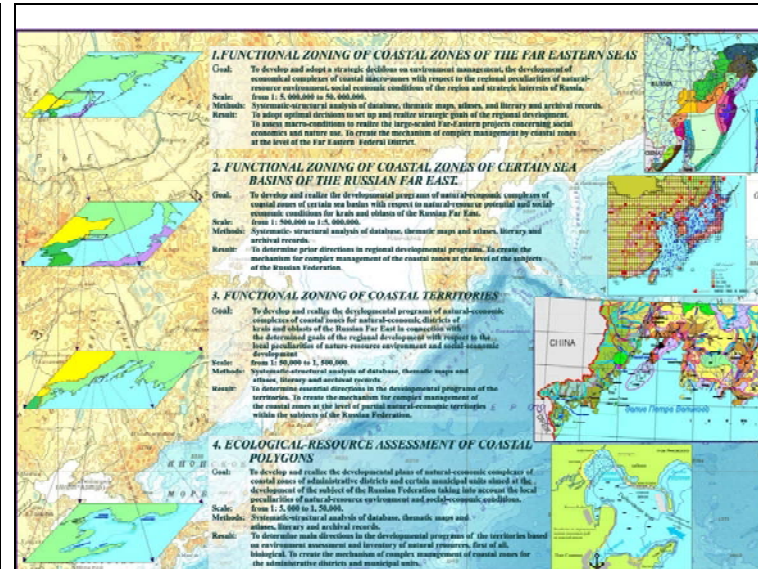
- Some elements of complex monitoring, including public polls and study of public opinion, were tested during last three years for certain object under construction, oil terminal in Primorsk town.



- In several Vladivostok institutes, students are taught this discipline



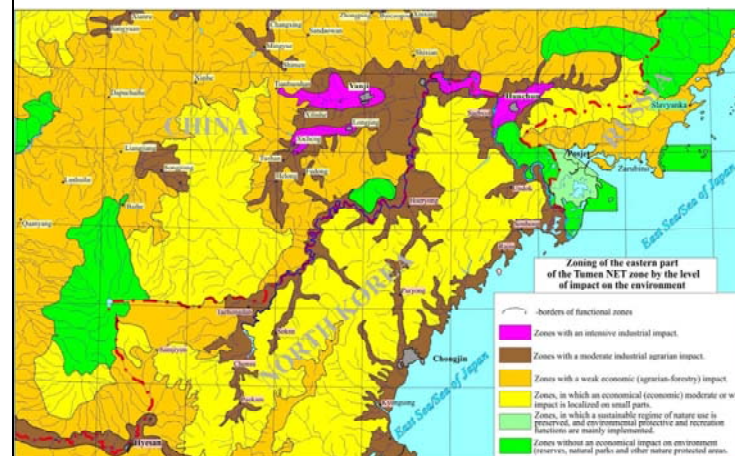
- Researchers of the Pacific Geographical Institute adhere to systematic approach while studying complex management of coastal areas and river basins.
- We apply methods of functional zoning and regional division, where each level corresponds to definite scale and range of issues being solved.



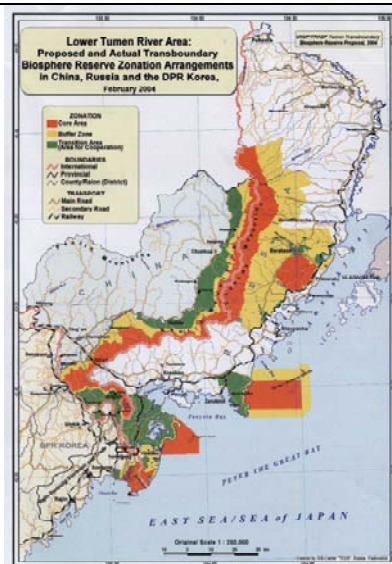


Biological resources
zoning

Functional Zoning of Lower Tumen River Basin and Adjoining coastal zone



Figure



Natural economy districts
I. Sredneussuriyskiy
II. Northern
Gornotayozhny
III. Eastern Sikhote-Alin
IV. Verkhneussuriyskiy
V. Prikhankaiskiy
VI. Rudno-Sikhote-Alin
VII. Yugo-Vostochny
(South-Eastern)
VIII. South Primorie



Рис. . Природно-хозяйственные районы Приморского края (ПХР)

Functional zoning of coastal territories Economic map of the Peter-The-Great Bay.



These zones can be further divided into smaller geographical units on the basis of environmental and socio-economic criteria which could be used for differentiating policies and actions from a management perspective.



- **1. Diagnostic analysis (inventorying of resources and types of activities in coastal zone (CZ) and situation diagnosis.**
- **2. Cause-and-result analysis.**
- **3. Definition of problems, singling out of priorities.**
- **4. Estimation of potential capacity of coastal area near Vladivostok.**
- **5. Hypothesis of city-forming basis of Vladivostok CZ.**
- **6. Schedule of nature protection activities.**
- **7. Schedule of coastal area management.**
- **8. Project of mechanism for the project implementation.**

- The next stages of ICARM present reasonably planned performing of the developed programs, nature management techniques and mechanisms of their implementation.

The next level: Ecological-resource assessment of coastal polygons of the Russkiy Island

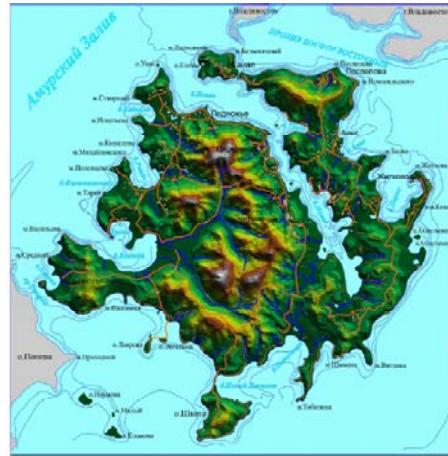
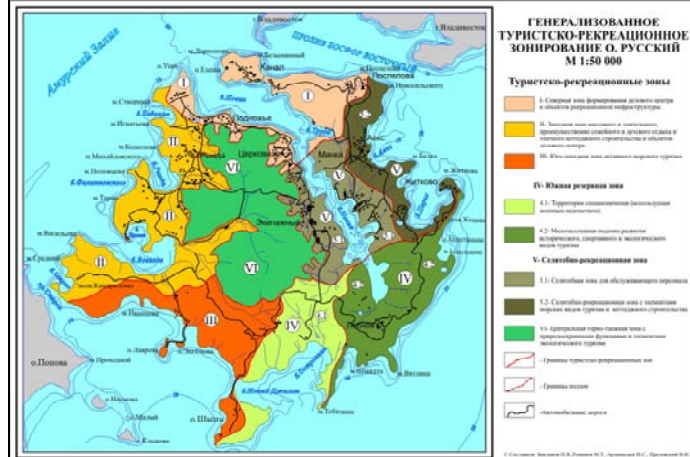
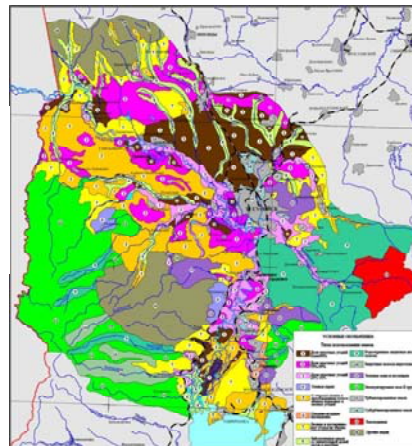


Рис 3. Физико-географическая карта о.Русский

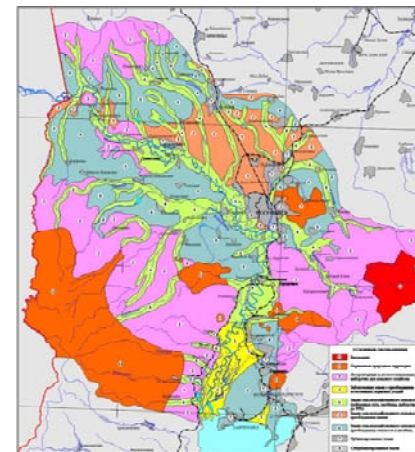
Generalized tourist-recreational zoning of the Russkiy Island



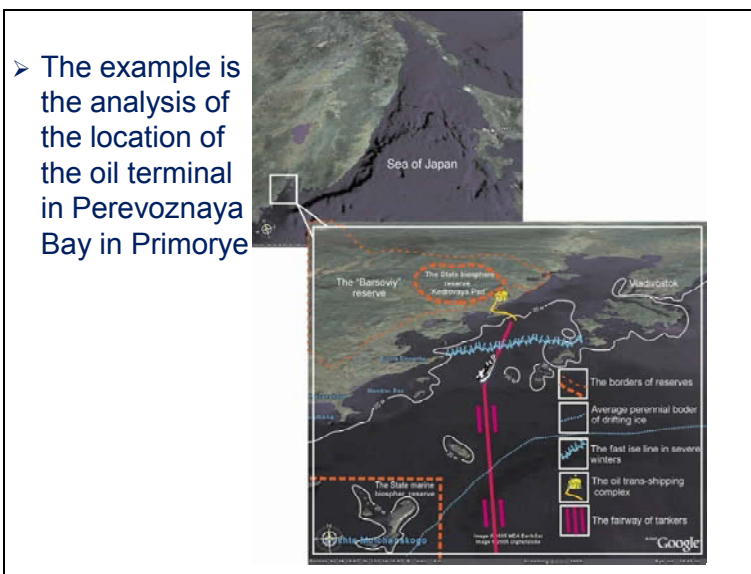
Modern land use map of Russian area of Razdol'naya/Suifenhe River basin and some adjoining territories (scale 1:300000)



Карта современного землепользования российской части бассейна реки Раздольной и некоторых прилегающих территорий (Масштаб 1:300000).



Карта рекомендуемого землепользования российской части бассейна реки Раздольной и некоторых прилегающих территорий. (Масштаб 1:300 000).



➤ Some of Pacific Geographical Institute studies are united in the monograph “Nature management in coastal area” Vladivostok, Dalnauka, 2003. 251 p.

➤ The book elucidates aspects of coastal nature management and theoretic approaches and basics of coastal area management for Far Eastern seas of Russia.



The goal: A sustainable development of the region

Stage 1. INVENTORY

- Making operative database on natural conditions, resources and main economic characteristics of the region.
- Structuring of data: making thematic database, series of maps and atlases, different-scaled zoning.
- Elaboration of methodology for making cadastre of coastal waters and territories and its organizing procedure.
- Organizing and the performance of monitoring.

Stage 2.

- The implementing legislation of complex management of coastal zones.
- The creation of the organization structure for realization of complex management by coastal zones at the Federal, regional and municipal levels.
- Elaboration of legislative projects related to environment management, use of natural resources and social-economic development.

Stage 3.

- Implementation of the developed programs and projects.

➤ **High-potential ICARM development in Russia is prevented by inconsistency of legislative base and absence of special administrative agencies for coastal area management. As it is known, these factors are decisive for implementation of ICARM activities.**

➤ **In our opinion, it is time to work out and approve the subsequent moves of ICARM in our countries in order to solve conflicts, remove any problems and attain sustainable development in coastal areas and river basins.**

Thank you for your attention

**Pollution Monitoring Regional Activity Center of UNEP Action Plan for the Protection,
Management and Development of the Marine and Coastal Environment of the Northwest
Pacific Region (POMRAC NOWPAP)**

**Региональный Центр по мониторингу загрязнения окружающей среды Плана
действия ЮНЕП по охране, управлению и развитию морской и прибрежной среды
в Регионе северо-западной Пацифики,
действующий на базе Тихоокеанского института географии ДВО РАН**

**REPORT OF THE 1ST MEETING
OF NOWPAP POMRAC WORKING GROUP
ON INTEGRATED COASTAL AND
RIVER BASIN MANAGEMENT**

(TOYAMA, JAPAN, 10-11 JULY 2007)

Материалы Первого международного совещания
рабочей группы экспертов по комплексному управлению
прибрежными морскими зонами и речными бассейнами
в Северо-Западной Пацифике

10-11 июля 2007 г., Тояма, Япония

(На англ. яз.)

Ответственные редакторы: А.Н. Качур, С.И. Коженкова

Отпечатано с оригинал-макета, подготовленного
в Тихоокеанском институте географии ДВО РАН,
минуя редподготовку