



NARBO ANNUAL REPORT

Network of Asian River Basin Organization

2004



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MESSAGE FROM THE CHAIRPERSON



After more than one year of implementation of NARBO Action Plan 2004-2005 beginning in February 2004, it is considered that NARBO is on the right track to achieve its goal and objective.

NARBO Action Plan 2004-2005 which is consisting of 3 (three) main activities i.e. 1) Advocacy, Raising Awareness, and Exchange of Information and Good Practices on Integrated Water Resources Management (IWRM), 2) Capacity Building in River Basin Organizations (RBOs) and 3) Network Support, has been implemented gradually. As implementation of the Action Plan, various activities have been conducted in good cooperation among members, secretariat and other supporting agencies.

In the future, since we are facing many constraints in managing water resources in a sustainable manner, we need to keep our commitment to enhance our cooperation in implementing agreed NARBO activities by improving NARBO Members' participation in this network.

I really appreciate to NARBO Secretariat who has actively promoted NARBO Activities based on the NARBO Action Plan.

Hopefully, NARBO Annual Report of 2004 and the information inside could become input in evaluating our efforts in continuing the next programs. And to all members, it is hoped to constantly improve their active participation in the implementation of NARBO activities.

Chairperson of NARBO

A handwritten signature in black ink, appearing to read 'M. Basuki Hadimuljono'.

Dr. M. Basuki Hadimuljono

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Preface

As the recognition of importance of IWRM has been surging, the lack of the network to assist RBOs in Asia in their work of introducing and implementing IWRM approach came to light.

With this background, the Third World Water Forum was held in Japan in March 2003. At the forum, JWA, ADB and ADBI signed a Letter of Intent to jointly launch NARBO in recognition of the need to cooperate and support RBOs in order to promote IWRM in Asia. Subsequently, the three organizations made inquiries to

governmental agencies, RBOs and other related organizations in Asia about their intention to participate in NARBO and solicited their cooperation.

After the inaugural NARBO General Meeting was held after the Inception Meeting in Chiang Mai, Thailand in November 2003, NARBO was established in February 2004 with 43 member organizations.

In this annual report, various NARBO activities from its establishment to December 2004 are summarized.

1. Establishment of NARBO

(1) Introduction

The world community has recognized the importance of managing water resources in a more integrated manner. Over the past decades, a series of regional and global water conferences, including the World Water Forums in 1997, 2000, and 2003, have underlined the need to adopt and operationalize the approach of integrated water resources management (IWRM), which is defined by the Global Water Partnership as *“a process to improve the planning, conservation, development, and management of water, forest, land, and aquatic resources in a river basin context, to maximize economic benefits and social welfare in an equitable manner without compromising the sustainability of vital environmental systems.”*

By focusing on the management of water and related resources in a river basin

undertaken at basin level with the involvement of stakeholders at the basin level. The water conference in Dublin in 1992 referred to the need to manage water resources *at the lowest appropriate level*. This has become one of the basic principles underpinning the IWRM approach, and it has led to increased recognition that river basin organizations (RBOs) can realize IWRM at the basin level. Since Dublin, the world community has also recognized the importance of promoting gender and development work as part of the IWRM approach to ensure that women participate in water management at all levels.

“Many forms of RBOs have been established in recent decades, and countries have developed various governance approaches for RBOs, for example, river basin commissions in the

People's Republic of China, river basin parliaments in France, river basin committees in Australia, river basin authorities in the United States and Sri Lanka, a lake basin development authority in the Philippines, water resources public corporations in Japan and Indonesia, inter-state RBOs like the river basin tribunals in India and the Murray-Darling Basin Commission in Australia, and international RBOs in the Mekong basin, the Syr and Amu Darya basins, and in the Tumen basin.

Some RBOs were established decades ago and have ceased to exist, while many new RBOs have been established recently. Some RBOs have a large technical capacity, employing thousands of staff, while others may employ just a handful, like the newly established river basin committees in Southeast Asia. While there are many differences between these RBOs, they share a common mission, which is to operationalize IWRM in their respective river basins.

A network to assist RBOs in Asia in their work of introducing and operationalizing the IWRM approach does not yet exist. Consequently, RBOs lack opportunities for exchanging information and experience on their operations, and access for their staff to training and capacity building that draws on the technical and non-technical experience in managing water resources in Asia.

The need for partnerships for action to achieve IWRM was recognized at the 3rd World Water Forum held in Kyoto, Osaka,

and Shiga, in the Lake Biwa and Yodo River Basin, Japan, in March 2003, where it was noted that several developed and developing countries in Asia have already established RBOs to implement IWRM. The 3rd World Water Forum highlighted the need to support these RBOs through knowledge sharing and capacity building, especially in developing countries.

The 3rd World Water Forum also emphasized the contributions that IWRM can make to improving the water security of the poor, by incorporating the needs of the poor explicitly in water policies and management practices at all levels.

Recognizing the need for networking and capacity building in the implementation of IWRM, the Water Resources Development Public Corporation of Japan (recently reconstituted as the Japan Water Agency), the Asian Development Bank, and the Asian Development Bank Institute decided at the 3rd World Water Forum in March 2003 in Kyoto, Japan, to collaborate in launching a Network of Asian River Basin Organizations (NARBO), and a letter of intent was signed at the Forum on 21 March 2003.

After the forum, the three organizations made inquiries to governmental agencies, RBOs and other related organizations in Asia about their intention to participate in NARBO and solicited their cooperation. The inaugural NARBO General Meeting was held after the Inception Meeting in Chiang Mai, Thailand in November 2003 and the Preparation Meeting for NARBO

General Meeting in Tokyo, Japan in January 2004.

(2) Purposes

The goal of NARBO will be to help achieve IWRM in river basins throughout Asia.

NARBO's objective will be to strengthen the capacity and effectiveness of RBOs in promoting IWRM and improving water governance, through training and the exchange of information and experience among RBOs and their associated water sector agencies and knowledge partner organizations in Asia and to advise the establishment of RBOs in Asia."

To promote IWRM in Asia, the focus of NARBO's activities will be as follows:

1) Activities for the whole of NARBO

The activities joined by all members of NARBO will be as follows:

- Advocacy and raising awareness for IWRM among RBOs, water sector apex bodies, and leading water sector agencies in the region, mainly through regional workshops.
- Sharing of information, good practices, and lessons learned for IWRM among the participating organizations, mainly by operating databases and a web site for IWRM exchanging information, and by sending a newsletter by e-mail as well as posting on the web site and holding (sub) regional workshops

2) Activities for regional areas of NARBO

RBOs, national and federal governmental organizations with expertise in IWRM, regional and interregional knowledge partner

organizations for IWRM, and bilateral and multilateral development cooperation agencies, will be requested to support RBOs in Asia in the following types of activities.

- Supporting NARBO members to improve water governance, including the enabling policy, institutional, and legal framework for IWRM, and the formulation of the action plans.
- Building capacity of RBOs in implementing IWRM, mainly through staff exchange and training among participating organizations.
- Supporting RBOs with technical advice in regard to the planning, conservation, development, and the proper and efficient operation and maintenance of water resources facilities, to improve IWRM.
- Fostering regional cooperation for improved management of water resources in transboundary river basins.

3) The scope of IWRM activities to be supported by NARBO will be approved by the NARBO General meeting.

4) NARBO's activities will initially focus on the monsoonal areas of Asia.



(3) Charter

NARBO Charter is like a constitution because it stipulates NARBO organization and activities. The charter was presented and explained by NARBO Secretariat on February 23, the first day of the First General Meeting, then it was duly approved without change. The

charter consists of introduction and five sections. These five sections are; "Section 1. Denomination and Working Language", "Section 2. Goal and objective", "Section 3. Activities", "section 4. Organizations" and "Section 5. Resources"

About the whole NARBO Charter, please refer to Appendix 1.

(4) Action Plan

"Draft Framework and Proposal for NARBO Action Plan (2004 – 2005)" was discussed in the workshop on February 24 and 25 at the First General Meeting.

The draft consists of three major categories, namely "Advocacy, raising awareness, and exchange of information, good practices on IWRM (Activities for the Whole of NARBO)", "Capacity Building (Activities for Regional Areas of NARBO)" and "Support for NARBO Activities".

The activities included in each category are as follows:

1) Advocacy, raising awareness, and exchange of information, good practices on IWRM

- NARBO Website
- NARBO members website
- E-newsletter
- Guidelines and sourcebook
- Centers of excellence
- Collaboration with knowledge partner organizations
- Performance benchmarking
- Workshops
- Transboundary water management

- RBO Annual Reports
- NARBO Annual Report
- Media relations
- Gender in development programs
- River basin information systems

2) Capacity Building

- Training courses for IWRM
- RBO staff exchange program
- RBO exchange visits
- Advisory visits to RBOs
- Scholarship programs
- RBO twining program
- ISO Certification

3) Support for NARBO Activities

- Technical Advisory Committee
- Financial Support Group

Based on "Draft Framework and Proposal for NARBO Action Plan (2004 – 2005)" and discussion in the workshop, "NARBO Work Plan" was drawn in January 2005. The work plan prescribes the specific activities, implementation programs, leading agencies and the results of each activity.

About the whole draft framework and proposal for NARBO Action Plan (2004-2005), please refer to Appendix 2.

(5) Members

At the First General Meeting, 43 organizations from 11 countries signed the Agreement to Membership in NARBO and 8 organizations signed the Expression of Interest for Membership in NARBO.

Eleven countries are Bangladesh, Sri Lanka, Thailand, Cambodia, Lao PDR, Vietnam, Malaysia, Indonesia, Philippines, Korea and Japan.

[List of NARBO Members and Organizations interested as the First General Meeting]

	Member	Interested
River Basin Organization (RBO)	13	2
Government Organization (GOV.)	15	5
Regional Knowledge Partner (RKP)	12	1
Inter Regional Knowledge Partner (IRKP)	2	0
Development Cooperation Agency (DCA)	1	0
Total	43	8

River Basin Organizations (RBOs)

Country		Organization
Bangladesh	M	Bangladesh Water Development Board
Indonesia	M	Jasa Tirta I Public Corporation
Indonesia	M	Jasa Tirta II Public Corporation
Indonesia	M	Jragung-Tuntang Basin Water Resources Management Unit (BWRMU) (Balai PSDA Jragung-Tuntang)
Japan	P	Japan Water Agency (JWA)
Malaysia	M	Selangor Water Authority
Pakistan	I	Water and Power Development Authority
Philippines	M	Agno River Basin Development Commission (ARBDC)
Philippines	M	Laguna Lake Development Authority (LLDA)
Korea	M	Korean Water Resources Corporation (KOWACO)
Sri Lanka	M	Mahaweli Authority of Sri Lanka
Thailand	I	Bang Pakong River Basin
Vietnam	M	General Office for RBOs in Vietnam
Vietnam	M	Cuu Long & Dong Nai River Basin Organization
Vietnam	M	Red River Basin Organization
total		15 RBOs (13 members and 2 Interested)

Governmental Organization (GOs)

Country		Organization
Bangladesh	M	Local Government Engineering Department, Ministry of Local Government, Rural Development and Cooperatives
Cambodia	M	Ministry of Water Resources and Meteorology
Cambodia	M	Department of Hydrology and River Works
P.R. China	I	Huai He River Water Resources Commission of Ministry of Water Resources
P.R. China	I	Taihu Basin Authority of Ministry of Water Resources
Indonesia	M	Directorate General of Water Resources
Indonesia	M	West Nusa Tenggara Regional Office of Settlement and Regional Infrastructure (Dinas Kinitraswi Provinsi NTB)
Indonesia	M	Bengawan Solo River Basin Development Project
Indonesia	I	Brantas River Basin Development Project
Indonesia	I	Seputih-Sekampung River Basin Development Project
Indonesia	M	Jeneberang River Basin Project
Japan	M	Water Resources Department, Land and Water Bureau, Ministry of Land, Infrastructure & Transport
Lao PDR	M	Water Resources Coordination Committee Secretariat
Malaysia	M	Department of Irrigation and Drainage
Philippines	M	National Water Resources Board
Sri Lanka	M	National Water Resources Authority
Thailand	I	Ministry of Natural Resources and Environment
Vietnam	M	Department of Water Resources Management, MoNRE
Vietnam	M	Sub Institute for Water Resources Planning
Vietnam	M	Department of Natural Resources and Environment of Dong Nai Province
total		20 Gov. Orgs (15 member and 5 Interested)

Regional Knowledge Partner (RKP)

Region		Organization
Southeast Asia	M	Global Water Partnership (GWP) SEARWP (Malaysia)
South Asia	M	Global Water Partnership (GWP) SAS RWP (Bangladesh)
South Asia	M	South Asia Network of River Basin Organization (SASNET-RBO)
Asia	M	Mekong River Commission Secretariat
Bangladesh	M	Institute of Water Modeling (IWM)
Thailand	M	Thailand Water Resources Association (TWRA)
Japan	I	Ritsumeikan Asia Pacific University (Japan)
Indonesia	M	Indonesia Water Partnership
Indonesia	M	The Foundation on Water Affairs ADHI EKA
Indonesia	M	Faculty of Engineering, Brawijaya University
Indonesia	M	Research Institute for Water Resources
Indonesia	M	Center for Environment & Civil Engineering Research
Indonesia	M	Post Graduate Study on Water Resources Management Faculty of Engineering Gadjah Mada University
total		13 Reg. KP (12 member and 1 Interested)

Bilateral and multilateral development cooperation agencies

Country		Organization
	P	Asian Development Bank
total		1 DCA

Inter-regional Knowledge Partner (IRKP)

Country		Organization
	P	Asian Development Bank Institute
	M	International Water Management Institute (IWMI)
total		2 Int-reg. KP

Note:

P: Promoter (Member), M: Member,

I: Interested to become a member,

KP: Knowledge Partner,

DCA: Development Cooperation Agency

The Global Environment Network (WWF International), Asia Pacific Association of Hydrology and Water Resources (APHW) and CapNet South Asia joined NARBO as pre-registered members as of May 2005.

About the whole NARBO members' list, please refer to Appendix 3.

(6) Chairperson Vice Chairperson and Secretariat

1) Chairperson



Chairperson: Dr. Basuki Hadi Moeljono
(Director General, Directorate General for
Water Resources, Ministry of Settlement and
Regional Infrastructures, Indonesia)

2) Vice Chairperson



Vice Chairperson: Mr. Palitha T. Senaratne
(Until 29 November 2004))
(Director General, Mahaweli Authority of Sri
Lanka)



Vice Chairperson: Dr.M.U.A. Tennakoon
(Serving as Acting Vice Chairperson from 30
November 2004)
(Director General, Mahaweli Authority of Sri
Lanka)

3) Secretariat

a) Secretary General



Secretary General: Dr. Masafumi Fukuda
(Executive Director, Japan Water Agency)

b) Vice-Secretary General



(From left to right)

Vice Secretary General: Mr. Toru Tatara
(Special Advisor to the dean, ADBI)

Mr. Wouter Lincklaen Arriens (Lead Water
Resources Specialist, ADB)

Dr. Takeyoshi Sadahiro (Director,
International Affairs Division, JWA)

c) Secretariat

NARBO Secretariat is composed of
Japan Water Agency (JWA), Asian
Development Bank Institute (ADBI),
both in Japan and Asian Development
Bank, in Philippines.

The headquarters of the secretariat is
located in JWA and its branches are
located in ADBI and ADB.

(7) Progress of the establishment

1) The Third World Water Forum. March 2003 in Japan

At the 3rd World Water Forum held in Kyoto, Osaka and Shiga in Japan in March 2003, WARDEC (Water Resource Development Public Corporation: the former body of JWA) had the session titled “A review of Comprehensive Water Resources Management in Japan -Shared

Lessons for Monsoon Asia-“. Participants in the session strongly recognized the importance of creating a partnership to promote IWRM in river basins in Asian countries and three organizations, namely JWA, ADB and ADBI signed the letter of intent



Photo 1. NARBO Session



Photo 2. Signing for the letter of intent



The letter of intent

About the full size of the Letter of the Intent, please refer to Appendix 4.

2) The inception meeting

The inception meeting was held as the side meeting of Southeast Asia Water Forum (SEAWF) in Chiang Mai, Thailand on November 29 2003 to lay the groundwork for the establishment of NARBO. Participants, who came from

RBOs, concerning organizations and regional centers of expertise for IWRM, discussed the content of activities and a framework for NARBO. The participating institutions expressed high expectations and strong demand for NARBO.



Photo 3. At the discussion



Photo 4. Group photo

2. NARBO First General Meeting

(1) Summary

The 1st General Meeting was held on February 24 and 25 in 2004 at Royal Orchid Garden Hotel and Condominiums in Batu, which is located close to the origin of the Brantas River in East Java. There were almost 130 participants from 16 countries.

The meeting consisted of the agenda

discussion, the workshop and the field.

And the only field trip was taken place on February 26.

The meeting was held with a lot of contributions from the organizing committee secretariat which was made up with PJT1 staff and the meeting ended in great success due to their devoted efforts.



Photo 5. At the closing ceremony

(2) Agenda discussion

Agenda discussion was held from 9 o'clock to 2 o'clock in the afternoon on February 24. The discussion started with the program titled "Welcome Remarks and Overview of the Meeting". After this, programs titled "Report of the Establishment of NARBO", "Opening Addresses", "Keynote Address and Official Opening", "Presentation on the NARBO

Charter followed by Question and Answer Session", "Signing Ceremony of the NARBO Charter", "Nomination and selection of Chairperson, Vice Chairperson, Secretary General and Vice Secretary General of NARBO" followed and "Draft Framework for NARBO Action Plan" was presented finally.

(3) Workshop

The Workshop was held from 2 o'clock in the afternoon to 6 o'clock in the evening on 24 February and 7 presentations were delivered.

On 25 February, participants were divided

into Group A and B. They had 9 presentations in each group first, they also had one-hour discussion in each group for recommendations for NARBO Action Plan.

About the detailed program, please refer to Appendix 5.

(4) Site visit

Participants went on a field trip to the working area of PJT1 on the last day of the meeting. They were divided into two groups; one visited the upper reaches of the Brantas River basin and the other visited the lower reaches through the courtesy of PJT1. The route of each trip was as follows.

<Upper stream area of Brantas River Basin>

quarters of PJT1 - Sengguruh Dam - Sutami Dam - Lahor Dam - Sand Pocket – Selorejo Dam

<Down stream area of Brantas River Basin>

Selorejo Dam - Irrigation Area - New Lengkong Barrage - Headquarters of PJT1

Jasa Tirta Public Corporation, its headquarters is in Malang, a State Owned Company was established in 1990 based on Indonesian Government Regulation No.5 of 1990 to perform water resources management in the Brantas River Basin which covers 11,800 km². It was transformed to PJT1 in 1999, and its working area expanded to cover the Bengawan Solo River Basin of 16,100 km² after 2002. PJT1 tasks include water quality and quality management, flood control, conservation, and management of water resources infrastructures and its facilities such as dams and barrages in the river basins.



Photo 6. Project explanation at PJT1 headquarters



Photo 7. New Lengkong Barrage

About the detailed information of the site visit, please refer to Appendix 6.

3. Records of activities

(1) Table of activities

Date	Activity Contents
February 2004	- The 1st NARBO General meeting was held in Indonesia. - The Workshop on IWRM was held in Indonesia.
April 2004	- Website was opened - Newsletter No.1 was issued
July 2004	- NARBO Secretariat participated the 2nd APHW (Asia Pacific Association of Hydrology and Water Resources) conference in Singapore. -NARBO Secretariat participated the Third South Asia Water Forum in Bangladesh
July-August 2004	-The First NARBO Training Course on IWRM was held in Thailand.
August 2004	- NARBO Website Meeting was held in Thailand.
October 2004	- NARBO Secretariat Meeting was held in Indonesia.
November 2004	- NARBO Benchmarking Workshop and Overall Session was held in Indonesia. -Twinning program between JWA and Indonesia NARBO was concluded in Indonesia.
December 2004	- Mr. Sukrasno, who was appointed from Chairperson of NARBO, participated International Conference on IWRM

(2) Website <URL: <http://www.narbo.jp>>

The website was opened in April 2004 in light of the importance of providing information, update, reminders about NARBO's activities, access to other websites, publications, case studies, electronic newsletters, guidelines and sourcebooks, on-line libraries and on-line forum for exchange of views. The website is managed by JWA in collaboration with ADB and ADBI and updated on regular basis.

To improve the website, the workshop on design and implementation was held in Bangkok in August 2004 and the contents of the website was renewed in December 2004 based on the discussion in the workshop.

Note: Website was fully renewed in January 2005

The database was opened partly and the search function was added in April 2005



NARBO Website

(3) Newsletter

Newsletter is recognized as another useful vehicle for NARBO activities along with website and JWA is in charge of newsletter. In the same manner, members' positive involvement regarding information gathering is essential. JWA has issued the preparatory, the first, the second and the third issue in February, April, August and December 2004, respectively. All newsletters were posted on NARBO website to make it possible for all members to see easily and also distributed to all members by e-mail. Topics in each issue are as follows.

- Preparatory Issue

"High Expectations of Asian Countries toward the Establishment of NARBO"

- First Issue

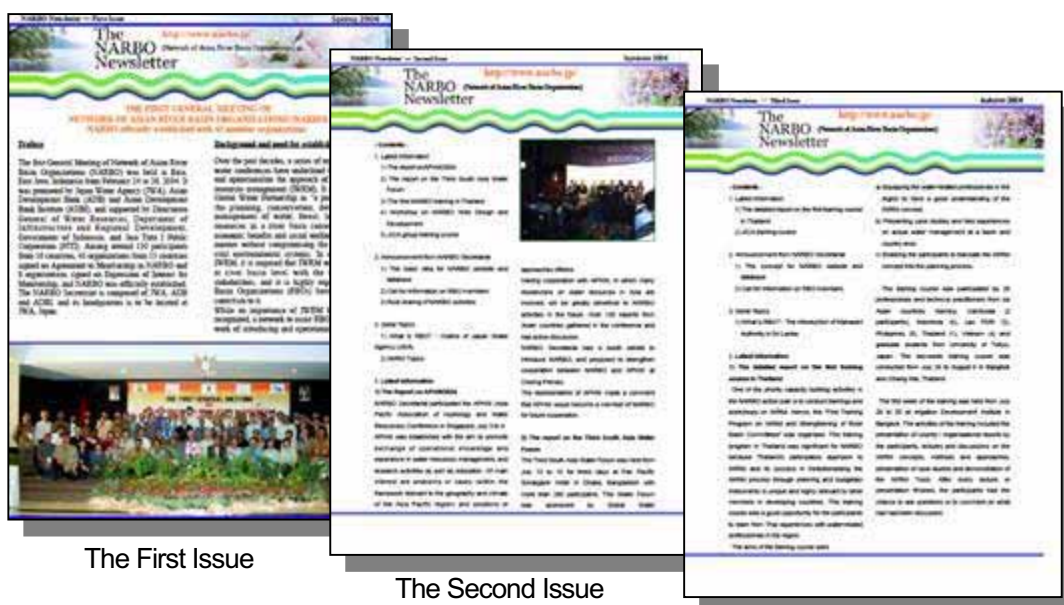
"The First General Meeting of Network of Asian River Basin Organizations (NARBO)"

- Second Issue

"The report on APHW 2004", "The report on the Third South Asia Water Forum", "The First NARBO training in Thailand", "Workshop on NARBO Web Design and Development", "What is RBO ? :Outline of Japan Water Agency (JWA)" (Serial Topics)

- Third Issue

"The detailed report on the first training course in Thailand", "The concept for NARBO website and database" and "What is RBO ? : The introduction of Mahaweli Authority in Sri Lanka" (Serial Topics)



The First Issue

The Second Issue

The Third Issue

About all back issues, please refer to Appendix 7.

(4) Workshops

1) IWRM workshop

This workshop was held as the part of the First General Meeting program. After NARBO's Constitutional Body had been selected. At this workshop, NARBO Action Plan was discussed and participants exchanged opinions on the basis of presentations made by appointed speakers from RBOs, governmental agencies and knowledge partners. The IWRM workshop consisted of three parts: the plenary session on the theme of "IWRM Framework and Implementation".

"IWRM Framework and Implementation" on the first day. Parallel sessions on the theme of "National Framework and Implementation" and "RBO's Experiences to Implement IWRM", followed by a plenary session to discuss the proposal for the NARBO Action Plan on the second day. NARBO Action Plan for 2004 - 2005 (Draft) was proposed, focusing on the following three main issues and activities in response to the results of the workshop.

2) Workshop on NARBO Website Design and Development

The workshop was held on August 7 and 8 for two days in Bangkok just after the First training course. 16 participants came from JWA, ADB, IWMI, IRRI (International Rice Research Institute) and 5 RBO

countries. In the workshop, 6 chunks and their contents were decided and JWA announced that they would make continuous efforts to develop better website with cooperation from participants.



Photo 8. Presentation from the secretariat



Photo 9. Discussion on necessary contents

3) Members' meeting

The members' meeting was held on the occasion of the benchmarking workshop in Indonesia in November 2004. At this meeting, they discussed 4 items below.

a. Portfolio of Water Actions (PWA) and commission on Sustainable Development (CAD13) by Mr. Yoshio Tokunaga, Deputy Director of Water Resources Department, Director of Water Resources Department,

Ministry of Land, Infrastructure and Transport Japan.

b. Brief Report of NARBO Activity after General Meeting

c. Toward the IWRM conference in Japan dated 7th Dec. 2005 (Consultation of the presentation from NARBO) as like a first message to the World from.

d. Explanation of meaning of submission of report, informed by letter in advance, for

the NARBO's future activity on
sourcebook.

4) Secretariat meeting

Several meetings were held in Bangkok, Thailand in March, Bangkok and Chiang Mai, Thailand in July-August, in Malang, Indonesia in November and Tokyo, Japan in December 2004 in line with workshops, training course etc.

(5) The First Training Course on IWRM

The First training course on IWRM was held in Bangkok and Chiang Mai from July 26 to August 6 in Thailand with a great contribution from Thailand Water Resources Association (TWRA). The training course consisted of two parts. The former was held in Bangkok from July 26 to July 31 and consisted of lectures. The latter one was held in Chiang Mai from August 2 to August 6 and consisted of many site visits.



Photo10. At the lecture (Bangkok)

There were twenty participants from Vietnam, Laos, Cambodia, Thailand, Philippines and Indonesia and lectures came from Japan, Thailand (TWRA), Indonesia (JASA TIRTA), Korea (KOWACO) and a various International Agencies (MRC, IUCN, IWMI and UNESCAP). All participants learned and worked very hard every day.

Especially in Chiang Mai, as participants went out to visit the sites in the morning and



Photo11. Group presentation (Chiang Mai)

got back to the hotel in the evening and had discussions and worked on individual

assignments and group assignments (five groups). On the last day of training in Chiang Mai, all participants made presentations about their assignments and each group also did the same thing. After all presentations finished, according to the rating by secretariat, three individuals and one group were awarded.



Photo12. At site visit (At Mae Kuang Dam, Chiang Mai)

About the detailed program, please refer to Appendix 8.

(6) Benchmarking activity

1) Introduction

ADB and IWMI are in charge of benchmarking. Benchmarking has been defined as "a systematic process for securing continual improvement through comparison with relevant and achievable internal or external norms and standards" (Malano & Burton, 2001). The overall aim of benchmarking is to improve an organization's performance as measured against its mission and objectives. Benchmarking implies comparison - either against similar organizations, or organizations performing similar functions or processes. With the relatively rapid adoption of River Basin Organizations (RBO) as the key institutional

element supporting the adoption and implementation of integrated water resources management (IWRM) in Asian river basins, there is a demand for systematic methods for identification of best practices in basin management. NARBO supports the expansion of RBO and IWRM principles in the region. The Framework for NARBO Action Plans (2004-2005) identifies Performance Benchmarking as one of the priority activities for the network. Therefore, the first benchmarking meeting was held on November 29 and 30 at Batu-Malang, East Java, Indonesia with 55 participants from 11 countries.

2) Members' workshop

The workshop achieved its objective of having a shared vision of benchmarking for RBOs, an agreed set of performance indicators, and a set of RBOs wanting to pilot the benchmarking approach, including a peer review process

a) Benchmarking System Design

The workshop outputs would be used as basis for developing the benchmarking system.

The International Water Management Institute (IWMI) Bangkok office would develop the guidelines and format for the benchmarking system.

b) Benchmarking Pilots

Eleven NARBO members agreed to serve as pilots for the benchmarking program. They would meet again in the first quarter of 2005 to discuss further the benchmarking system design and plan of action. The eleven volunteers are as follows.

RBOs	Mahaweli Authority of Sri Lanka	Sri Lanka
	Bang Pakong River Basin	Thailand
	Jasa Tirta I Public Corporation	Indonesia
	Jasa Tirta II Public Corporation	Indonesia
	Laguna Lake Development Authority	Philippines
	Red River Basin Organization	Viet Nam
Gov. Org.	Jeneberang River Basin Project	Indonesia
	Balai PSDA Jragung-Tuntang	Indonesia
	Dep. of NRE, Dong Nai Province	Viet Nam
	Ping River Basin	Thailand
	KOWACO	Korea



Photo13. Facilitators at the session



Photo14. Group photo

(7) Twinning program

1) JWA and Indonesian NARBO

The MOU and agreement were concluded as a first case of the twinning program between JWA and Indonesian NARBO on November 29 at benchmarking workshop and overall session.

In the launching ceremony, persons as representative of both sides exchanged the MOU and others. After the reading and exchange of (1) MOU, (2) Agreement of exchange of personnel on Twinning program between JWA & PJT I & PJT II, and

(3) Agreement of exchange of information on Twinning program between Indonesian NARBO and JWA, Ir. Sukrasno, Mr. Ota and Dr. Ir. Basuki gave congratulation speech to all participants from many members attending the workshop.

Based on (2), Two JWA staff will be dispatched to Jasa Tirta I and Jasa Tirta II for three months from April 2005 to enhance the ability on IWRM.



Photo 15. Exchange MOU between Mr.Ota and Mr.Sukrasuno



Photo 16. Dr.Basuki gives congratulation speech



Signed memorandum of understanding

About the full size of the memorandum of understanding, please refer to Appendix 9.

2) KOWACO and Indonesian NARBO

After the signing program between JWA and Indonesian NARBO, another twinning

program between KOWACO and Indonesian NARBO was launched on December 15 2004.

(8) Public relation activities

1) The Third South Asia Water Forum

The Third South Asia Water Forum was held from July 13 to 15 for three days in Dhaka, Bangladesh with more than 250 participants. The keynote speech titled "What's NARBO -Process to its establishment and goal-" was made by NABO Secretariat at "River Basin

Organization/Area Water Partnership" session on July 14. The secretariat also distributed NARBO newsletters and advertised NARBO. During the forum, some of the participants asked him what to do to become its member.



Photo17. Presentation by NARBO Secretariat



Photo18. Exhibition for NARBO promotion

2) The Second Conference of APHW

It is very important for NARBO activities to work closely with APHW which was formed in September 2002 by researchers who are studying on water resources in Asian region. About 150 experts from Asian region gathered at the conference and had heated discussions.

At the conference, NARBO Secretariat

placed the booth for the exhibition and made the presentation about NARBO and proposed to strengthen the tie with APHW at the closing plenary. APHW representative said that APHW would become a NARBO member and do its activities hand in hand.

3) The International Conference on IWRM

The conference was held in Tokyo from December 6 to 8 for three days 2004. At the plenary session on December 7, Mr. Sukrasno Sastro Hardjono, who was appointed from Chairperson of NARBO, gave the presentation "New Network of IWRM for Asia - Network of Asian River Basin Organizations". In the presentation, he pointed out that "Asian countries absolutely have important roles and responsibility toward the resolution on water management in the World.



Photo 19. Presentation by Mr. Sukrasno

About the whole his speech, please refer to Appendix 10.

4. Efforts for information collection

NARBO Secretariat distributed the questionnaire to attempt to collect members' information on the occasion of the benchmarking workshop in Indonesia in November. Other than this effort, the secretariat

sometimes e-mailed questions to members on specific items to collect information. The results of these questionnaire and questions are expected to open to members on website at the proper occasion.

5. NARBO members' information

(1) Jasa Tirta 1 Public Corporation (PJT1)

1) Summary

Jasa Tirta I Public Corporation (hereinafter referred to as PJT I) was established based on Government Regulation No. 5 of 1990 and revised by Government Regulation No. 93 of 1999. Then Presidential Decree No.129 of 2000 stipulating additional basin of Bengawan Solo to be managed. The responsibility of PJT I is to manage and conserve the water resources and the infrastructures in the Brantas River and Bengawan Solo River basins for the regional and national development benefit.

Main tasks of PJT I are as follows: perform operation and maintenance of the water resources infrastructures, economic dealings in water utilization, river basin management including water resources conservation, development and utilization, and rehabilitation of the water resources infrastructures.

PJT I provides the water service (supply) to Municipal Drinking Water Enterprise (PDAM), State Electric Company (PLN), industries, plantation, fisheries, flushing and other utilization.

2) Outline of the organization

PJT I was established based on Government Regulation No. 5 of 1990 and revised by Government Regulation No. 93 of 1999. The responsibility of PJT I is to manage and conserve the water resources in the Brantas River and Bengawan Solo River basins for the regional and national development benefit.

The purpose and objective of PJT I are to conduct public utilization on water resources in sufficient and high quality manner for fulfilling public needs, and carry out specific tasks given by the Government in performing river basin management and to join national economic development by participating on national development program especially in water resources management sector.

Financial source for undertaking of the main tasks in water resources management in the basin carried out by PJT I, are secured from the beneficiaries participation. Beneficiaries gradually bear the operational cost of the assigned corporate body. Basically, beneficiaries render their participation in the following sources: beneficiaries pay for water services, rendered in form of water fee and tax; polluters are obliged to pay pollution fee and tax (not yet implemented but legal background is being drafted); Government finances social services like flood control, water quality control, and water resources conservation.

Main tasks of PJT I based on Ministry of Public Works Regulation No. 56/PRT/1991 on General Policy of PJT I Management (Article 6) are as follows:

- Perform operation and maintenance of the water resources infrastructures
- Economic dealings in water utilization
- River basin management including water resources conservation, development and utilization

-
-
- Rehabilitation of the water resources infrastructures

PJT I has vision and mission as follows:

Vision: Government Owned Company that capable to manage water resources in professional, innovative and sustainable manner supported by all stakeholders.

Mission:

- To conduct services for public utilization on water resources in sufficient and high quality manner for fulfilling public needs
- To manage water resources effectively and efficiently including O&M activities of water resources infrastructures, conservation, making efficient use of water and controlling destructive force of water according to the task given by the Government based of stakeholders' participation.
- To conduct corporation management in order to reach healthy condition.

Responsibilities of PJT I include supervision of water resources master plans, review of existing master plans, monitoring of both river water quality and industrial effluent, data analysis and modeling. PJT I is also involved in increasing public awareness and is concerned with pollution issues, inform and educate the public through public campaigns. PJT I provides the water service (supply) to Municipal Drinking Water Enterprise (PDAM), State Electric Company (PLN), plantation, fisheries, maintenance flow and other utilization.

1) Activities for NARBO

In 2004, PJT I carried out the activities as summarized below:

- The first General Meeting of Network of Asian River Basin Organization (NARBO) from February 24 to 26, 2004 in Batu, East Java, Indonesia (Organizing Committee).
- PJT I participated in the first NARBO training on IWRM from July 26 to August 6, 2004 in Thailand.
- PJT I participated in the Workshop on NARBO Web Design and Development from August 7 to 8, 2004 in Thailand.
- PJT I participated in the Small Scooping Workshop of RBO Benchmarking Activity at 12 October 2004 in Jakarta, Indonesia.
- PJT I participated in the NARBO Members Consultation of RBO Benchmarking Activity from November 29 to 30, 2004 in Jakarta, Indonesia (Organizing Committee).
- PJT I participated actively in Indonesian NARBO Secretariat (Vice Executive Director)

4) Topics

a. Floods

Flood and debris flow took place in Brangkal sub basin and Brantas Origin area on February 3-4, 2004 due to devastated watershed in the upper part of Brantas basin. The debris flow destroyed some part of conservation area belongs to PJT I and human settlements in Tulungrejo Village. The recorded rainfall data at some stations at that time showed very high magnitudes such as recorded at Wonosalam 105 mm (10 hours) and Trawas 242 mm (8 hours).

Due to heavy rains in the Brantas River basin on December 3-4, 2004, the tributaries capacity could not retain the rainwater, then flood occurred in some areas in the middle reach of the basin at that time. Those areas are located in Blitar, Kediri, and Tulungagung Regencies. The discharge has caused the riverbanks collapsed in some points and inundation occurred and caused damages of housing, bridges and paddy fields. The recorded rainfall data within 24 hours at some stations in December 3, 2004 showed very high magnitudes such as recorded at Tunggorono (441 mm), Wlingi (366 mm), Sumberagung (244 mm), Semen (217 mm), Doko (277 mm), Wates Wlingi (267 mm) and Birowo (371 mm). The recorded discharges at some points also showed very high magnitudes as recorded at Lengkong Barrage (950 m³/sec) and Porong River (1,194 m³/sec). These magnitudes are considered high compared to the 50 year-flood discharge that is only 900 m³/sec.

b. International Conferences

In 2004, PJT I participated in some international conferences e.g. International Conference on IWRM in Tokyo on 7 December 2004 organized by Japan Water Forum and International Conference on Monitoring, Prediction and Mitigation of Water-Related Disasters (MPMD-2005), in Kyoto, on 12-15 January 2005, organized by Disaster Prevention Research Institute (DPRI), Kyoto University.

c. Certification of SNI-19-17025-2000 (ISO/IEC 17025) for PJT I Water Quality Laboratory

Based on the assessment result carried out by National Accreditation Committee (this committee has been acknowledged by Asia Pacific Laboratory Accreditation Cooperation (APLAC) and International Laboratory Accreditation Cooperation (ILAC) for test laboratory accreditation system) on May 17-19, 2004, the Water Quality Laboratories of PJT I have fulfilled the conditions as test laboratory and have the rights to obtain its Certification of SNI 19-17025-2000.

The consideration of PJT I to implement quality system of SNI 19-17025-2000 is to anticipate the stakeholders' requests and management necessity toward augmentation of the service and to create water quality analysis and monitoring system that fulfilled the International standards that finally would yield precise water quality data, efficient, effective and consistent monitoring system in order to improve the best performance of the Corporation.

d. International Cooperation

PJT I has international cooperation with some research agencies e.g. Disaster Prevention Research Institute (DPRI) of Kyoto University (started in 2000), Yamanashi University and National Institute for Land and Infrastructure Management (NILIM) – Ministry of Land, Infrastructure and Transport, Japan, in many research area e.g. forecasting and monitoring of flood, debris flow, rainfall characteristic in volcanic area of Asian Monsoon Area especially in Brantas basin.

(2) Jasa Tirta 2 Public Corporation (PJT2)

1) Outline of the organization

Organization Structure of Jasa Tirta II Public Corporation has a 4 (four) director, are : (1) President Director (2) Administration and Finance Director, (3) Technical Director (4), Operation and Maintenance Director.

The corporation organization structure is made up of 3 (three) Directorates, each led by a director. Each director direct a number of Division (5 Division) and Bureaus heads (7 Bureau).

The number of employees of Jasa Tirta II Public Corporation as per June 1, 2004 is 1,914 people

2) Activities for NARBO

PJT II carried out the activity following in 2004:

- PJT II held the First General Meeting of Network of Asian River Basin Organization (NARBO) from February 24 to 26, 2004 in Batu, Malang East Java Indonesia.
- PJT II held the first NARBO training Course on IWRM from July 26 to August 6, 2004 in Thailand with the Ministry of Natural Resources and Environment. Thailand, Thailand Water Resources Association, Asian Development Bank (ADB) and Asian Development Bank Institute (ADBI)
- PJT II as the host of the Small Scooping Workshop of RBO Benchmarking Activity at 12 October, 2004 in Jatiluhur, West Java Indonesia.
- PJT II participated the NARBO Members Consultation of RBO Benchmarking Activity from November 29 to 30, 2004 in Batu, Malang East Java Indonesia.
- PJT II concluded the treaty of friendship with Japan Water Agency at November 29, 2004. (Twinning Program).
- Symposium and Discussion with KOWACO about the Twinning Program at December, 1, 2004 in Jatiluhur , West Java Indonesia
- Signatories Agreement of Exchange of Personnel on Twinning Program between KOWACO , PJT I and PJT II on Desember 15, 2004.

3) Topics

a. International Conferences

- ICOLD 72nd Aannual Meeting, Seoul-Korea, 16- 22 Mei 2004
- World Water Forum, Brazil 2004

(3) Japan Water Agency (JWA)

1) Outline of the organization

Water Resources Development Public Corporation (WRDEC) was transformed into Japan Water Agency (JWA), Incorporated Administrative Agency in October 2003.

Incorporated administrative agencies are established and given objectives and missions by the national government to carry out “administrative tasks and projects, where implementation should ensure public benefits such as stable public life and social and economic activities”. The objective and the mission of JWA are as follows.

Objective: To ensure stable supply of water to areas that need to use water because of industrial development and population concentration.

Mission: Construction (Projects for increasing water supply are limited to the ongoing projects.), reconstruction and operation of completed facilities based on the Basic Plan for Water Resources Development.

2) Activities for NARBO

JWA did or involved in a series of activities as NARBO Secretariat and also as one of NARBO members (as an RBO) the name of activities and date are summarized below.

a. Activities as NARBO Secretariat

- The First General Meeting of Network of Asian River Basin Organization (NARBO)

The meeting was held from February 24 to 26 at Batu in Indonesia.

- Electrical newsletter

JWA issued NARBO newsletter four times according to the work plan.

- NARBO web site

JWA set up web on March 9, 2004, and has operated and maintained it on regular basis.

- The Second Asia Pacific Association of Hydrology and Water Resources (APHW) Conference

The Conference was held from July 4 to 9 in Singapore.

- The Third South Asia Water Forum

The forum was held from July 13 to 15 at Dhaka in Bangladesh.

- The First NARBO training course on IWRM

The training course was held from July 26 to August 6 at Bangkok and Chiang Mai in Thailand.

- Workshop on NARBO Web Design and Development on August 7 and 8 at Bangkok in Thailand.

- Benchmarking Workshop and Overall Session on November 29 and 30 at Batu-Malang in Indonesia

b. Activities as one of NARBO members

- The First Integrated Water Resources Management (IWRM) JICA training course

The training course was held from October 12 to 30 with nine trainees from nine countries in South Asia and Southeast Asia.

- Twinning program was signed between JWA and Indonesian NARBO at Benchmarking Workshop and Overall Session.
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- Obtainment ISO 14001 certification forward ensuring stable water supply and preserve the environment in December 2004.

3) Topics

Topics in 2004 are summarized below.

a. Floods

Due to series of concentrated heavy rain during the rainy season and record-high ten landed typhoons, seventeen JWA dams did sixty six times flood control.

b. The First JICA training course on Integrated Water Resources Management (IWRM)

JWA had the First JICA training course on IWRM from October 12 to 30 with nine participants from nine countries.

c. ISO certification

JWA got ISO14001 on December 3.

d. The 28th "Water Week"

JWA joined a various "Water Week" related events.

(4) Jragung-Tuntang Basin Water Resources Management Unit

1) Summary

BWRMU Jragung Tuntang is one of the Technical Implementation Unit of Water Resources Development Service Central Java Province and establish in 1998. The main duty is operation and maintenance for Irrigation system and structure. The finance to sustain the activity is allocated from Central Java Province budget (local government budget). Total employee in 2004 is 257 persons.

2) Activities for NARBO

BWRMU Jragung Tuntang was participated on:

- a. First general meeting of NARBO, February 24 to 26, 2004 in Batu East Java, Indonesia.
- b. NARBO members consultation of R.B.O bench marking, November 29 to 30, 2004 in Batu East Java, Indonesia.

3) Topics

a. Flood

Big flood occurred in February 2004 at middle part of Tuntang River, and the impact was levee failure in 3 location.

b. New projects

Flood management in selected river basin project (FMSB) activity done by DHV Consultant for Jragung Tuntang River Basin in April to November 2004. The Objective is feasibility study to solve flood & drought in this area.

(5) International Water Management Institute (IWMI)

1) Summary

The International Water Management Institute (IWMI) is an international research organization and one of fifteen centers of the Consultative Group on International Agricultural Research (CGIAR). Our mission is to improve water and land resources management for food, livelihoods and nature. The Institute is a non-profit institution and a Future Harvest Center. IWMI's headquarter is in Colombo, Sri Lanka with regional and country offices in many Asian and African countries. IWMI joined NARBO at the first AGM in Malang, Indonesia on February 2004 as an International Knowledge Partner.

2) Outline of the organization

IWMI was established in 1984 in Sri Lanka as the International Irrigation Management Institute (IIMI) with an initial mandate to improve the management of irrigation systems with a specific focus on the institutional and organizational issues impacting irrigation performance. In 1998 the institute name was changed to the International Water Management Institute (IWMI) to reflect the broader research mandate the Institute had implemented on water resources systems as a whole and improved water management in rivers basins through better technologies, policies, institutions, and management.

IWMI conducts a global research and capacity building program to improve water resources and irrigation management so as to reduce poverty and to conserve the environment, maintain food security, and provide poor and disadvantaged people better access to water resources. Research is implemented through an extensive network of national, regional and international partner organizations with IWMI offices in many countries in Asia and Africa.

The objectives of the IWMI research program are to:

- a. Identify the larger issues related to water management and food security that need to be understood and addressed by governments and policymakers.
- b. Develop, test and promote management practices and tools that can be used by governments and institutions to manage water and land resources more effectively, and address water scarcity issues.
- c. Clarify the link between poverty and access to water and to help governments and the research community better understand the specific water-related problems of poor people.
- d. Help developing countries build their research capacities to deal with water scarcity and related food security issues.

IWMI is a member of the Future Harvest group of agricultural and environmental research centers. The Institute has an annual budget of approximately US\$ 25 Million and receives its principal funding from 58 governments, private foundations, and international and regional organizations known as the Consultative Group on International Agricultural Research (CGIAR). Support is also received from the governments of Ghana, Pakistan, South Africa and Thailand. These organizations are dedicated to contributing research and knowledge to eradicate poverty.

The IWMI management team consists of the Director General, Deputy Director General

(Operations), and the four directors of the Research; Global Research Division; Africa Regional Program and Asia Regional Program. The research program is managed by five theme Leaders and Head of IWMI offices.

3) Activities for NARBO

IWMI joined NARBO at the first AGM in Malang, Indonesia on February 2004 as an International Knowledge Partner. During the AGM, IWMI offered to assist NARBO on a number of the items identified in the work plan and has subsequently taken an active part in:

- a. Design and development of the NARBO web page
- b. Development of guidelines for benchmarking RBO's
- c. Implementation of training in River Basin Management and organizations in South Asia
- d. Support to river basin organizations in Thailand through field studies and site visits

6. Collected materials through activities

There are titles and authors' of collected reports and materials through NARBO activities. Most of the reports and materials are stored in NARBO database.

(1) The Third World Water Forum

- A Review of Comprehensive Water Resources Management in Japan -Shared Lessons for Monsoon Asia- (Water Resources Development Public Corporation, Japan)
- Japan's Experiences on Water Resources Management. (Water Resources Development Public Corporation, Japan)
- Challenges in Sustaining the Benefits of Brantas River Basin Development. (Jasa Tirta 1 Public Corporation, Indonesia)
- Present Situation and Future Theme of the Water Resources Development and Management in Peninsular Malaysia. (Department of Irrigation and Drainage, Malaysia)
- What Does WARDEC Do For You ?. (Water Resources Development Public Corporation, Japan)

(2) The First General Meeting

1) Plenary Session

- Experiences on River Basin Management in Indonesia's RBO. (Jasa Tirta 1 and Jasa Tirta 2 Public Corporation, Basin Resources Management Unit of Jragung-Tuntang, Indonesia)
- The Japanese efforts on international water-related issues. (Land and Water Bureau, Ministry of Land, Infrastructure and Transport, Japan)
- JWA and Its Experience on River Basin Management. (Japan Water Agency, Japan)
- Sustainable Water Resource Management Framework: IWRM in Korea. (Korean Water Resource Corporation, Korea)
- Cooperation in the Mekong Basin in Implementing Integrated River Basin Management (IRBM): From Negotiation Stage to a More Concrete Joint Planning and Implementation. (Mekong River Commission, Cambodia)
- River Basin Organizations - Lessons from recent research.(International Water Management Institute, Sri Lanka)
- Integrated Water Resources Management and Water Efficiency Plans by 2005. Why, what and how. (Global Water Partnership)

2) Parallel Session

a National Framework for IWRM

- Integrated Water Resources Development and Management in India. (Ministry of Water Resources, India)
 - Water Resources Management and Development in Cambodia. (Department of Water Resources Management and Conservation, Ministry of Water Resources and Meteorology, Cambodia)
 - Bangladesh and Basinwide Management of Waters of the Ganges, Brahmaputra, and Meghna Rivers. (Joint Rivers Commission and Ministry of Water Resources, Bangladesh)
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- Implementation of IWRM Principles and Processes for Management and Development of Indonesian Water Resources. (Directorate General Water Resources, Ministry of Settlement and Regional Infrastructure, Indonesia)
 - Indonesia Water Partnership. (IWP, Trustee, Board of HATTA, HATHI & INACID)
 - Water Resources Management in Lao PDR. (Water Resources Coordination Committee Secretariat, Lao PDR)
 - Malaysia's Experience on Integrated Water Resources Management. (Department of Irrigation and Drainage, Malaysia)
 - Financing in Malaysia's IWRM. (Department of Irrigation and Drainage, Malaysia)
 - Integrated Water Resources Management in Nepal. (Ministry of Water Resources, Nepal)

b RBO's Experiences to Implement IWRM

- Water Resources Governance in China. (Ministry of Water Resources, China)
- Integrated Water Resources Management in Pakistan. (Water and Power Development Authority, Pakistan)
- Implementation of Integrated Water Resources Management Framework in the Laguna De Bay Region. (Laguna Lake Development Authority)
- Role of Agno River Basin Development Commission in River Basin Master Planning. (Agno River Basin Development Commission)
- Role of Mahaweli River Basin Management Agency in South Asia Network of River Basin Organizations (SASNET - RBO). (Mahaweli Authority of Sri Lanka, Sri Lanka)
- Integrated Water Resources Management in a River Basin Context in Thailand. (Department of Water Resources, Thailand)
- New Phenomena on Water Resources Management of Bang Pakong - Parchin Buri - Tonelesap Basin, During 1999-2004. (Bang Pakong-Prachinburi-Tonlesap River Basin Committee, Thailand)
- Putting IWRM Into Practice: A Case Study of Thailand. (Thailand Water Resources Association, Thailand)
- Updated Policy on RBO in Vietnam. (Ministry Agriculture and Rural Development, Vietnam)

3) Other presented papers

- Launching the Network of Asian River Basin Organizations Building Capacity for Tomorrow's Water Managers. (Asian Development Bank, Philippines)
- Basin-based Governance for Integrated Water Resources Management: Prospects and Challenges. (Ritsumeikan Asia Pacific University, Japan)
- River Basin Committees Development in Thailand: An Evolving Participatory Process (EPP) (Thailand Water Resources Association, Thailand)

(3) The First Training Course on IWRM in Thailand (Lecturers' paper)

- Water Resources in Japan and the development of IWRM in Kiso River. (Japan Water Agency, Japan)
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- Contribution of "Traditional PIM that is harmonized with conditions in Asia" to enhancement of Integrated Water Resources Management. (Japan Water Agency, Japan)
 - Putting IWRM into Practice: A Case Study of Thailand. (Thailand Water Resources Association, Thailand)
 - Implementation of the Quality management System ISO 9001: 2000 in Integrated water resources Management the Brantas River Basin – Indonesia. (Jasa Tirta 1 Public Corporation, Indonesia)
 - Evolving Participatory Process of River Basin Management in Thailand. (Thailand Water Resources Association, Thailand)
 - Rivers in jeopardy and the role of civil society in river reservation: Thai experiences.(The Coordinating Committee for the Protection of the Ping River and Environment, Thailand)
 - Public Participation: Key Concepts and Strategic Elements in IWRM. (United Nations Economic and Social Commission for Asia and the Pacific, Thailand)
 - Contribution of "Traditional PIM that is harmonized with conditions in Asia" to enhancement of Integrated Water Resources Management". (Japan Water Agency, Japan)
 - Participatory Process in Strategic Planning and Management for IWRM. (United Nations Economic and Social Commission for Asia and the Pacific, Thailand)
 - Participatory Processes in IWRM. (Asian Development Bank)
 - Environmental Flow. (Mahidol University)
 - Integrated Survey. (Mahidol University)
 - Wetlands Management. (IUCN-The World Conservation Union)
 - Integrated Water- Supply Management Systems. (Korea Water Resources Corporation, Korea)
 - Evolution of approaches and tools for basin planning towards IWRM. (United Nations Economic and Social Commission for Asia and the Pacific, Thailand)
 - Basin Planning. (Korea Water Resources Corporation, Korea)
 - Strategic Planning and Management (SPM) Tools for IWRM. (United Nations Economic and Social Commission for Asia and the Pacific, Thailand)
 - Exploring opportunities for transboundary water cooperation through basin development planning.
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AFTERWORD FROM THE SECRETARY GENERAL

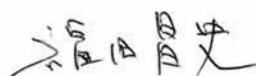


About one and a half year has passed since NARBO was established at the First General Meeting at Malang, in Indonesia in February 2004. We, NARBO Secretariat, feel very happy and relieved that we issue the first NARBO Annual Report that summarizes the activities in 2004.

We implemented the various activities according to the work plan that was compiled based on "The draft framework and proposal for NARBO Action Plan (2004-2005)" with close cooperation with members. Main activities in 2004 are, 1) Administration of website 2) Newsletter 3) Workshop 4) Training course on IWRM 5) Benchmarking activity 6) Twinning program 7) Public relations on NARBO. The details of each activity please look through the annual report.

NARBO is the network among members and NARBO activities fully depend on members' ownership. In this sense, active involvement into NARBO activities from members is essential. We did a number of activities in 2004, but to develop NARBO activities and pursue its goal, I strongly expect continuous and further involvement from members.

Secretary General of NARBO

A handwritten signature in black ink, consisting of stylized Japanese characters.

Dr. Masafumi Fukuda

Appendix

Appendix 1

NARBO Charter

Introduction

The world community has recognized the importance of managing water resources in a more integrated manner. Over the past decades, a series of regional and global water conferences, including the World Water Forums in 1997, 2000, and 2003, have underlined the need to adopt and operationalize the approach of integrated water resources management (IWRM), which is defined by the Global Water Partnership as *“a process to improve the planning, conservation, development, and management of water, forest, land, and aquatic resources in a river basin context, to maximize economic benefits and social welfare in an equitable manner without compromising the sustainability of vital environmental systems.”*

By focusing on the management of water and related resources in a river basin context, it is implied that IWRM will be undertaken at basin level with the involvement of stakeholders at the basin level. The water conference in Dublin in 1992 referred to the need to manage water resources *at the lowest appropriate level*. This has become one of the basic principles underpinning the IWRM approach, and it has led to increased recognition that river basin organizations (RBOs) can realize IWRM at the basin level. Since Dublin, the world community has also recognized the importance of promoting gender and development work as part of the IWRM approach to ensure that women participate in water management at all levels.

Many forms of RBOs have been established in recent decades, and countries have developed various governance approaches for RBOs, for example, river basin commissions in the People's Republic of China, river basin parliaments in France, river basin committees in Australia, river basin authorities in the United States and Sri Lanka, a lake basin development authority in the Philippines, water resources public corporations in Japan and Indonesia, inter-state RBOs like the river basin tribunals in India and the Murray-Darling Basin Commission in Australia, and international RBOs in the Mekong basin, the Syr and Amu Darya basins, and in the Tumen basin.

Some RBOs were established decades ago and have ceased to exist, while many new RBOs have been established recently. Some RBOs have a large

technical capacity, employing thousands of staff, while others may employ just a handful, like the newly established river basin committees in Southeast Asia. While there are many differences between these RBOs, they share a common mission, which is to operationalize IWRM in their respective river basins.

A network to assist RBOs in Asia in their work of introducing and operationalizing the IWRM approach does not yet exist. Consequently, RBOs lack opportunities for exchanging information and experience on their operations, and access for their staff to training and capacity building that draws on the technical and non-technical experience in managing water resources in Asia.

The need for partnerships for action to achieve IWRM was recognized at the 3rd World Water Forum held in Kyoto, Osaka, and Shiga, in the Lake Biwa and Yodo River Basin, Japan, in March 2003, where it was noted that several developed and developing countries in Asia have already established RBOs to implement IWRM. The 3rd World Water Forum highlighted the need to support these RBOs through knowledge sharing and capacity building, especially in developing countries.

The 3rd World Water Forum also emphasized the contributions that IWRM can make to improving the water security of the poor, by incorporating the needs of the poor explicitly in water policies and management practices at all levels.

Recognizing the need for networking and capacity building in the implementation of IWRM, the Water Resources Development Public Corporation of Japan (recently reconstituted as the Japan Water Agency), the Asian Development Bank, and the Asian Development Bank Institute decided at the 3rd World Water Forum in March 2003 in Kyoto, Japan, to collaborate in launching a Network of Asian River Basin Organizations (NARBO), and a letter of intent was signed at the Forum on 21 March 2003.

Note: This Charter is intended to guide NARBO in its start-up phase, during which membership by RBOs and partner organizations will be promoted and initial activities started to meet immediate needs of RBOs for training and

exchange of information and experience. It is expected that the Charter will be reviewed and revised by the NARBO General Meeting when membership has grown, a program of activities is agreed and under implementation, and membership fees can be introduced.

Section 1. Denomination and Working Language

- (1) This new initiative is entitled the Network of Asian River Basin Organizations (hereafter NARBO).
- (2) The language to be used is English.

Section 2. Goal and Objective

The goal of NARBO will be to help achieve IWRM in river basins throughout Asia.

NARBO's objective will be to strengthen the capacity and effectiveness of RBOs in promoting IWRM and improving water governance, through training and the exchange of information and experience among RBOs and their associated water sector agencies and knowledge partner organizations in Asia and to advise on the establishment of RBOs in Asia.

Section 3. Activities

To promote IWRM in Asia, the focus of NARBO's activities will be as follows:

- (1) Activities for the whole of NARBO

The activities joined by all members of NARBO will be as follows:

- (a) Advocacy and raising awareness for IWRM among RBOs, water sector apex bodies, and leading water sector agencies in the region, mainly through regional workshops.

- (b) Sharing of information, good practices, and lessons learned for IWRM among the participating organizations, mainly by operating databases and a website for IWRM exchanging information, and by sending a newsletter by email as well as posting on the web site and holding (sub) regional workshops.

(2) Activities for regional areas of NARBO

RBOs, national and federal governmental organizations with expertise in IWRM, regional and interregional knowledge partner organizations for IWRM, and bilateral and multilateral development cooperation agencies, will be requested to support RBOs in Asia in the following types of activities.

- (a) Supporting NARBO members to improve water governance, including the enabling policy, institutional, and legal framework for IWRM, and the formulation of the action plans.
 - (b) Building capacity of RBOs in implementing IWRM, mainly through staff exchange and training among participating organizations.
 - (c) Supporting RBOs with technical advice in regard to the planning, conservation, development, and the proper and efficient operation and maintenance of water resources facilities, to improve IWRM.
 - (d) Fostering regional cooperation for improved management of water resources in transboundary river basins.
- (3) The scope of IWRM activities to be supported by NARBO will be approved by the NARBO General Meeting.
- (4) NARBO's activities will initially focus on the monsoonal areas of Asia.

Section 4. Organizations

Article 4.1. Membership

- (1) Membership will be open to the following types of organizations.
- (a) RBOs, defined as organizations that have been officially recognized by the government of their country as having a mandate to promote and implement IWRM at the river basin level.
 - (b) National and federal/ provincial / local governmental organizations in charge of water administration in the countries which implement or are interested in promoting and implementing IWRM at the level of river basins. This includes water sector apex bodies and leading water agencies.
 - (c) Regional knowledge partner organizations with expertise in promoting and supporting IWRM, such as international RBOs and research and training organizations.
 - (d) Inter-regional knowledge partner organizations with expertise in promoting and supporting IWRM.
 - (e) Bilateral and multilateral development cooperation agencies promoting and supporting activities related to IWRM at the level of river basins.
- (2) Among these, the organizations under (1.a) are considered as RBO members and (1.b to 1.e) are considered as partner members. Partner members will participate in NARBO as promoters and supporters of IWRM and RBOs, and as knowledge partners to RBOs.
- (3) If other organizations wish to join NARBO, it needs to be recommended by an existing NARBO member or government agency concerned, notified to the Secretary General (see “Article 4.4.”) and approved in the NARBO General Meeting (see “Article 4.2.”).

Note: (1.c) and (1.d) include regional and inter-regional nongovernment organizations (NGOs) with expertise in promoting and supporting IWRM. For participation of national NGOs, (3) will apply. Participation as an

observer in NARBO General Meetings is also possible (See “Article 4.2 (2)”).

(4) Application for membership in NARBO or withdrawal from NARBO

(a) Requests to join NARBO will be made to the Secretary General of NARBO, who has the authority to accept organizations as pre-registered members pending the final approval of their membership by the NARBO General Meeting with recommendation from the NARBO member or government.

(b) If any of the following occurs, the member shall withdraw from NARBO :

(i) If the member applies for withdrawal from NARBO;

(ii) If it is considered appropriate at the NARBO General meeting that the member should withdraw from NARRBO.

(5) Member's obligation

(a) Members will participate in NARBO activities of their interest with commitment to use their own resources and to work effectively in partnership with other organizations that are collaborating in the network. Members will support the objectives of NARBO and will comply with its rules and regulations.

(b) RBO members are obliged to submit an annual report to the Secretary General once a year with in 3(three) months after their yearly fiscal year, in which its plan, scope of action, major activities, and issues are summarized. The report will be submitted in English.

(c) The NARBO members are required to pay an annual membership fee. The amount and schedule of payment will be approved by NARBO General Meeting.

Note: For the time being, no membership fees are being considered.

Article 4.2. NARBO General Meeting

(1) Venue and Date

- (a) The NARBO General Meeting is held, in principle, every two years.
- (b) The venue and date are proposed jointly by the Chairperson and the Secretary General and confirmed by the NARBO members.
- (c) An extraordinary NARBO General Meeting can be held before the next General Meeting if there is a specific reason or if there are important issues to be resolved urgently.
- (d) The venue, date and agenda of General Meeting shall be distributed with an appropriate advance notice.

(2) Participation

Members, pre-registered members, technical advisory committee members, and observers may attend the NARBO General Meeting. Observers need endorsement from the NARBO Secretariat and the local organizing committee hosting the NARBO General Meeting.

(3) Agenda of the NARBO General Meeting

- (a) Two year action report and future action program of NARBO
- (b) Reports by members on matters related to activities of NARBO
- (c) Selection and replacement of Chairperson, Vice-Chairperson, Secretary General and Vice-Secretary Generals
- (d) Approval and revision of the Charter
- (e) Approval of new members, or their withdrawal

(4) Approval

The approval of the NARBO General Meeting is based on consensus between the attending members.

Article4.3. Chairperson and Vice-Chairperson

(1) Nomination and Selection of the Chairperson and the Vice-Chairperson

The Chairperson and the Vice-Chairperson are nominated by the Secretariat and selected by the NARBO General Meeting. The Chairperson will be from the country hosting the General Meeting.

(2) Responsibility of Chairperson

The Chairperson leads the NARBO General Meeting and guides NARBO activities until the next general meeting.

(3) Responsibility of Vice-Chairperson

(a) Assist the Chairperson

(b) Substitutes for the Chairperson when he/she is not available

Article4.4. Secretariat

(1) Responsibilities of the NARBO Secretariat

(a) Initiatives and Activities of NARBO

(i) Collection of relevant information and coordination with related organizations, including participation in relevant meetings

(ii) Preparation of the documents needed for and writing reports of the NARBO General Meeting

(iii) Preparation of two-year action report and action program

(iv) Operation and management of the NARBO web site and other communication facilities

(v) Advice on the enabling policy, institutions and efficient operation to improve IWRM and on the establishment and capacity building of RBOs in implementing IWRM (subject to available resources of NARBO to provide advice through cost-effective means)

(vi) Organization of other NARBO initiatives and activities

(b) Logistics Service for NARBO

(i) Contacts and coordinates the members

(ii) Handles the administration, including registration of members, accounting, document preparation etc.

(2) Composition and Location of the NARBO Secretariat

(a) The NARBO Secretariat is composed of the Japan Water Agency (JWA), the Asian Development Bank Institute (ADBI), both in Japan, and the Asian Development Bank (ADB), in Philippines.

(b) The Headquarters of the Secretariat is located in JWA and its branches are located in ADBI and ADB. Secretariat staff are nominated by the Secretary General in consultation with JWA, ADBI and ADB.

(c) Any organization in the NARBO Secretariat may resign its function at any time without condition.

(3) Nomination and approval of the Secretary General and the Vice-Secretary Generals.

The Secretary General and the Vice-Secretary Generals are nominated by the organizations operating the Secretariat, and approved at the NARBO General Meeting.

(4) Responsibilities of the Secretary General

- (a) Initiates and manages NARBO's initiatives and activities.
- (b) Convenes the NARBO Meeting and sets its agenda in consultation with the Chairperson
- (c) Supervises the Secretariat's work

(5) Responsibilities of the Vice-Secretary Generals

- (a) Supports the Secretary General
- (b) Substitutes for the Secretary General when necessary

Article 4.5. Technical Advisory Committee

- (1) A Technical Advisory Committee may be convened by the Secretary General. The Committee will be composed of individuals and organizations who can advise and support NARBO in its activities. Its task is to extend the financial and the technical support for the implementation of regional activities of NARBO.
- (1) The statute of the committee will be approved by the NARBO General Meeting.

Section 5. Resources

- (1) Financial and human resources to support NARBO activities will be provided from the following sources:
- (2) The Members of NARBO will voluntarily provide resources in cash and kind to support NARBO activities in which they are interested to participate.
- (3) Costs (personnel and traveling expenses) of the NARBO Secretariat will be provided by JWA, ADB, ADBI who will mobilize financial resources for

this purpose. Travel expenses for the Chairperson and Vice-Chairperson will be provided by JWA for travel approved by JWA.

- (4) NARBO activities will be financed by JWA, ADBI, ADB, bilateral and multilateral agencies to be identified, and NARBO Members, on a parallel co-financing basis.
- (5) ADB may be requested by the NARBO General Meeting to convene a NARBO Financial Support Group of interested bilateral and multilateral organizations to help support NARBO activities.

Appendix 2

The draft framework and proposal for NARBO Action Plan
(2004 - 2005)

Draft Framework and Proposal for NARBO Action Plan (2004-2005)

Activity	Description	Lead Agency	Implement-ation
A. Advocacy, raising awareness, and exchange of information, good practices on IWRM (Activities for the Whole of NARBO)			
1. NARBO Website (http://www.narbo.jp)	Background, objective, activities (including meetings and workshops), committees, letter of intent, charter and action plan	JWA	Monthly update
	Database on the profile of network members capturing areas of expertise and excellence		
	RBO annual (Jan-Dec) report		
	Linked to the GWP IWRM Toolbox		
	Include a forum section for sharing of on-line opinions		
	Link NARBO website with member websites		
	Direct link to other publications eg. online library		
	Link case studies from IWMI, country water partnerships and area water partnerships		
	Provide updated information on member organizations activities		At least quarterly
2. NARBO members websites	Update databases and make accessible to members	members	
3. E-newsletter (to be included in the NARBO website)	Good practices, lessons learned, activities, recommended format for RBO annual reports sent through email based on sources from RBOs	JWA	Quarterly issues
	Inputs from members welcome, to be followed up from MRC, LLDA, IWMI, others		

Upper part of each frame(bold words) : Draft Framework for NARBO Action Plan
Lower part of each frame : Recommendations for NARBO Action Plan in the Workshop

Draft Framework and Proposal for NARBO Action Plan (2004-2005)

Activity	Description	Lead Agency	Implement-ation
	Good practices, lessons learned, activities, recommended format for RBO annual reports	ADBI, JWA	annually
4. Guidelines and sourcebook	Distribute CD ROMs and DVDs to all stakeholders (not just RBOs)	IWMI, MRC	
	IWRM paper (GWP) as helpful reference and for dissemination		
	On environmental flows and flood management		
	NARBO to Provide catalogues on asian river basins (either accessed or developed)		
5. Centers of excellence	Standards and manuals	RBOs	4 centers initiate by Dec 04, others to follow
	Need for inventory of expertise		
	Interest from organizations to be followed up from: MASL, Jasa Tirta, IWMI, MRC, LLDA		
6. Collaboration with knowledge partner organizations	Develop and disseminate knowledge products for RBOs, eg. On environmental flows	Knowledge partners	annually
	Use available knowledge partners materials		
7. Performance benchmarking	Develop methodology and criteria, then implementation and monitoring	ADB	Methodo-logy and criteria by Dec 04

Upper part of each frame(bold words) : Draft Framework for NARBO Action Plan
Lower part of each frame : Recommendations for NARBO Action Plan in the Workshop

Draft Framework and Proposal for NARBO Action Plan (2004-2005)

Activity	Description	Lead Agency	Implement-tation
	Include information system?		
	IWMI as partner on benchmarking exercise	Partner: IWMI	
8. Workshops	On issues of common interest to members, regional (during General Meeting) and sub-regional (as needed)	Chair	2nd general meeting in 4th qtr 05
	Organization of next workshops be in consultation with member countries		
9. Transboundary water management	To foster regional cooperation for improved management of water resources in transboundary RBs through information sharing and exchange of experience	RBOs	TBD
	MRC offered to share information and experience on TVM		
	NARBO to facilitate establishment of Ganges RBO as recommended by reps from BAN and NEP		
10. RBO Annual Reports	Activities of individual member RBOs	RBOs	Annually
11. NARBO Annual Report	activities of NARBO	NARBO Secretariat	Annually
12. Media relations	Include international press across Asia		
	More proactive and comprehensive media strategy		
13. Gender in development programs	Gender sensitive IWRM activities, and gender specific programs	IWMI, GWA	
14. River basin information systems		RBOs?	

Upper part of each frame(bold words) : Draft Framework for NARBO Action Plan
Lower part of each frame : Recommendations for NARBO Action Plan in the Workshop

Draft Framework and Proposal for NARBO Action Plan (2004-2005)

Activity	Description	Lead Agency	Implement-ation
B. Capacity Building (Activities for Regional Areas of NARBO)			
1. Training courses for IWRM	Technical and non-Technical issues for RBOs on constitution on IWRM, management of river basins, planning, conservation, development, water rights, awareness, resettlement, safe operations of facilities, leadership skills, etc.	JWA, ADBI, ADB, KOWACO	At least 2 courses in 04
	LLDA to contribute to development of modules on market-based instruments, watershed management, financing IWRM activities, Decision support systems; to offer case studies		
	MRC to contribute technical support and/or training facilities for conducting training courses		
	Include needs assessment (based on what has been done, cooperate with CAPNET and others to avoid activity duplication);		
	to consider technical and managerial aspects		
	include skills on leadership, and prioritization on topics and levels of training (initially via website)		
	Malaysia CAPNET and Indonesia CAPNET, IWMF in BAN to support on IWRM training		
2. RBO staff exchange program	RBO staff spend time learning on-the-job in another RBO	RBOs	TBD
	MRC to be involved		
	IWMF offered to host		
3. RBO exchange visits	To exchange experience	RBOs	TBD

Upper part of each frame(bold words) : Draft Framework for NARBO Action Plan
Lower part of each frame : Recommendations for NARBO Action Plan in the Workshop

Draft Framework and Proposal for NARBO Action Plan (2004-2005)

Activity	Description	Lead Agency	Implement-tation
	LLDA, IWMI and MRC to offer visits and act as knowledge centers		
	Jasa Tirta and MASL to exchange visits		
4. Advisory visits to RBOs	Visit RBOs to learn and advice	Secretariat and knowledge partners	annually
	MRC to be involved		
5. Scholarship programs	Development of scholarship programs to benefit NARBO members	TBD	TBD
6. RBO twinning program	Explore opportunities for twinning among RBOs	RBOs	TBD
	Good idea		
	MRC offered to support in Mekong Region		
	Jasa Tirta and JWA		
	Jasa Tirta and KOWACO		
7. ISO Certification	RBOs gain ISO certification	RBOs	TBD
	Jasa Tirta I and II to make suggestions and to disseminate recommendations	Jasa Tirta	
C. Support for NARBO Activities			
1. Technical Advisory Committee	Advise on NARBOs program of activities	JWA	TBD
	IWMI offered to be a member		
	Extend financial support for NARBO activities	ADB	TBD

Upper part of each frame(bold words) : Draft Framework for NARBO Action Plan
Lower part of each frame : Recommendations for NARBO Action Plan in the Workshop

Draft Framework and Proposal for NARBO Action Plan (2004-2005)

Activity	Description	Lead Agency	Implement-tation
2. Financial Support Group	All other multilateral and bilateral agencies should be invited, including KDC, Netherlands, WB, and others		

Appendix 3

NARBO Members' List

List of NARBO Member and Organizations interested as the 1st General Meeting

		Member	Interested
	River Basin Organization (RBO)	13	2
	Government Organization (GOV.)	15	5
	Regional Knowledge Partner (RKP)	12	1
	Inter Regional Knowledge Partner (IRKP)	2	0
	Development Cooperation Agency (DCA)	1	0
	Total	43	8

RBOs

Country		Organization	Representative/Signatory	Position
Bangladesh	M	Bangladesh Water Development Board	Mr. Giasuddin Ahmed Choudhury	Chief Engineer
Indonesia	M	Jasa Tirta I Public Corporation	Mr. Socheh	President Director
Indonesia	M	Jasa Tirta II Public Corporation	Mr. Tjetjep Sudjana	President Director
Indonesia	M	Jragung-Tuntang Basin Water Resources Management Unit (BWRMU) (Balai PSDA Jragung-Tuntang)	Mr. Tri Widodo D.	Head of BWRMU
Japan	P	Japan Water Agency (JWA)	Dr. Toru Kondo	President
Malaysia	M	Selangor Water Authority	Mr. Rahmat Sharif	Director
Pakistan	I	Water and Power Development Authority	Mr. M Mushtaq Chaudhry	General Manager (P&D)
Philippines	M	Agno River Basin Development Commission (ARBDC)	Mr. Benjamin D de Leon	Undersecretary and Ex. Director
Philippines	M	Laguna Lake Development Authority (LLDA)	Ms. Dolora Nepomucento	Assistant General Manager
Korea	M	Korean Water Resources Corporation (KOWACO)	Mr. Yoonsong Choi	Director, Overseas Project Development
Sri Lanka	M	Mahaweli Authority of Sri Lanka	Mr. Palitha Tissa Senaratne	Director General
Thailand	I	Bang Pakong River Basin	Mr. Chamroon Suaydee	Chairman, Sub-committee
Vietnam	M	General Office for RBOs in Vietnam	Mr. Le Quang Tuan	Specialist, General Office for RBOs
Vietnam	M	Cuu Long & Dong Nai River Basin Organization	Mr. To Van Truong	Chief of Office of CLRBO & DNRBO
Vietnam	M	Red River Basin Organization	Mr. To Trung Nghia	Chief of Office of RRBO
total		15 RBOs (13 members and 2 Interested)		

List of NARBO Member and Interest to become Member as the 1st General Meeting

Governmental Organization

Country		Organization	Representative/Signatory	Position
Bangladesh	M	Local Government Engineering Department, Ministry of Local Government, Rural Development and Cooperatives	Mr. Shahidul Hasan	Chief Engineer
Cambodia	M	Ministry of Water Resources and Meteorology	Dr. Theng Tara	Director, Department of Water Resources Management and Conservation
Cambodia	M	Department of Hydrology and River Works	Mr. Long Saravuth	Deputy Director of DHRW
P.R. China	I	Huai He River Water Resources Commission of Ministry of Water Resources	Mr. Liu Chang Zhong	Senior Engineer
P.R. China	I	Taihu Basin Authority of Ministry of Water Resources	Mr. Gong Zheng	Engineer
Indonesia	M	Directorate General of Water Resources	Ir. Sukrasno Sastrohardjono Dipl. HE	Director of Water Resources Management
Indonesia	M	West Nusa Tenggara Regional Office of Settlement and Regional Infrastructure (Dinas Kinitraswi Provinsi NTB)	Mr. Jalal	Chief of Regional Office
Indonesia	M	Bengawan Solo River Basin Development Project	Mr. Sudi Harsono	General Project Manager
Indonesia	I	Brantas River Basin Development Project	Ir. Imam Agus Nugroho	General Project Manager
Indonesia	I	Seputih-Sekampung River Basin Development Project	Mr. Mudjadi	General Project Manager
Indonesia	M	Jeneberang River Basin Project	Mr. Alfa Kardinal Tampubolon	Acting General Project Manager
Japan	M	Water Resources Department, Land and Water Bureau, Ministry of Land, Infrastructure & Transport	Mr. Yoshio Tokunaga	Deputy Director, Water Resources Department
Lao PDR	M	Water Resources Coordination Committee Secretariat	Mr. Phonechaleun Nonthaxay	Head
Malaysia	M	Department of Irrigation and Drainage	Dr. Keizrul Abdullah	Director General
Philippines	M	National Water Resources Board	Mr. Ramon Alipala	Executive Director
Sri Lanka	M	National Water Resources Authority	Mr. Ananda Jayaweera	Director
Thailand	I	Ministry of Natural Resources and Environment	Ms. Sukontha Aekaraj	Director, Foreign Relations Branch Department of Water Resources
Vietnam	M	Department of Water Resources Management, MoNRE	Mr. Le Huu Thuan	Head of Surface Water Management Bureau
Vietnam	M	Sub Institute for Water Resources Planning	Mr. Nguyen Xuan Hien	Deputy Director
Vietnam	M	Department of Natural Resources and Environment of Dong Nai Province	Mr. Phan Van Het	Vice Director
total		20 Gov. Orgs (15 member and 5 Interested)		

List of NARBO Member and Interest to become Member as the 1st General Meeting

Regional Knowledge Partner

Region		Organization	Representative/Signatory	Position
South-east Asia	M	Global Water Partnership (GWP) SEARWP (Malaysia)	Dr. Keizrul Abdullah	Chairperson
South Asia	M	Global Water Partnership (GWP) SAS RWP (Bangladesh)	Mr. Quamrul Islam Siddique	Chairperson
South Asia	M	South Asia Network of River Basin Organization (SASNET-RBO)	Mr. Don Clement Sudharma Elakanda	Network Coordinator SASNET-RBO
Asia	M	Mekong River Commission Secretariat	Mr. Sokhem Pech	Director, MRC Secretariat
Bangladesh	M	Institute of Water Modeling (IWM)	Mr. Emaduddin Ahmed	Executive Director
Thailand	M	Thailand Water Resources Association (TWRA)	Dr. Apichart Anukulamphai	President
Japan	I	Ritsumeikan Asia Pacific University (Japan)	Dr. Francisco P. Fellizar, Jr	Associate Professor
Indonesia	M	Indonesia Water Partnership	Mr. Achmadi Partowijoto Cae	Member of Trustee
Indonesia	M	The Foundation on Water Affairs ADHI EKA	Ir. Kusdaryono Sutosuromo	Chairman of the Executive Board
Indonesia	M	Faculty of Engineering, Brawijaya University	Mr. Agus Suharyanto, Ph.D	Vice Dear for Academic Affairs
Indonesia	M	Research Institute for Water Resources	Ms. Dyah Rahayu Pangesti	Head of Research Institute
Indonesia	M	Center for Environment & Civil Engineering Research	Ms. Indreswari Guritno	Senior Member
Indonesia	M	Post Graduate Study on Water Resources Management Faculty of Engineering Gadjah Muda University	Dr. Budi Wignyosukarto	Senior Lecture
total		13 Reg. KP (12 member and 1 Interested)		

Inter-regional Knowledge Partner

		Organization	Representative/Signatory	Position
	P	Asian Development Bank Institute	Mr. Peter Mc. Cawley	Dean
	M	International Water Management Institute (IWMI)	Mr. Ian Makin	Regional Director, Southeast Asia
total		2 Int-reg. KP		

Bilateral and multilateral development cooperation agencies

Country		Organization	Representative/Signatory	Position
	P	Asian Development Bank	Mr. Jan P. M. van Heeswijk	Director General
total		1 DCA		

Note:

P = Promotor (Member)

M = Member

I = Interested to become a member

KP=Knowledge Partner

DCA=Development Cooperation Agency

Appendix 4

The Letter of Intent

Letter of Intent for Collaboration
On
Network of Asian River Basin Organizations
Between
The Water Resources Development Public Corporation, Japan (WARDEC),
The Asian Development Bank (ADB), and
The Asian Development Bank Institute (ADBI)

This letter expresses our intention to collaborate in establishing a Network of Asian River Basin Organizations (NARBO). The need for partnerships for action to achieve Integrated Water Resources Management (IWRM) was recognized at the 3rd World Water Forum held in Kyoto, Osaka, and Shiga, in the Yodo River Basin, Japan, in March 2003. Several developed and developing countries in Asia have already established river basin organizations (RBOs) to implement IWRM. The 3rd World Water Forum highlighted the need to support these RBOs through knowledge sharing and capacity building, especially in developing countries.

Participation in NARBO will be focused on RBOs in developing countries in Asia. Regional centers of expertise for IWRM will be invited to join NARBO as knowledge partners. Collaboration will also be pursued with inter-regional knowledge centers. The organization, program of activities, and financing of NARBO will be determined in consultation with interested RBOs and partner organizations. Financial and other support for NARBO's activities is expected to be provided on a parallel basis from WARDEC, ADB, ADBI and other collaborating partners, with contributions from the RBOs joining as members. It is expected that support for some of NARBO activities in ADB's developing member countries may be drawn from the ADB's Cooperation Fund for the Water Sector, subject to ADB's regular approval procedures. Collaboration with ADBI is expected to be in the development of water

sector policy research, capacity building, training, networking, and dissemination.

It is expected that NARBO establishment will be accomplished in 2003 involving preparatory consultations and an initial regional workshop.

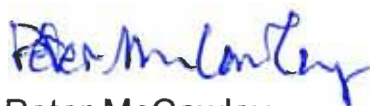
Signed at 3rd World Water Forum, Otsu, Japan, on 21st March 2003



Myoung-Ho Shin

Vice President of

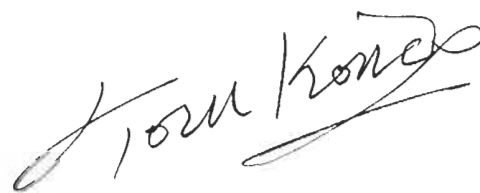
Asian Development Bank



Peter McCawley

Dean of

Asian Development Bank Institute



Toru Kondo

President of

Water Resources Development
Public Corporation

Appendix 5

The detailed program of the workshop
At The First General Meeting

Program of the NARBO General Meeting

Time	Program	Note
Monday, February 23, 2004		
19.00 - 21.00	Reception Dinner	Hosted by Japan Water Agency (JWA), Asian Development Bank (ADB) and Asian Development Bank Institute (ADBI)
Tuesday, February 24, 2004		
Opening Session		
09.00 - 09.10	Welcome Remarks and Overview of the Meeting	Mr. Socheh, President Director of Jasa Tirta I Public Corporation
09.10 - 09.30	Report on the Establishment of NARBO	Dr. T. Sadahiro, NARBO Secretariat
09.30 - 10.00	Opening Addresses	President Toru Kondo, JWA. Director General Jan P.M. van Heeswijk, ADB. Director Raymond Renfro, ADBI.
10.00 - 10.10	Keynote Address and Official Opening	Dr. Moch. Basuki Hadi Moeljono, Directorate General of Water Resources, MSRI
10.10 - 10.30	Break	
Session on NARBO Charter		Co-chaired by Prof. Yoshida and Jan van Heeswijk
10.30 - 11.30	Presentation on the NARBO Charter followed by Question and Answer Session	NARBO Secretariat: - Dr. T. Sadahiro - Mr. Wouter T.L. Arriens - Mr. Toru Tatara
11.30 - 12.00	Signing Ceremony of the NARBO Charter	
12.00 - 13.00	Lunch	
Selection of NARBO Constitutional Body		Co-chaired by Prof. Yoshida and Dr. Raymond Z Renfro
13.00 - 13.30	Nomination and selection of Chairperson, Vice Chairperson, Secretary General and Vice-Secretary General of NARBO	

Program of the NARBO General Meeting

Time	Program	Note
13.30 - 14.00	Draft Framework for NARBO Action Plan	NARBO Secretariat
IWRM Workshop Frameworks and Implementation of IWRM		
14.00 - 18.00	Please see Table-4	
Wednesday, February 25, 2004		
IWRM Workshop (Parallel session) Group A(Theme 1): National Framework for IWRM Group B(Theme 2): RBO Experiences to Implement IWRM		
08:00 - 12:40	Please see Table-4	
12:40 - 13:40	Lunch	
NARBO Action Plan (Parallel Session) Group A(Theme 1): National Framework for IWRM Group B(Theme 2): RBO Experiences to Implement IWRM		
13:40 - 17:30	Please see Table-4	
17:30 - 17:45	Vote of Appreciation	Dr. Apichart Anukularmchai, Thailand Water Res. Association
	Closing remarks1	Mr. Palitha T. Senaratne, Mahaweli Authority of Sri Lanka Mr. Sukrasno, Directorate General of Water Resources, MSRI
	Closing remarks2	
19.00 - 21.00	Farewell Dinner and cultural evening	
Thursday, February 26, 2004		
Field Visit		
08.00 - 16.00	Group A: Upper reaches of Brantas River Basin Group B : Lower reaches of Brantas River Basin	

Appendix 6

The detailed information of the site visit
At The First General Meeting

1. SITE VISIT ITINERARY

GROUP A

08.00 – 08.45 : Depart from Batu to Malang
08.45 – 09.30 : Site visit at the PJTI Office
09.30 – 10.30 : Travel from Malang to
Sengguruh Dam
10.30 – 11.30 : Site visit at the Sengguruh Dam
11.30 – 12.00 : Travel from Sengguruh Dam to
Sutami Dam
12.00 – 13.30 : Site visit at the Sutami Dam and
the Lahor Dam and Lunch
13.30 – 14.30 : Travel from Sutami Dam to Sand
Pocket in Wlingi
14.30 – 15.00 : Site visit at the Sand Pocket
15.00 – 16.00 : Travel from Sand Pocket to
Selorejo Dam
16.00 – 16.30 : Site visit at the Selorejo Dam
16.30 – 17.15 : Return to Batu

GROUP B

08.00 – 08.45 : Depart from Batu to Selorejo
Dam
08.45 – 09.30 : Site visit at the Selorejo Dam
09.30 – 10.30 : Travel from Selorejo Dam to
Irrigation Area - Jombang
10.30 – 11.00 : Site visit at the Irrigation Area
11.00 – 12.00 : Travel from Irrigation Area to
New Lengkong Barrage
12.00 – 13.30 : Site visit at the New Lengkong
Barrage and Lunch
13.30 – 15.30 : Travel from New Lengkong to
PJTI Office - Malang
15.30 – 16.15 : Site visit at the PJTI Office
16.15 – 16.45 : Return to Batu



2. SENGURUH DAM



The Sengguruh dam was planned to provide hydroelectric power with installed capacity of $14.5 \text{ MW} \times 2$ units. Initial construction activities started in early 1982 and last 1988 that the dam was completed. At the present moment this reservoir, with effective storage 2.5 million cubic-meters, the dam has a function as river run-off regulation for peak power generation for 5 hours duration for a day. The Sengguruh dam has a height of 33 meters and a crest length of 378 meters.

3. SUTAMI DAM



Sutami dam is an important reservoir in the upper part of the Brantas River Basin. Initial construction activities started in early 1961 and 1973 that the dam was completed.

At the Present moment this reservoir, with an effective storage of 253 million cubic-meters, the dam serves water for various purposes in the basin, mainly for irrigation (34,000 ha), power generation (35 MW x 3 units, include 1 unit for Lahor dam) and flood control. The dam itself is receives its annual inflow from the Brantas River that conjugates with the Lesti River, before Sengguruh dam \approx a smaller dam upstream Sutami dam. The Sutami dam has a height of 100 meters and a crest length of 750 meters.

4. LAHOR DAM



Lahor dam is a smaller reservoir and construction started in early 1973 and 1977 that the dam was completed. At the present moment this reservoir, with an effective storage of 29.4 million cubic-meters, the dam serves water for various purposes, mainly for irrigation (1,100 ha), power generation (35 MW \times 1 unit) and flood control. The dam itself is constructed on the Lahor River and supply water to Sutami reservoir through connection tunnel with 800 meters along. The dam has a height of 74 meters and a crest length of 446 meters.

5. SAND POCKET



Sand pocket is one of the facilities to control debris materials from Mountain Kelud. Mountain Kelud erupted every 15 years, and that a single eruption yields 100,000,000 \pm 200,000,000 m³ of ejecta. The last eruption in 1990 yields of 125,000,000 m³ ejecta. Mountain Kelud Project has been examined distribution of volcanic debris among the major 5 rivers is estimated as Semut River (17.5%), Putih River (24.9%), Badak River (31.9%), Ngobo River (16.2%) and Konto River (9.5%). The photograph (Sand Pocket of Semut River) is one of sand pockets was constructed 1972.

6. SELOREJO DAM



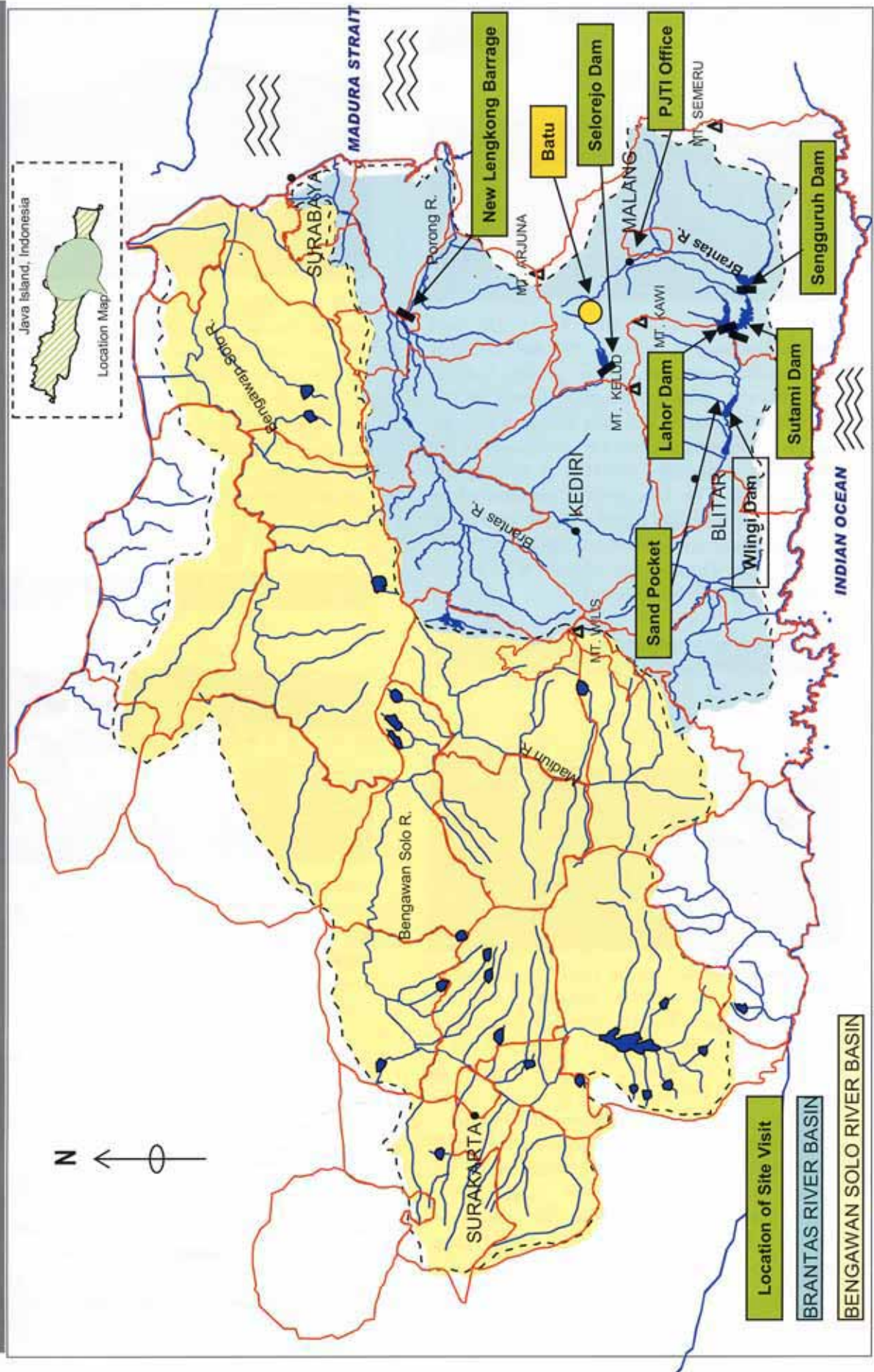
Selorejo dam is a smaller reservoir and construction activities started in early 1963 but it was not until 1972 that the dam was completed. At the present moment this reservoir, with an effective storage of 54.6 million cubic-meters, the dam serves water for various purposes, mainly for irrigation (5,700 ha), power generation (4.8 MW \times 1 unit) and flood control. The dam has a height of 49 meters and a crest length of 450 meters.

7. NEW LENGKONG BARRAGE



New Lengkong Barrage is constructed on an important place in the Brantas River Basin. The barrage was constructed on an earlier site of another older barrage that was built by the Dutch engineers, during the colonial period of Indonesia, 1857. Completion of the newly reconstructed barrage was in 1974. New Lengkong Barrage serves water for various purposes, mainly for flood discharge control for Porong River, irrigation to Brantas Delta (40,156 ha). Prior to New Lengkong, the Brantas River diverted in Surabaya River through the Mlirip Gate and then through the barrage is emptied through the Porong River. As the Mlirip Gate and other water abstraction points along the lower part of Brantas River is affected by the backwater of this barrage, it is clearly recognizable that New Lengkong serves also as water control structure.

WORKING AREA OF JASA TIRTA I PUBLIC CORPORATION



Appendix 7

Electronic Newsletter



The NARBO Newsletter

(Network of Asian River Basin Organizations)

<http://www.narbo.jp/>

High Expectations of Asian Countries toward the Establishment of NARBO

1. What is NARBO?

During the 3rd World Water Forum held in Japan in March 2003, participants strongly recognized the importance of creating a partnership to promote Integrated Water Resources Management (IWRM) in river basins in Asian countries. Three organizations — Japan Water Agency (JWA), Asian Development Bank (ADB) and Asian Development Bank Institute (ADBI) — have signed a letter of intent for establishing the Network of Asian River Basin Organizations (NARBO).

An Inception meeting was held in Chiang Mai, Thailand on November 20, 2003 to lay the groundwork for the establishment of NARBO, which will be officially announced at its first General Meeting scheduled on February 24-26, 2004 in Batu, Indonesia.



Inception Meeting in Chiang Mai

NARBO's main objective is to strengthen the capabilities and effectiveness of River Basin Organizations (RBOs) in Asian nations. To achieve this goal, NARBO will provide necessary assistance to RBOs by sharing information, expertise and human resources to promote IWRM and improve water resources management. NARBO consists of Asian RBOs and related national and federal water divisions, regional and inter-regional knowledge centers as well as international cooperative agencies.



Signing Ceremony



Inception Meeting in Chiang Mai





The NARBO Newsletter

2. Activities

NARBO will:

1. Advocate and raise awareness of IWRM among the RBOs, water sector apex bodies, and leading water sector agencies in the region, mainly through regional workshops.
2. Share with member organizations IWRM-related information, expertise and experience via web pages, newsletters and databases.
3. Support NARBO members to improve water governance, including the enabling policy, institutional, and legal framework for IWRM, and the formulation of the action plans.
4. Build capacity of RBOs in implementing IWRM, mainly through staff exchange and training among participating organizations.
5. Support RBOs with technical advice in regard to the planning, conservation, development, and the proper and efficient operation and maintenance of water resources facilities, to improve IWRM.
6. Foster regional cooperation for improved management of water resources in transboundary river basins.



Venue of NARBO General Meeting, Royal Orchids Garden Hotel in Malang, Indonesia



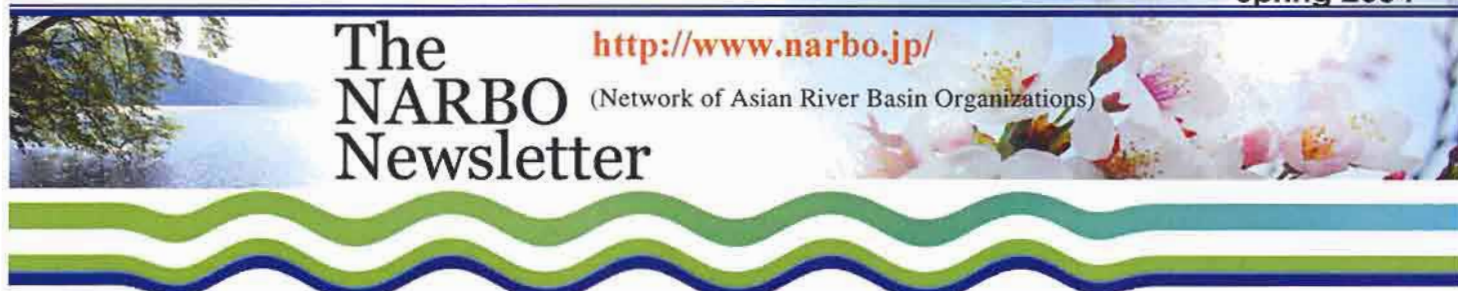
3. High expectations toward NARBO activities

East Asian, Southeast Asian and South Asian countries have already expressed their high expectations and various suggestions regarding NARBO's activities and framework (e.g., purposes, member organizations, activity plans). We appreciate Indonesian government's strong support without which the upcoming NARBO General Meeting to be held February 24-26, 2004 in the city of Malang, Indonesia will not have materialized. This meeting will mark the official beginning of NARBO activities, and as a first step we will focus on the Asia monsoon regions (including South Asia, Southeast Asia and East Asia). In subsequent stages, NARBO will be expanding its activities to other nations throughout Asia.



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**THE FIRST GENERAL MEETING OF
NETWORK OF ASIAN RIVER BASIN ORGANIZATIONS (NARBO)
NARBO officially established with 43 member organizations**

Preface

The first General Meeting of Network of Asian River Basin Organizations (NARBO) was held in Batu, East Java, Indonesia from February 24 to 26, 2004. It was promoted by Japan Water Agency (JWA), Asian Development Bank (ADB) and Asian Development Bank Institute (ADBI), and supported by Directorate General of Water Resources, Department of Infrastructure and Regional Development, Government of Indonesia, and Jasa Tirta I Public Corporation (PJTJ). Among around 130 participants from 16 countries, 43 organizations from 13 countries signed on Agreement to Membership in NARBO and 8 organizations signed on Expression of Interest for Membership, and NARBO was officially established. The NARBO Secretariat is composed of JWA, ADB and ADBI, and its headquarters is to be located at JWA, Japan.

Background and need for establishment of NARBO

Over the past decades, a series of regional and global water conferences have underlined the need to adopt and operationalize the approach of integrated water resources management (IWRM). It is defined by the Global Water Partnership as “a process to improve the planning, conservation, development, and management of water, forest, land and aquatic resources in a river basin context, to maximize economic benefits and social welfare in an equitable manner without compromising the sustainability of vital environmental systems. In order to achieve IWRM, it is required that IWRM will be undertaken at river basin level with the involvement of stakeholders, and it is highly expected that River Basin Organizations (RBOs) have a vital role to contribute to it.

While an importance of IWRM had been widely recognized, a network to assist RBOs in Asia in their work of introducing and operationalizing the IWRM





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approach did not exist. Consequently, RBOs lacked opportunities for exchanging information and experience on water resources management at river basin level, and had been trying to promote IWRM individually.

Under the circumstances, the 3rd World Forum was held in Japan in March 2003. The establishment of NARBO originates from this forum where JWA, ADB and ADBI signed a Letter of Intent to collaborate in launching it with recognition of needs to cooperate and support RBOs in order to promote IWRM in Asia. Afterward, those three organizations made inquiries to governmental agencies, RBOs and other related organizations in Asia about intentions to participate to NARBO and asked their cooperation. The first NARBO General Meeting, which is an inaugural meeting, was held after the Inception Meeting held in Chiang Mai, Thailand, November 2003.

Objective of NARBO

Objective of NARBO will be to help achieve IWRM in river basins throughout Asia. It is also to strengthen the capacity and effectiveness of RBOs

in promoting IWRM and improving water governance, through training and exchange of information and experiences among RBOs and their associated water sector agencies and knowledge partner organizations in Asia and to advise on the establishment of RBOs in Asia.

Scope of NARBO Activities

Scope of NARBO Activities is followings.

1. Advocacy and raising awareness for IWRM among RBOs, water sector apex bodies, and leading water sector agencies in the region, mainly through regional workshops.
2. Sharing of information, good practices, and lessons learned for IWRM among the participating organizations, mainly by operating databases and a website for IWRM exchanging information, and by sending a newsletter by email as well as posting on the website and holding (sub) regional workshops.
3. Supporting NARBO members to improve water governance, including the enabling policy, institutional, and legal framework for IWRM, and the formulation of the action plans.
4. Building capacity of RBOs in implementing IWRM, mainly through staff exchange and training among participating organizations.
5. Supporting RBOs with technical advice in regard to the planning, conservation, development, and the proper and efficient operation and maintenance of water resources facilities, to improve IWRM.
6. Fostering regional cooperation for improved management of water resources in transboundary river basins.



Venue of NARBO General Meeting, Royal Orchids Garden Hotel in Batu, Indonesia





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NARBO Members

NARBO members consist of RBOs, national and federal/ provincial/ local governmental organizations in charge of water administration, water sector apex bodies and leading water agencies, which are followings.

- a. RBOs, defined as organizations that have been officially recognized by the government of their country as having a mandate to promote and implement IWRM at the river basin level.
- b. National and federal / provincial / local governmental organizations in charge of water administration in the countries which implement or are interested in promoting and implementing IWRM at the level of river basins. This includes water sector apex bodies and leading water agencies.
- c. Regional knowledge partner organizations with expertise in promoting and supporting IWRM, such as international RBOs and research and training organizations.
- d. Inter-regional knowledge partner organizations with expertise in promoting and supporting IWRM.
- e. Bilateral and multilateral development cooperation agencies promoting and supporting activities related to IWRM at the level of river basins.

Among these, the organizations under (a) are considered as RBO members, and (b) to (e) are considered as partner members. Partner members will participate in NARBO as promoters and supporters of IWRM and RBOs, and as knowledge partners to RBOs.

The first General Meeting of NARBO

a. Venue

The General Meeting was held in Batu, which is located close to headwaters of Brantas River in East Java. It is about two hours ride from Surabaya, the second largest city in Indonesia, and is a quiet highland resort with beautiful scene at about 900 m elevation at the foot of Mt. Arjuna. The Royal Orchid Garden Hotel & Condominiums, which held the meeting, is a well equipped resort hotel with two halls; Panderman Hall with 540 capacity and Arjuna Hall with 150 capacity.

b. Program

Refer to **Table-1** which shows the program of the first NARBO General Meeting. The first General Meeting started with a Reception Dinner hosted by JWA, ADB and ADBI in the evening on February 23. It offered a good opportunity for all participants to get acquainted each other before the meeting on the following day.



Panderman Hall



Arjuna Hall



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Session on NARBO Charter, selection of NARBO Constitutional Body and IWRM Workshop which aimed to discuss about NARBO Action Plan were held on February 24 and 25.

Participants went on a field trip to Brantas River Basin, which is working area of PJTI, for one day trip starting from early morning on February 26.

Participants

Around 130 participants from 16 countries attended the first General Meeting. Refer to **Table-2** which shows numbers of participants in categories.

Opening Ceremony

Welcome Remarks by Mr. Socheh, President Director of PJTI, which is an RBO of Indonesia that is a hosting country, opened the meeting on February 24. Then Dr. Takeyoshi Sadahiro, Director of International Affairs Division, Management and Planning Department, Japan Water Agency (JWA), gave report on the establishment of NARBO.

Table-2 Numbers of Participants

Status	Number
National government and RBO	55
International and regional knowledge partner organization	9
Promoter	11
Observer	38
Others	13
Total	126

Table-3 Numbers of Organizations

Status	Member	Interested
River Basin Organization (RBO)	13	2
Government Organization (GOV)	15	5
Regional Knowledge Partner (RKP)	12	1
Inter Regional Knowledge Partner (IRKP)	2	0
Development Cooperation Agency (DAC)	1	0
Total	43	8

Following it, Opening Addresses were given by promoters; Dr. Toru Kondo, President of JWA, Mr. Wouter T. Lincklaen Arriens, Lead Water Resources Specialist of ADB, Mr. Raymond Z. Renfro, Director, Capacity Building and Training of ADB. It followed with Keynote Address by Dr. Moch Basuki Hadimuljono, Director General, Directorate General of Water Resources, Ministry of Settlement and Regional Infrastructures, Government of Indonesia that is a hosting country.

Signing Ceremony of the NARBO Charter

NARBO Charter was presented and explained by NARBO Secretariat and it followed by Q and A Session. Dr. Tsuneaki Yoshida, Professor of Takushoku University, who acted as a Chairperson, asked an approval of the Charter and it was approved as it was. On the basis of this approval, 43 organizations signed on Agreement to Membership in NARBO and 8 organizations signed on Expression of Interest for Membership in NARBO. Upon signing, representatives of JWA, ADB and ADBI came up to the front and signed on the Agreement. Then a master of ceremony called out each organization for signing. Refer to **Table-3** which shows numbers of organizations signed on those Agreements.



Signing Ceremony of the NARBO Charter



Signing Ceremony of the NARBO Charter



Chairperson:
Dr. Moch Basuki Hadimuljono

Selection of NARBO Constitutional Body

Signing Ceremony was followed by Selection of NARBO Constitutional Body. The followings are selected and approved for Chairperson, Vice-Chairperson, Secretary-General and Vice Secretary-Generals.

Chairperson:

Dr. Moch Basuki Hadimuljono

(Director General, Directorate General of Water Resources, Ministry of Settlement and Regional Infrastructures, Indonesia)

Vice-Chairperson:

Mr. Palitha T. Senarantne

(Director General, Mahaweli Authority of Sri Lanka)

Secretary- General:

Dr. Masafumi Fukuda

(Executive Director, JWA)

Vice Secretary- General:

Dr. Takeyoshi Sadahiro

(Director, International Affairs Division, JWA)

Mr. Wouter Lincklaen Arriens

(Lead Water Resources Specialist, ADB)

Mr. Toru Tatara

(Special Adviser to the Dean, ADBI)



Vice-Chairperson:
Mr. Palitha T. Senarantne



Secretary- General:
Dr. Masafumi Fukuda



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(from left to right)

Vice Secretary- General:

Mr. Toru Tatara

Mr. Wouter T. Lincklaen Arriens

Dr. Takeyoshi Sadahiro

Chairperson of Selection of NARBO Constitutional Body: Dr. Tsuneaki Yoshida

- Advocacy, raising awareness, and exchange of information, good practices on IWRM (e.g. NARBO Website, Newsletter)
- Capacity Building (e.g. Training courses for IWRM)
- Support for NARBO Activities (e.g. Technical Advisory Committee)

Refer to **Table-5** which shows Draft Framework and Proposal for NARBO Action Plan.



IWRM Workshop

IWRM Workshop and NARBO Action Plan (draft)

IWRM Workshop was held after selection of NARBO Constitutional Body. The workshop was aimed to discuss NARBO Action Plan, and participants exchanged their opinions on the basis of presentations made by appointed speakers from RBOs, governmental agencies and knowledge partners. IWRM Workshop consisted of three parts; Plenary Session with the theme on "IWRM Framework and Implementation" on the first day, Parallel Sessions with the theme on "National Framework for IWRM" and "RBO's Experiences to Implement IWRM", and following Plenary Session to discuss Proposal for NARBO Action Plan on the second day. Refer to **Table-4** which shows IWRM Workshop Program. NARBO Action Plan for 2004-2005 (draft) was proposed with three main pillars in response to the results of the Workshop, these are;



Discussion on NARBO Action Plan



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Field Trip

Participants went on a field trip to working area of PJTI on the last day of the meeting. They were divided into two groups, and one visited upper stream area of Brantas River Basin and the other visited down stream area through the courtesy of PJTI. The routes of each trip are followings.

<Upper stream area of Brantas River Basin>

Headquarters of PJTI – Sengguruh Dam – Sutami Dam – Lahor Dam – Sand Pocket – Selorejo Dam

<Down stream area of Brantas River Basin>

Selorejo Dam – Irrigation Area – New Lengkong Barrage – Headquarters of PJTI

PJTI made great contribution to the first General Meeting of NARBO by undertaking its arrangement and operation. Jasa Tirta Public Corporation was established in 1990 under Government of Indonesia in order for water resources management and flood control in Brantas River Basin with 11,800 km². It was transformed to PJTI in 1999, and its working area expanded to cover Bengawan Solo River Basin with 16,100 km² after 2002. At present, its scope of works are water quantity and quality management, forest conservation, management of water resources development facilities such as dams and barrages in the river basins. Headquarters of PJTI is situated in Malang, and it holds more than 500 qualified and experienced employees. Dams at 11 sites, of which two is rubber dam, and barrages at 5 sites are under PJTI's charge. There was an explanation that PJTI is facing a serious problem to maintain the function of reservoirs because a volume of sediment in reservoirs is exceeding appropriate level. Volcanic eruption, which occurs every decade and deforestation, which makes deterioration of mountain terrain, cause this, consequently volcanic products and sediment discharge flow into reservoirs with rain and accumulate. This problem is also observed in other countries, and an effort to solve it will be an issue on IWRM.



New Lengkong Barrage

Future Plans

After one year from the 3rd World Water Forum, NARBO was officially established as a new network to promote IWRM in an appropriate manner in monsoonal areas of Asia. A draft of NARBO Action Plan for the period until next General Meeting, which is for two years ahead, was produced at the first General Meeting. NARBO Secretariat has just set about building NARBO Website and database to enable member organizations to share and utilize information. The secretariat has also been examining a program and an approach for training for human resource development in order to hold one within this year. What kind of functions should Website and database include? What kind of information should be shared and utilized? How should information be processed? What type of training for human resource development is needed? We would like to hear from you. Please tell us your opinions and ideas so that we can improve contents of NARBO Action Plan. We are determined to make considerable achievement in NARBO's activities by setting the plan into action responsibly.

We are grateful to all participants in the first General Meeting of NARBO, who gathered from various countries to make active and meaningful discussion. We particularly appreciate Organizing Committee Secretariat, which consists of staffs of PJTI, for their great efforts to arrange and operate the meeting.

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1. Latest Information

1) The Report on APHW2004

NARBO Secretariat participated the APHW (Asia Pacific Association of Hydrology and Water Resources) Conference in Singapore, July 5 to 9.

APHW was established with the aim to promote exchange of operational knowledge and experience in water resources management, and research activities as well as education. Of main interest are problems or cases (within the framework relevant to the geography and climate of the Asia Pacific region) and solutions or



approaches offered.

Having cooperation with APHW, in which many researchers on water resources in Asia are involved, will be greatly beneficial to NARBO activities in the future. Over 150 experts from Asian countries gathered in the conference and had active discussion.

NARBO Secretariat had a booth exhibit to introduce NARBO, and proposed to strengthen cooperation between NARBO and APHW at Closing Plenary.

The representative of APHW made a comment that APHW would become a member of NARBO for future cooperation.

2) The report on the Third South Asia Water Forum

The Third South Asia Water Forum was held from July 13 to 15 for three days at Pan Pacific Sonargaon Hotel in Dhaka, Bangladesh with more than 250 participants. This Water Forum was sponsored by Global Water

partnership-South Asia, Japan Water Forum and United Nations Development Program (UNDP).

The Forum consisted of the inaugural session, technical session, plenary session and concluding session. Twelve technical sessions covered not only water-related issues but also IWRM-related issues such as “IWRM : Practices and Legal Framework/Institution” and “River Basin Organization/Area Water Partnership”, etc. From NARBO Secretariat, Mr. TAKAGI (JWA : Japan Water Agency) attended the forum and made a keynote speech titled “What’s NARBO -Process from its establishment to its goal-“ at the session on “River Basin Organization/Area Water Partnership” held on July 14. He distributed NARBO newsletters and advertised NARBO. During the forum, some of the participants asked him the procedure to become its member. It seems the name of NARBO is gradually spreading among RBOs and other related organizations.

On the final day, July 15 at the closing session, the Dhaka Declaration was presented and adopted. The declaration emphasized the importance of basin-wide planning and management approach.

Although Bangladesh was in a troublesome situation hit by flood, the forum ended successfully with the good arrangement by the forum secretariat.

You can see The Dhaka Declaration and the detailed program of the forum on our website.

(URL:<http://www.narbo.jp/>)



Inaugural session



Keynote speech by NARO Secretariat



Inundated all over like ocean

3) The first NARBO training in Thailand was over successfully

The first NARBO training course on IWRM in Thailand (From July 26 to August 6, Bangkok and Chiang Mai) was over successfully with great cooperation with Thailand Water Resources Association. In this course, twenty participants took part in. Getting deep understandings of IWRM and overcoming the various challenges for applying IWRM to NARBO member countries through the IWRM-applied cases in Thailand, the aim of the training course, were fully achieved we believe. The secretariat decided to have the second training course in December in Sri Lanka. We'll report the training course in Thailand in the next issue.

4) Workshop on NARBO Web Design and Development

The workshop was held in Bangkok on August 7 and August 8 for two days to develop the new NARBO website. The participants came from JWA (NARBO Secretariat), ADB, IRRI, IWMI, RBO in Cambodia, Vietnam, Laos, Philippines and Indonesia. After two-day-long heated discussions, lots of useful opinions and comments were presented. And at the end of the workshop, the framework of new website was proposed. NARBO secretariat in JWA is going to develop new website to a certain extent based on the framework in tandem with the participants by the end of this year.

5) JICA group training course

The first JICA group training course titled "Integrated Water Resources Management" is going to be held from October 12 to 30 for about three weeks under the auspices of JICA. The target group for this course is "senior officials currently working at water-related administrative agencies who have possibility of being engaged in IWRM, with the age between 40 and 55 years old". GI (General Information) was sent to *13 countries in Southeast Asian regions. JWA (Japan Water Agency) is going to undertake the training so that the participants can get deeper understandings of IWRM and learn how to practice IWRM in their countries. We believe this training course will benefit activities of NARBO. The due date for the application is August 30, and we encourage you to consider letting your staff participate in this training course.

* Thirteen countries are Indonesia, Philippines, Cambodia, Vietnam, Bangladesh, Nepal, Sri Lanka, Malaysia, Thailand, Laos, China, India and Pakistan.



At NARBO first training course in Thailand

2. Announcement from NARBO Secretariat

1) The basic idea for NARBO website and database

As a part of our efforts to facilitate NARBO activities, we are working on developing our website to be more useful, helpful and interactive. Our basic idea has been reflected on the website, and we are now seeking some ways to promote exchange of views between members, such as creating an on-line bulletin board and/or an electronic meeting for the next step. Any constructive suggestions, opinions and comments are welcome. For further information, visit our website at www.narbo.jp/.

Along with the website, we are now building NARBO mailing list, showing each organization's telephone number, contact person's name and so on. If you have not submitted the questionnaire, please fill out and send it back to us.

2) Call for Information on RBO members

In order to strengthen capacity of each country and RBO through NARBO activities, firstly, it is important to share a wide range of information on IWRM among members. Therefore, we are planning to build a database as a first step for sharing information, which contains detailed information of each member, such as legal system governing establishment and activities, specific functions and outputs, scheme of cost sharing, outline of the basin. Information will be collected in the given format and converted into database for members' use. We will send the format, named "RBO Information File", to each member along with a sample data. Please

complete the file in detail to the utmost extent, referring the sample. Although there might be some information with no data, we consider that it is important to comprehend which data is available (and which data is not available) at present. The database will be accessible only for members of NARBO by entering the keyword to protect confidentiality.

3) Role sharing of NARBO activities

As you know, the NARBO Secretariat is located in JWA (Japan Water Agency) at present, and its work is being shared by "Planning and Information Systems Division" at JWA headquarters and "Planning and Information Division" at Research and Training Institute. Although there is no clear assignment of roles between two divisions, roughly saying, Planning and Information Division is serving as a liaison office and Planning and Information Division is doing more practical works such as conducting training courses.

If you have any questions, requests and whatever regarding NARBO, please do not hesitate to contact us at shikenar1@luck.ocn.ne.jp by e-mail, or call at +81-48-853-9419-315.

3. Serial Topics

1) What is RBO? : Outline of Japan Water Agency (JWA)

【Activities】

Japan Water Agency (JWA) is one of the Incorporated Administrative Agencies, which are set up and granted objectives and missions by the national government to put “administrative jobs and projects, implementation of which should be ensured for the public benefits such as stable public life and socioeconomic activities” into operation.

JWA constructs, renovates and operates various water resources development facilities such as dams, estuary barrages, canals and facilities for lake and marsh development in the seven river systems (Tone, Ara, Toyo, Kiso, Yodo, Yoshino and Chikugo River Systems) designated for water resources development in accordance with the Basic Plan for Water Resources Development (Full Plan) established under the Water Resources Development Promotion Law. (see Fig-1)

JWA activities consists of water supply, flood control and entrusted activities, and each activity is implemented under instruction of Competent Ministers such as the Minister of Land, Infrastructure and Transport; the Minister of Health, Labor and Welfare; the Minister of Agriculture, Forestry and Fisheries; the Minister of Economy, Trade and Industry. (see Fig-2) The Minister of Land, Infrastructure and Transport takes charge of matters related to personnel and financial affairs of JWA.

【Management Philosophy】

JWA ensures the stable supply of safe and high quality water at a reasonable price.

JWA, as a group of professionals with comprehensive knowledge and experience, pursues the Management Philosophy through following activities:

1. Project cost reduction based on life cycle cost of water resources development facilities
2. Strong coordination with related administrative agencies and water users
3. Special care for aquatic and natural environment
4. Risk management to secure lifelines
5. Efforts for conservation and revitalization of reservoir areas

【Project Implementation Procedures】

JWA projects go through procedures of consultations with or hearings from the related government ministries, prefectural governors and water users about projects plans, cost burdens and construction schedules, etc. (see Fig-3)

【Funding】

JWA projects are funded by government grants, subsidies, charges, loans, trust funds and trust revenues. (see Fig-4)

OGovernment grants

The government provides grants for flood control including alleviation of flood damage, maintenance and improvement of sound

functions of river water flow (e.g. securement of vested water intake, conservation of river environment) from the special account under the supervision of the Ministry of Land, Infrastructure and Transport (MLIT).

OSubsidies

The Ministry of Agriculture, Forestry and Fisheries (MAFF), the Ministry of Health, Labor and Welfare (MHLW), the Ministry of Trade and Industry (MTI) grant subsidies to reduce the finance burden of beneficiaries such as agricultural land improvement districts, and domestic and industrial water suppliers.

OCarges (Beneficiary Shares)

Beneficiaries make payments during water project construction or make installment payments after the completion of the facility and also make payments for facilities management.

OLoans (Beneficiary Shares)

JWA receives long-term loans from the government fund to enable beneficiaries to make installment payments of construction cost after the completion of water resources development facilities. JWA itself issues water resources bonds and raises private funds to pay for the costs of advance land acquisition and of dam constructions.

【Scheme of cost sharing】

There are two schemes of cost sharing: construction project and management project. (see Fig-5.1 and Fig-5.2)

【JWA project locations】

JWA is managing 53 completed projects with 48 facilities, and constructing or investigating another 15 projects, in seven river systems (Tone, Ara, Toyo, Kiso, Yodo, Yoshino and Chikugo River systems) designated for water resources development. (see Fig-6)

【JWA Project Performances】

The seven river systems designated for water resources development (Tone, Ara, Toyo, Kiso, Yodo, Yosino and Chikugo River Systems), where the Basic Plan for Water Resources Development (Full Plan) is applied, cover areas of major economic and social activities, approximately 16% of national land, 51% of national population and 47% of national industrial shipment. (see Fig-7)

The volume of water resources developed by JWA based on Full Plan in seven river systems amounts to approximately 335m³/sec, 88% of a total volume of 379m³/sec in all water resources developments, including those developed by other organizations except for JWA (see Fig-8).

Of the total water resources developed by JWA, municipal water is approximately 321m³/sec (292m³/sec completed) and irrigation water is approximately 70m³/sec. Conveyance volume of municipal water is approximately 133m³/sec (118m³/sec completed) and that of irrigation is approximately 259m³/sec.



<http://www.narbo.jp/>

(Network of Asian River Basin Organizations)

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- 1) The concept for NARBO website and database
- 2) Call for Information on RBO members

3. Serial Topics

- 1) What is RBO? : The introduction of Mahaweli Authority in Sri Lanka

1. Latest Information

1) The detailed report on the first training course in Thailand

One of the priority capacity building activities in the NARBO action plan is to conduct trainings and workshops on IWRM. Hence, this "First Training Program on IWRM and Strengthening of River Basin Committees" was organized. This training program in Thailand was significant for NARBO because Thailand's participatory approach to IWRM and its success in institutionalizing the IWRM process through planning and budgetary instruments is unique and highly relevant to other members in developing countries. This training course was a good opportunity for the participants to learn from Thai experiences with water-related professionals in the region.

The aims of the training course were

- a) Equipping the water-related professionals in the region to have a good understanding of the IWRM concept.
- b) Presenting case studies and field experiences on actual water management at a basin and country level.
- c) Enabling the participants to translate the IWRM concept into the planning process.

The training course was participated by 20 professionals and technical practitioners from six Asian countries. Namely, Cambodia (2 participants), Indonesia (5), Lao PDR (3), Philippines (5), Thailand (1), Vietnam (4) and graduate students from University of Tokyo, Japan. The two-week training course was conducted from July 26 to August 6 in Bangkok and Chiang Mai, Thailand.

The first week of the training was held from July 26 to 30 at Irrigation Development Institute in Bangkok. The activities of the training included the presentation of country / organizational reports by the participants, lectures and discussions on the IWRM concepts, methods and approaches, presentation of case studies and demonstration of the IWRM Tools. After every lecture or presentation finished, the participants had the chance to ask questions or to comment on what had had been discussed.



Lecture in Irrigation development institute (Bangkok)



All of participants (Bangkok)

In the second week, from August 1 to 6, the participants visited different kinds of water management projects in Chiang Mai. There, the participants were able to witness the actual water management operations of a various dams and through the discussions and interactions with the technical and management staff gained knowledge on their field experiences. The participants visited about two to three projects per day. After they got back from site visits, participants and the secretariat had the meeting to discuss what they had seen and observed during the site visits. They tried to identify the key issues,

strong and weak points in the operations and IWRM elements embedded the projects visited. These meeting lasted to late at night every day.



Lecture at the field visit site (Chiang Mai)

In the training course, the participants were asked to write an individual report and a group report. In the individual report, the participants had to summarize what they had learned, the strategies and the action plan on how they would put IWRM into practice in their own organization or country. For making group reports, the participants made five groups and each group was designated the different theme to write about.



Discussion after getting back from site visit

Five themes were as follows

- a) Advocating IWRM. –How can the basic principles of IWRM best be formulated, disseminated and advocated to target groups ?
- b) Institutionalizing IWRM. How can IWRM be institutionalized and implemented through national, basin and local planning and decision-making ?
- c) Establishment of New RBOs. Why are new RBOs needed, what are their essential tasks and how can they best be established ?
- d) Building Capacity in RBOs. How can RBO capacity be assessed and capacity building be prepared and implemented ?
- e) Fostering Participation in IWRM. Why is participation important in IWRM, who are the important stakeholders and how participation be designed and implemented ?

On August 6, the last day of the training course, the participants presented their individual and group works to the panel committee and it evaluated their works. Awards were given to those participants.

<Best Individual Papers>

Mr. Phonechaleun Nonthaxay (Lao PDR)

<Best Group Paper>

Group 4 : Building Capacity in RBOs

Members : Mr. Haryanto (Indonesia)

Mr. King Kham Manivong (Lao PDR)

Mr. Jorge Marlano Estioko (Philippines)

Dr. Bancha Kwanyuen (Thailand)

2) JICA training course (October 14 to 29) ended successfully

The first JICA group training course on “Integrated Water Resources Management” was successfully over on October 29 with the great evaluation from 9 participants who came from Bangladesh, Cambodia, India, Indonesia, Pakistan, Philippines, Sri Lanka, Thailand and Viet Nam. This training course was organized and conducted by JWA. The successful end of this training course became the milestone for JWA and it's highly expected to be organized and conducted by JWA next year also.

If you're interested in this training course, please apply for next year thorough JICA local office in your country.



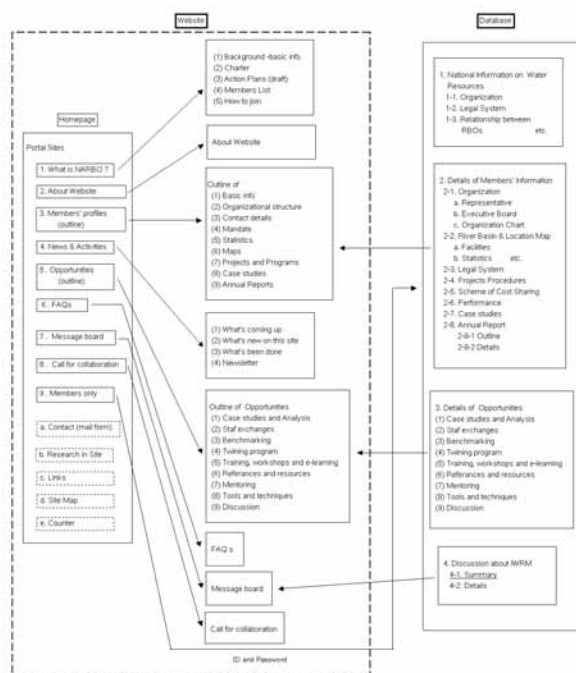
On the first day (October 14) with Mr. Toshiki Aoyama, President of JWA

2. Announcement from NARBO Secretariat

1) The concept for NARBO website and database

JWA Secretariat has been working hard on developing website based on the results obtained through discussions at the workshop on August 7 and 8 in Bangkok, Thailand.

Any comments and opinions are welcomed to improve website and we're expecting to get information from members to enrich the contents of website.



The concept for website based on the results obtained at the workshop

2) Call for information on NARBO members

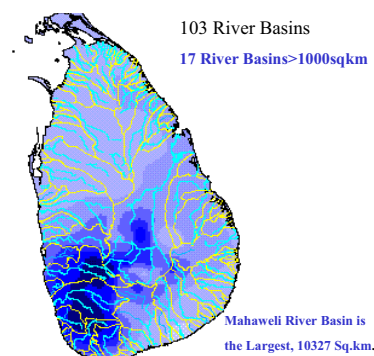
As being mentioned above, NARBO Secretariat are waiting for your offer of any information on your organization, movement of the water-sector in your country and new water-related legislations. We accumulate those gathered information in NARBO website database, so you'll access the database with ID to get information.

3. Serial Topics

•What is RBO? : Mahaweli Authority of Sri Lanka & its Role

1.Introduction

Sri Lanka is the tropical Island situated in the Indian Ocean with the total land area of 65,525km². Its rainfall feeds a radial network of rivers that begin from the highlands in the Central part. 103 distinct rivers cover about 59,217km² with their basins. Large percentage of resources in these basins is used for irrigated agriculture and hydropower generation. Current population is estimated to be around 19 million and is projected to be stabilized at 23 million by 2025.



2.Historical Perspective of Water Resources Management

Sri Lanka is the country with the long history of hydraulic civilization, which had been developed along the main river basins of the country. Early settlers began developing their network of irrigation systems in the main river basins around 5th Century B.C. Some of the large basins developed by them were; Malwathu, Mahaweli, Deduru, Kelani, Kalu, Walawe, Kirindi, Menik and



Kumbukkan. Many of these rivers originate in the central highlands and flow towards plateaus in other parts of the country providing opportunities for irrigated agriculture. This geographical situation helped the early settlers to conserve the watersheds in the highlands and to develop plateaus in agriculture by storing water in a network of reservoirs.

This system of optimum use of water is well expressed in the popular dictum by the King Parakramabahu (AD 1153) that **"not a single drop of water received from the rain should be allowed to escape into the sea without being utilized for human benefit"**.

3. Sectoral Approach

During the early part of 20th Century, a program for restoration of ancient irrigation works located in the dry zone was launched under the British rule and continued after gaining independence in 1949. People were resettled in these areas with a view to developing agriculture basically to achieve food security, employment and socio-economic development objectives of the country. At present responsibility for water resource management is fragmented and entrusted to different government agencies viz. Irrigation Department, Ceylon Electricity Board, National Water Supply and Drainage Board and Water Resources Board.

These institutions were established with single-purpose mandates, which could be seen as parts of highly fragmented sectoral approach towards service deliveries with no relationship to integrated water resource management. Each

agency is mandated to develop their own water sources extracting from either rivers, streams or groundwater in catering to the service delivery functions in respect of irrigation, hydro-power, domestic water supply etc.

4. Multi-Purpose Area Based Development and Creation of Mahaweli Authority of Sri Lanka

Having realized the limitations of sectoral approaches to development, the Government of Sri Lanka introduced an area based, multipurpose Mahaweli Development Program with an integrated approach to development. In 1968, on the request made by GOSL the Mahaweli Development Master Plan which was prepared UNDP/FAO team, for stepwise implementation over a period of 30 years, had been revised under the Accelerated Mahaweli Development Program (AMDP) in 1977. Accordingly the period of implementation was reduced to 6 years to implement the MADP, Mahaweli Authority of Sri Lanka was established under a special government Act -23 of 1979.

Major components of the program were; providing irrigation facilities for dry zone agriculture, generation of hydro-electric power, settlement of displaced and landless families by providing required physical and social infrastructure for human habitation, providing marketing facilities for agricultural produce and social facilities for sports, cultural and religious purposes.

5. Implementation of Accelerated Mahaweli Development Program (AMDP)

Project almost implemented with the donor

assistance from all the major donors such as World Bank, European Commission, JICA, OECF (JBIC), SFD, Kuwait Fund etc totaling amount approximately SLR 90 billion (year 2000). At the end of the AMDP following physical output was observed.

- a) Five Major Dams (03-Rockfill Dams + 02 Concrete Dams.)
- b) Trans-basin Canals/ Anicuts-02 Units
- c) Irrigation Canals (All Types)-8350 km
- d) New Irrigable Lands-120,000 ha
- e) New Roads (All Grades A, B C &D)-1350 km
- f) New Schools –310 Units
- g) Other Service Buildings-592 Units

6. Significant achievement by Mahaweli Authority of Sri Lanka under (AMDP)

- a) At the end of the AMDP, power generation capacity of the country was increased by 137% with the operation of above 5 major multipurpose dams which broadly regulate water for irrigated agriculture and generation of power. Cumulative value of electricity generated by Mahaweli Power Stations are Rs 87 billion (year 2000). Mahaweli Energy/ Power Contribution-55% of national requirement (1994-95).
- b) Newly developed Mahaweli paddy cultivation lands cover 16% of the total paddy cultivation area of the country. But Mahaweli contribution is 25% of the national rice production. Cumulative value of crops (paddy / OFCs) produced by Mahaweli lands are Rs 94 billion (year 200).

7. Indirect benefits of AMDP

- a) Rural-Urban Migration largely averted
- b) Created minimum 250,000 agriculture direct labor days / day
- c) Created about 350,000 indirect labor days / day in service sectors
- d) Living standards of poor communities were largely improved.
- e) Community empowerment in rural sector was largely visible.
- f) Health situation largely improved in dry zone (e.g. drastically reduced Malaria epidemic)

8. Negative impacts of AMDP

- a) Drastic reduction of forest cover-10%
- b) Influenced to human-elephant conflicts
- c) Very valuable lands were submerged
- d) Concept of green GDP not much adopted

9. Current transformation

As implementing agency Mahaweli Authority of Sri Lanka has now passed little more than two decades and for the sustainability perspective Government of Sri Lanka has decided to transfer it's role from implementation to management. Therefore now Mahaweli Authority of Sri Lanka moving towards River Basin Management to address:

- a) Inter-sectoral allocation of water resources among diverse users / uses
- b) Management of multipurpose water infrastructure
- c) Watershed / Water quality / Riverine Management
- d) Reliability of water availability to meet all



demands

- e) Demand management through conservation measures
- f) Impacts on environmental health concerns
- g) Institutional development-public-private sector partnership, awareness creation and education

10. Conclusion

After having this long journey, Mahaweli Authority of Sri Lanka has now proved its' need and importance of operating it as a River Basin Management Organization since a "River Basin" is the most logical unit for implementation of Integrated water resources management (IWRM) concept and to support to this idea, **Government of Sri Lanka has now established a separate Cabinet Ministry, namely Ministry of Mahaweli and River Basin Development** to give more attention for this important sector. Similarly Sri Lanka has been identified as the focal point for coordinating River Basin Management in South Asia and Mahaweli Authority of Sri Lanka as the Driver Agency of SASNET-RBO.

* NARBO Secretariat in JWA received this article from Mr. Sudharma Elakanda, Network Coordinator, Mahaweli Authority of Sri Lanka on November 8. His e-mail address is elamrrp@sltnet.lk

Appendix 8

The outline of the First Training Course on IWRM

I. Background

One of the targets set by the World Summit on Sustainable Development (WSSD) is for all countries to put in place an Integrated Water Resource Management approach for managing their water or the so-called "IWRM plan" by 2005. IWRM is actually a process, and in order to prepare a plan, the key elements of IWRM must be integrated into the overall water resource management from the central government down to the grassroots level.

Need for RBOs. The 1992 Dublin Conference referred to the need to manage water resources *at the lowest appropriate level*. This has become one of the basic principles underpinning the IWRM approach, and it has led to increased recognition that river basin organizations (RBOs) can realize IWRM at the basin level with the involvement of stakeholders.

Need to Network RBOs in Asia. A network to assist RBOs in Asia in their work of introducing and operationalizing the IWRM approach does not exist yet. RBOs need to network for exchanging information and experience on their operations; and access for their staff to training and capacity building that draws on the technical and non-technical experience in managing water resources in Asia.

The Network of Asian River Basin Organizations (NARBO). Recognizing the need for networking and capacity building in the implementation of IWRM, the Water Resources Development Public Corporation of Japan (recently reconstituted as the Japan Water Agency), the Asian Development Bank, and the Asian Development Bank Institute decided at the 3rd World Water Forum in March 2003 in Kyoto, Japan, to collaborate in launching NARBO, and a letter of intent was signed at the Forum on 21 March 2003. NARBO aims to achieve IWRM in river basins throughout Asia. Specific objectives were to (i) strengthen the capacity and effectiveness of RBOs in promoting IWRM and improving water governance through training and exchange of information and experience among RBOs and their associated water sector agencies and knowledge partner organizations in Asia; and (ii) advise in the establishment of RBOs in Asia. The 1st NARBO General Meeting was held in Indonesia, in February 2004 whereby the NARBO Charter was confirmed, the NARBO constitutional body was selected; and the NARBO action plan was formulated.

Training in Thailand. One of the prioritized capacity-building activity in the NARBO action plan is the training courses for IWRM. This training program in Thailand is the first activity and it is significant for NARBO because Thailand's participatory approach to IWRM and its success in institutionalizing the IWRM process through planning and budgetary instruments is unique and highly relevant to other DMCs. Thailand has been introducing IWRM into the management of water resources as well as other natural resources. In order to decentralize the decision-making and responsibility to the stakeholders in the river basins, an evolving process of involving the stakeholders in the design of RBC organizational structure as well as functions has taken place. The Thai Government has authorized the establishment of RBCs for all 25 major river basins, and starting to delegate the authority to the RBC with respect to preparing river basin plans and approving projects in the basin for budget allocation.

It is therefore a good opportunity to share the Thai experiences with water-related professionals in the region, so that the process can be better understood as well as for further improvement. In addition, there are a number of community-based projects which have incorporated the concept of IWRM in managing their water. These projects are managed by the users group and rely on simple traditional approaches as well as methods. With the introduction of IWRM, it further enhances the efficiency of these projects.

II. Objectives of the Training Program

The Regional Training Program on IWRM and Strengthening of River Basin Committees aims to strengthen the capacity of IWRM practitioners with emphasis on putting concepts into practice. The training workshop's specific objectives are:

- Equip the water-related professionals in the region to have a good understanding of the IWRM concepts;
- Present case studies and field experiences on actual water management at a basin and country level; and
- Enable the participants to translate the IWRM concepts into the planning process.

Expected Outputs

- Daily written report of what participants have learned
- Analysis of the various project sites visited with respect to the application of the IWRM concepts
- Individual strategies or action plans for either organizational or country level developed by participants and an outline or roadmap to put IWRM into practice
- Group presentation of project assignment

Program

The program (proposed sessions attached) would provide the participants an opportunity to gain field experiences to complement the lectures that will be presented. The training will be conducted for 2 weeks from 26 July to 6 August 2004.

The first week will focus on the concepts and implementation process. Case studies in Thailand and Japan will be presented. The training mode will be more of exchange of opinions and open discussions rather than pure classroom type of lecturing. The topics to be covered are:

- Concept of IWRM
- Process of integrating IWRM into the management procedure
- Evolving process in establishing RBOs/RBCs
- Capacity building of RBOs/RBCs
- Sharing experiences of variety fields

The participants will then be exposed to successful community-based management projects as well as a new initiative of H.M. the king of Thailand of a small watershed management project in the northeastern part of Thailand during the second week of the training. The participants will have the opportunity to discuss and exchange views with the local leaders and water users groups.

The participants will also have dialogues with RBOs/RBCs for first-hand information.

Participants will be grouped and each group will have discussion in accordance with the themes proposed by secretariat and participants themselves.

III. Venue, Hotel accommodation and others

Venue

The venue is the Irrigation Development Institute as follows;

Address : Tivanont Rd, Pakkred, Nonthaburi 11120

Tel & Fax : 02-5838312, 02-584-0378-9 Email : Lersak@irricollege.ac.th

Hotel

The Hotel is T.K. Palace Hotel as follows;

address : 54/7 Chaengwattana Rd, Soi 15 Laksi, Bangkok, 10210

Tel & Fax : 02-574-1588 Fax 02-5742622

Lotus Hotel - Pang Suan Kaew

Address : Tambon Suthep, A. Muang, Chiang Mai 50200, Thailand

Tel 66-053-224333, Fax 66-053-224493

Pick-up from the Airport will be arranged.

Inquiry on above matters;

Mr. Lersak Rewtarkulpaiboon, Director of Irrigation Development Institute

address : Tivanont Rd, Pakkred, Nonthaburi 11120

Tel & Fax : 02-5838312, 02-584-0378-9 Email : Lersak@irricollege.ac.th

Hotel for Secretariat arranged by Thailand side.

The Miracle Grand Hotel, 99 Vibhavadi-Rangsit Road, Don Muang, Bangkok 10210

Thailand Tel 66-02-5755599, Fax 66-02-5755555

Email info@miraclegrandhotel.com

Training Fees

Training costs will be shared by JWA, ADB, ADBI, TWRA, the participants, and other supporting organizations. NARBO member organizations proposing training candidates will be required to contribute a registration fee not exceeding \$250 in cash from their own resources, which can include ongoing TA projects. This requirement was adopted to ensure the ownership and contributions of NARBO members in the network's activities and will serve as precedent for design of further NARBO activities. The fee partly covers the total costs of (i) training materials, including a CD version of the training materials and report; (ii) local transport cost by bus, Bangkok-Chiang Mai-Bangkok; (iii) lodging AND (IV) Airfare.

Contact Persons

TWRA (Thailand Water Resources Association)

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President, Thailand Water Resources Association

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NARBO Vice-Secretariat

Dr. Takeyoshi Sadahiro

Japan Water Agency (JWA)

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IWRM Training Program
First Week, 26th July – 30th July

Irrigation Development Institute, Tivanont Rd, Pakkred, Nonthaburi 11120 Bangkok

DAY 0 – 25th July 2004 Check in Hotel

DAY 1 – 26th July 2004

0830-0900 Registration of Participants

0900-1000 Welcome Remarks and Opening Speeches

Facilitator and Emcee: Dr. Apichart Anukularmchai, President, TWRA

Speeches:

Secretariat of Thailand

Dr. Apichart Anukularmchai, President, TWRA

NARBO Vice-Secretary General

Takeyoshi Sadahiro, Director General of Research Institute of JWA

Wouter Lincklaen Arriens, Lead Water Resources Specialist, ADB

Toru Tatara, Special Advisor to the Dean, ADBI

Welcome Remarks:

Department of Water Resources, Thailand

Mr. Sompol Sukhotu, Deputy Director-General

1000-1030 Tea Break

1030-1200 Concept of IWRM

Introduction of Participants

1030-1130 Concept of IWRM

Lecturer: Dr. Apichart Anukularmchai, President, TWRA

1130-1140 Q & A and Free Discussion

1140-1200 Briefing on the Training Program and Individual & Group Assignments

Secretariat of Thailand

Dr. Apichart Anukularmchai, President, TWRA

NARBO Vice-Secretary General

Takeyoshi Sadahiro, Director General of Research Institute of JWA

Wouter Lincklaen Arriens, Lead Water Resources Specialist, ADB

Toru Tatara, Special Advisor to the Dean, ADBI

1200-1300 Lunch

1300-1430 Presentation of Country/Organizational Report

Facilitator: Dr. Apichart Anukularmchai, President, TWRA

- 1300-1315 Jasa Tirta II Public Corporation Experience in Managing Citrum River Basin, Indonesia by Herman Idrus, Head of Research and Development Bureau / CES, and Nurlaila Noer, Head of Quality Management Unit / DRA, Jasa Tirta 2 Public Corporation
DISCUSSION
- 1315-1330 Water Resources Management in Cambodia by Sao Samphois & Chhun Bunnarith, Ministry of Water Resources and Meteorology
DISCUSSION
- 1330-1345 Indonesia Water Partnerships: Organizational Structure, Vision- Mission and Activities by Achmadi Partowijoto, Senior Water Management Specialist, Indonesia Water Partnership
DISCUSSION
- 1345-1400 Integrated Water Resources Development and Management in a River Basin Context: the Brantas River Basin's Experience, Indonesia by Soegiarto, Chief of Division for Operation and Maintenance & Koesmartini, Chief of Planning and Controlling
DISCUSSION
- 1400-1415 Jeneberang River Basin Development Project, Indonesia by Haryanto, Jeneberang River Basin Development Project
DISCUSSION
- 1415-1430 Water Resources Management in Lao PDR by Phonechaleun Nonthaxay, Chansouk Phimvongsa, and King Kham Manivong, Directors, Water Resources Coordination Committee
DISCUSSION
- 1430-1500 Tea Break
- 1500-1630 Presentation of Country/Organizational Report**
Facilitator: Dr. Apichart Anukularmphai, President, TWRA
- 1500-1515 Experience of Thailand on IWRM by Bantha Kwanyuen, Assistant Professor, Kasetsart University, Thailand
DISCUSSION
- 1515-1530 Agno River Basin Development Commission, Philippines by Tony Leo Repollo, Executive Assistant and Delia L. Abalos, Planning Officer, Agno River Basin Development Commission
DISCUSSION
- 1530-1545 Laguna Lake Development Authority, Philippines by Leonor Poserio, Fiscal Examiner II, Laguna Lake Development Authority
DISCUSSION

- 1545-1600 Organizational Report, Department of Water Resources Management (DWRM), Ministry of Natural Resources and Environment (MoNRE), Viet Nam
by Nguyen Chi Yen, Deputy Chief of Bureau and Phi Quoc Hao, Master of Engineering, Bureau for Water Resources Protection, DWRM, MONRE
by Pham Quoc Hung, Officer, General Office of RBOs, DWRM
DISCUSSION
- 1600-1615 Red River Basin Planning Management Organization, Viet Nam
by Bui Nam Sach, Deputy Chief of Planning Division for North Regions, Institute of Water Resources Planning - MARD
DISCUSSION
- 1615-1630 Organizational Structure and Roles of the National Water Resources Board (NWRB), Philippines
by Jorge M. Estioko, Chief Water Resources Development Officer and Jesusa T. Roque, Engineer III, NWRB
DISCUSSION
- 1630-1700 Plenary Discussion

DAY 2 – 27 July 2004

0830-1200 Case Study of Japan and Thailand

Facilitator: Ick Hwan Ko, Director of Hydro-Systems Engineering Center, KOWACO

- 0830- 0930 Water Resources in Japan and the Development of IWRM in Kiso River
by Hiroyuki Shindou, Director of International Affair Division, JWA

- 0930-1000 Q & A

- 1000-1030 Lecture: Implementation of IWRM In Thailand
by Dr. Apichart Anukularmphai, President, TWRA

- 1030-1200 Q & A

1200- 1300 Lunch

1300-1430 ISO 9001 & IWRM

Facilitator: Hideshi Sasahara, Deputy Director of International Affair Division, JWA

- 1300-1400 Implementation of Quality Management System ISO 9001:2000 in IWRM in the Brantas and Citarum River Basins, Indonesia
by Ir. Alfian Rianto, M. Tech, Perum Jasa Tirta I and Perum Jasa Tirta II

- 1400-1430 Q & A

1430-1500 Tea break

1500-1630 Preparations for the Group Assignment

See appendix

DAY 3– 28 July 2004

0830-1200 Establishment of RBC's in Thailand

Facilitator: Wouter Lincklaen Arriens, Lead Water Resources Specialist, ADB

0830- 1200 Establishment of RBC's in Thailand
by Dr. Apichart Anukularmphai, President, TWRA

Q & A

1200- 1300 Lunch

1300-1430 Public Participation

Facilitator: Toru Tatara, Special Advisor to Dean, ADBI

1300-1330 Key Concepts and Strategic Elements in Public Participation for IWRM
by Lehuu Ti, Economics Affair Officer, UNESCAP

1330-1400 Contribution of “Traditional PIM that is Harmonized with Conditions in Asia “ to
Enhancement of IWRM
by Mr. Yasuhiro Ochii, Counselor, Toyogawa Project, JWA

1400-1430 Q & A

1430-1500 Tea break

1500-1630 Participatory Process

Facilitator: Dr. Kampanad Bhaktikul, Asst. Professor, Mahidol University

1500-1530 by David Jezeph, Chief of Water Resources Section, UNESCAP

1530-1600 by Wouter Lincklaen Arriens, Lead Water Resources Specialist, ADB

1600-1630 Q & A

DAY 4 – 29 July 2004

0830-1000	Concept of Environmental Flow Facilitator: Dr. Apichart Anukularmphai, President, TWRA
0830- 0930	Concept of Environmental Flow by Dr. Kampanad Bhakpikul
0930-1000	Q & A
1000-1030	Tea Break
1030-1200	Wet-land Management Facilitator: Dr. Apichart Anukularmphai, President, TWRA
0830- 0930	Wet-land Management by Mr. Alvin Lopez, IUCN
0930-1000	Q & A
1200- 1300	Lunch
1300-1430	Water Supply System Facilitator: Hideshi Sasahara, Deputy Director of International Affair Division, JWA
1300-1400	Integrated Water Supply Management System by Jae-Heung Yoon, Director, KOWACO
1400-1430	Q & A
1500-1630	Basin Planning Facilitator: Ick Hwan Ko, Director of Hydro-Systems Engineering Center, KOWACO
1500-1530	Evolution of Approaches and Tools for Basin Planning towards IWRM by Lehuu Ti, Economics Affair Officer, UNESCAP
1530-1600	Basin Planning by Ick Hwan Ko, Director of Hydro-Systems Engineering Center, KOWACO
1600-1630	Q & A

DAY 5– 30 July 2004

0830-1000 Application of IWRM Tools

Facilitator: Dr. Apichart Anukularmphai, President, TWRA

0830- 0900 by David Jezeph, Chief of Water Resources Section, UNESCAP

0900-0930 Application of GWP Toolbox
by Kobkiat, Kasetsart University, Thailand

0930-1000 Q & A

1000-1030 Tea Break

1030-1200 Transboundary

Facilitator: Wouter Lincklaen Arriens, Lead Water Resources Specialist, ADB

1030-1130 Exploring Opportunities for Transboundary Water Cooperation through Basin
Development Planning
by Mak Solieng, Environmental Natural Resources Planner of the Basin Development
Planning, MRC

1130-1200 Q & A

1200- 1300 Lunch

**1300-1630 1) Participant to work on group assignment
2) Secretariat - Meeting / Brainstorming on IWRM (Monitoring and Evaluation)**

Facilitators :

Apichart Anukularmphai, President, TWRA

Takeyoshi Sadahiro, Director General of Research Institute of JWA

Wouter Lincklaen Arriens, Lead Water Resources Specialist, ADB

Toru Tatara, Special Advisor to the Dean, ADBI

1500-1530 Tea break

1530-1630 End

IWRM Training Program
Second Week, 1-6 August 2004, Chiang Mai, Thailand

1st August, Sunday		Travel to Chiang Mai
	06:00	Leave the Hotel
	08:30 – 09:30	Visit Chao Phraya Diversion Dam
	09:30 – 11:30	Arrive Kampengpet
	11:30 – 12:00	Lunch
	12:00 – 14:30	Arrive at Bhumipol Hydropower Dam
	14:30 – 15:30	Briefing and visit Dam Site
	15:30 – 20:00	Arrive at Chiang Mai, Check in at Pang Suan Kaew Hotel
2 nd August, Monday	08:30	Leave Hotel for Ping river boat trip
	09:00 – 11:00	Ping river restoration project
	11:30 – 12:30	Lunch
	12:30 – 13:00	Doi Pui
	13:00 – 14:30	High Land agriculture
	14:30 – 15:30	Doi Suthep temple
	15:30 – 16:30	Return to Hotel
	19:30 – 21:30	Discussion and preparation of group paper
3rd August, Tuesday	08:30	Leave Hotel for Chiang Dao watershed
	10:00 – 12:00	Briefing and site visit
	12:00 – 13:30	Lunch
	13:30 – 14:30	Chiang Dao cave
	14:30 – 15:30	Mae Ngud Dam
	15:30 – 17:00	Return to Hotel
	19:30 – 21:30	Discussion and preparation of group paper
4th August, Wednesday	08:30	Leave Hotel for Chom Tong Traditional water
	08:30 – 12:00	management
	12:00 – 13:00	Briefing and site visit
	13:00 – 14:00	Lunch
	14:00 – 15:00	Mae Kang water fall
	15:00 – 16:00	Ban Tawai
	16:00 – 17:00	Visit wood carving village
	19:30 – 21:30	Return to Hotel Discussion and preparation of group paper
5th August, Thursday	09:00	Leave Hotel for Huai Hong Krai Project
	09:40 – 10:30	Briefing
	10:30 – 12:00	Site visit
	12:00 – 13:00	Lunch
	13:00 – 14:00	Visit Moo Ban Hae Dang
	14:00 – 15:30	Visit Mae Kuang Dam
	15:30 – 16:15	Return to Hotel
	16:30 – 18:00	Discussion
6th August, Friday	08:30 – 12:00	Presentation of individual and group papers
	13:00 – 15:00	Organizers' evaluation meeting
		Participants free time
	18:30	Farewell dinner
7th August, Saturday		Return to Bangkok
	07:00 – 12:00	Leave for Bangkok
	11:00 – 12:00	Visit Sukhothai (World Heritage)
	13:00 – 14:00	Lunch
	14:00 – 18:00	Return to Bangkok
		Check in T.K. Palace Hotel * Some participants return home
8th August, Sunday		Participants Return Home

Session Description

Concept of IWRM

Recently, IWRM has become popular as a holistic approach to water management. In this session, the overall view of the IWRM concept will be explained; and the topics to examine IWRM for Asia relevant to NARBO activities would be pointed out.

Country/Organizational Report

Asia region contains various aspects and features in terms of the situation of water resources and social perspectives. The appropriate approach in water management for each country and several basins would be examined. In this session, information on the differences and similarities of participants' organizations will be shared, and those will be used as the basis of discussion.

Case studies of Thailand and Japan

Thailand has facilitated to establish RBCs in recent years, and to uniquely re-structure the government body, especially regarding water management. Through the description of activities, participants will share/know the efforts, key points and referential experiences. Japan has been developing the water resources development through the practical approach on IWRM in support to economic growth. One of the special aspects of Japanese IWRM, which is one of the longest history of IWRM in the world, is to be implemented nationwide.

ISO9001 & IWRM

The Brantas River Basin, supervised by Jasa Tirta I, Indonesia, has installed the concept and approach of ISO9001 for the management of water. In this session, the experiences in terms of effect and effort of ISO9001 will be introduced.

Establishment of RBC's in Thailand

Thailand Water Resources Association has contributed to facilitate water resources management of Thailand through IWRM approach. Many RBCs were established and will be established from now on. In this session, the role and effect of RBCs in Thailand will be introduced.

Public Participation & Participatory Process

For the public participation and participatory process in Asia, the respect on the traditional system in local communities is highly significant. In particular, the concepts and enrichment processes are important for sustainable development. In this session, modes of participation will be discussed, including adjustment with the traditional system in local community and legislature of new law as a practical approach.

Concept of Environmental Flow

In the past, the design and operation of large reservoirs have not taken environmental flow into account, resulting to negative impact downstream. Environmental flow is a rather new concept and needs to be estimated and allocated properly for the maintenance of downstream ecology as well as for fisheries. In this session the concept will be explained with some case studies.

Wetland Management

Wetland contributes to the reduction of flood, a source of water and more importantly, preserves the marine bio-diversity. In this session, the concept and management of wetland will be explained and demonstrated with case studies.

Water Supply System

Water supply is one of the significant functions of water resources management. In this session, the experiences of water supply in Korea are introduced at the comprehensive water management point of view. The key point of water supply is to satisfy not only quantity but also quality. Korea also has high population density, i.e. for the plain and shallow hill areas. Water supply management in Korea is an appropriate example of water management for the Asia region having high population.

Application of IWRM Tools

GWP has developed IWRM ToolBox with many case studies to demonstrate the application of IWRM. In this session, participants will be introduced to the usage of IWRM ToolBox and how to access it.

Transboundary

The basin development planning of the Mekong River Commission will be introduced, with focus on information regarding community approach and comprehensive planning. This session is particularly relevant for the further development of riparian countries in Asian.

Basin planning

Basin planning from the scientific and engineering viewpoints is the basis of integrated management. In this session, institutional and management measures within the physical and institutional setting of river basins, as well as roles in river basin planning and management are lectured. Examples in Korea and US are introduced as case studies.

Brainstorming on IWRM

In this session, some subjects/topics prepared by Secretariat and/or trainees are discussed, followed by group discussion. Example of topics:

- What is the key point of decentralizing trend in Asian countries?
- How can we improve our capability and skills toward the future?
- What is the real necessity method to share the information?
- Flood, Disaster and Water resources development.
- Difficulty of water quality management in the high population density
- Public Participation and IWRM
- What is the key point of IWRM in Asia?
- How can we send our Asian voice to the world?
- How can we implement the infrastructure for water resources development in collaboration with people?
- How can we have a long vision for IWRM in Asia?
- Do we have any possibility/chance to contribute to solve the water resources problems in our region and/or other regions?
- How can we, residents of monsoon Asia, send the message to the world?

Appendix

Briefing of the training program and report submission

Individual assignments

(each participant to submit reports before the end the second week and the evaluation form before departure)

1. Summarize your lessons learned from the course, with a plan how you will use them for yourself and your organization, with specific results and time frame. (max 3 pages)
2. Complete the evaluation form for the training course.

Group assignments

Limited number of slots for each group, and each group to present their report on last day
- group reports max 5 pages and separate overhead sheets (5 max) for presentation (or powerpoint)

Group 1: Advocating IWRM -

How can the basic principles of IWRM best be formulated, disseminated, and advocated to target groups?

Group 2: Institutionalizing IWRM -

How can IWRM be institutionalized and implemented through national, basin, and local planning and decision-making?

Group 3: Establishing New RBOs -

Why are new RBOs needed, what are their essential tasks, and how can they best be established?

Group 4: Building Capacity in RBOs -

How can RBO capacity be assessed and capacity building be prepared and implemented?

Group 5: Fostering Participation in IWRM -

Why is participation important in IWRM, who are the important stakeholders, and how participation be designed and implemented?

Appendix 9

The Memorandum of Understanding About Twinning Program

**MEMORANDUM OF UNDERSTANDING
ON TWINNING PROGRAM
BETWEEN
JAPAN WATER AGENCY
AND
INDONESIAN NETWORK OF ASIAN RIVER BASIN
ORGANIZATIONS**

The President of Japan Water Agency, on behalf of the Japan Water Agency ("JWA")
and

The Executive Director of Indonesian Network of Asian River Basin Organizations Secretariat, on behalf of the Indonesian Network of Asian River Basin Organizations ("Indonesian NARBO")

(hereinafter referred to as "**Both Sides**") have agreed to promote the Twinning Program between Both Sides.

Article I

OBJECTIVE

The objective of the Twinning Program is to strengthen each side's capacity on Integrated Water Resources Management through continuous sharing of information and experience.

Article II

SCOPE OF THE TWINNING PROGRAM

The scope of the Twinning Program focuses on fields related to promoting Integrated Water Resources Management.

Article III

FORM OF THE TWINNING PROGRAM

The form of the Twinning Program covers joint activities/programs which will be set and determined based on mutual agreement of the Both Sides.

Article IV

FUNDING

Each side will bear expenses for its dispatching officials such as airfare and accommodations under the twinning program, unless the Both Sides otherwise decide.

Article V

IMPLEMENTATION

The Both Sides will make the best efforts to ensure, as far as reasonably and lawfully possible, that the implementation of the Twinning Program is completed fairly and expeditiously. Each

side should appoint a program coordinator to coordinate the implementation of agreed joint activities/programs of the Twinning Program.

Article VI

CONSULTATION

The Both Sides will consult upon the request of either side on any questions relating to the twinning program, and will jointly endeavor, in a spirit of cooperation and mutual trust, to resolve any difficulties and misunderstandings which may arise.

Article VII

PERIOD OF THE TWINNING PROGRAM

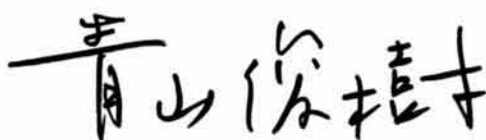
This Memorandum of Understanding ("MOU") is effective from the date of signing by representatives of the Both Sides. The MOU is valid for one year from the date of signing and is automatically extended for another years unless it is terminated with written notice by either party.

Article VIII

AMENDMENT AND TERMINATION OF THE TWINNING PROGRAM

This MOU may be amended through mutual consultation upon request of either party. Either party reserves the right to terminate this MOU on 6 (six) months notice before in writing to the other.

Done on 29 November 2004, one copy for each of the signatories and all texts being equally authentic.



Toshiki AOYAMA

President

Japan Water Agency



Ir. Sukrasno Sastro Hardjono, Dipl. HE

Executive Director

Indonesian Network of Asian River Basin
Organizations

Acknowledgement



Dr. Ir. Basuki Hadimuljono, M. Sc.

Network of Asian River Basin Organizations
Chairperson

Appendix 10

New Network of IWRM for Asia

New Network of IWRM for Asia Network of Asian River Basin Organizations ¹

Presented by

Sukrasno Sastro Hardjono ²

and

Tjoek Walujo Subijanto ³

[How IWRM Ought to Be]

Water plays various roles. Water is an indispensable resource for people to live and develop, and at the same time it is an important element that constitutes the environment of the area. At present, serious and complex problems concerning water have occurred worldwide, and in order to solve them, it is required that integrated water resources management be established that considers all the factors on water resources at the integrated and comprehensive point of view.

Integrated water resources management is not to devise one plan, but is a process in which an effort is made from an integrated perspective aiming at better water resources management. Each country or region has its own geographical and meteorological features; a history of water use, regional cultures and customs, and various value judgments exists that is based on these. Also, each country or region has a different situation of economic development. If the real situation and value judgment of each country or region are not respected, it is difficult to establish effective and appropriate integrated water resources management. Hence, appropriate integrated water resources management is not to be determined by only one rule & standard, let alone by forcing the systems of other countries upon the country. Integrated water resources management should be established based on the characteristic of the country or region.

To realize integrated water resources management, appropriate legal, administrative and implementation systems and organizations are required. However, these do not necessarily entail the realization of one legal system, one administrative system, or one organization that has been integrated. This may be an extremely unrealistic approach in some

¹ Presented in the International Conference on IWRM, Tokyo, 6 – 8 December 2004

² The Executive Director of Indonesian NARBO Secretariat, the Director of Directorate Water Resources Management, DGWR, Ministry of Public Works, Republic of Indonesia

³ The Vice Executive Director of Indonesian NARBO Secretariat, the Director of Jasa Tirta I Public Corporation, The Brantas River Basin Management Agency, Republic of Indonesia

cases. What is important is to establish a system in which impartial adjustments are sought among the laws, systems and organizations. When proceeding with integrated water resources management, the establishment of cooperative systems among the countries and organizations is very beneficial. In this regard, it is very important to establish mutual cooperation through regional networks maintained by countries and organizations that have similar situations and experiences in terms of geographical and meteorological conditions and water utilization.

[Problems of water in Asian monsoon regions]

In this regards, Asia Monsoon Region consists of Japan, the Korean peninsula, China (except the western interior, the Yellow river basin and surrounding areas), all of South East Asia, Nepal, Buthan Bangladesh, Sri Lanka, and areas east of the Deccan Plateau plus southwestern coastal regions of India. The Asian Monsoon Region is characterized by high precipitation compared with the global annual average of 1,000 mm, day-by-day fluctuation of precipitation, and under the influence of seasonal winds, distinct wet and dry seasons in a year and leads to utilize for rice paddy farming and high irrigation rate.

Monsoon Asian regions in which NARBO engages in activities are densely populated regions where around 3.3 billion people live, accounting for more than 60% of the world population. Also, the amount of water use in Asian monsoon regions accounts for about 50% of that all over the world, and the solution of problems of water in these regions makes a great contribution to the stability of the world. The population in Asian monsoon regions is increasing further, and in urban areas problems have occurred such as shortage of water resulting from the concentration of population, an increase in flood damage, and water pollution.

Asian monsoon regions, in general, are regions with much precipitation, and more than 70% of annual rainfall tends to concentrate in a wet season of the region. Hence, rivers in these regions have an increase and a decrease in flow rate, i.e. fluctuation that are repeated rapidly throughout the year. Meanwhile in many of the monsoon Asian regions, cities are formed in alluvial plains which are flood plains. Therefore, these cities have water problems of both flood and drought with an increase or decrease in the flow rate of a river.

In Asian monsoon regions, water use has been focused on agriculture of rice growing in rice paddies since olden times, and at present a large amount of water is still used for agriculture of rice growing in rice paddies. Meanwhile, with an increase in population and economic development, the demand for tap water and industrial water is increasing rapidly mainly in urban areas, and it has caused friction against the traditional use of a large amount of water for irrigation.

[Important points in IWRM in Asian monsoon regions]

The core of integrated water resources management in Asian monsoon regions, where problems of flood and water shortage coexist, is to implement the suitable river management at the comprehensive and sustainable manner. In order to solve these problems, together with nonstructural measures, structural measures such as the development and improvement of facilities on water resources are required. The implementation of these measures may have impacts on the environment. Environment conservation must sufficiently be considered in implementing the measures.

In Asian monsoon regions, traditional order or rule of water use for irrigation has been formed and it has also become a constituent factor in the regional culture in many cases such as “Subak” in Bali-Indonesia and “Cascade System” in Sri Lanka. When establishing integrated water resources management, traditional order or rule on water must sufficiently be considered.

Water is fundamental resource that are indispensable for people's lives, and a necessary amount of water needs to be supplied for all people. Water uses include those for the river environment, for irrigation, for domestic water, for industrial water, for power generation, and others, and such water is used in the upstream and downstream of the basin. Therefore, it is required that conflicts among the sectors and regions need to be solved to establish an impartial water use system.

[Necessity of the establishment of RBO]

Integrated water resources management is to be established for each basin as a lowest appropriate unit level, but in order to do so, it is required to establish an River Basin Organization (RBO) that engages the water resources development and management in the basin. In order for the RBO to play his roles, governmental support is indispensable and public participation is required.

The role of an RBO is to realize the stability and development of regions through appropriate management of water resources, and efforts are required that can acquire confidence of people and regional residents. The RBO should be the main component of institutional framework in performing integrated water resources management. The RBO should be a professional institution having sufficient capacities and supported with adequate budget to implement water resources management and facilities management in the basin. Capacity development for this purpose is of utmost importance.

[Establishment of NARBO]

In order to solve problems for establishing integrated water resources management in Asian regions, exchange of information and experiences, and joint efforts for capacity development among RBOs, relevant governmental organizations, knowledge partners and organization for international cooperation are indispensable. However, in Asian regions, no networks existed that play such roles.

For this purpose, on 24 February 2004 in Batu - Indonesia. NARBO was established jointly by water resources related organizations in Asian monsoon regions. The aim of NARBO is to provide support to RBOs in order to establish appropriate integrated water resources management in each country or region. The objectives are to strengthen the capacity and effectiveness of RBOs in promoting IWRM and improving water governance.

NARBO shall engage in activities of which emphasis is placed on the following activities.

1. Advocacy and raising awareness for IWRM among RBOs, water sector apex bodies, and leading water sector agencies in the region.
2. Sharing of information, good practices, and lessons learned for IWRM among the participating organizations.

Major methods to do so include the management of databases and web sites for information exchange on integrated water resources management in, sending of newsletters via e-mail and their placing on websites, and the holding of workshops.

3. Supporting NARBO members to improve water governance, including the enabling policy, institutional, and legal framework for IWRM, and the formulation of action plans.
4. Building capacity of RBOs in implementing IWRM, mainly through staff exchange and training among participating organizations.
5. Supporting RBOs with technical advice in regard to the planning, conservation, development, and the proper and efficient operation and maintenance of water resource facilities, to improve IWRM.
6. Fostering of regional cooperation for improved management of water resources management in transboundary river basins.

[Completed Activities of NARBO]

Some NARBO activities that already completed are:

1. Development of NARBO Website (Japan, June 2004)
2. NARBO Electronic Newsletter (Japan, June 2004)
3. 1st Training Program on IWRM (Thailand, July 2004)
4. Workshop on NARBO Website (Thailand, August 2004)
5. Member Consultation Workshop on Benchmarking (Indonesia, November 2004)

6. Twinning Program (November 2004)

NARBO is intended not for giving assistance to a specific organization by another specific organization, but for improving capacities of NARBO member themselves by accumulating information independently while presenting their own experiences mutually. Therefore, NARBO members need to participate in NARBO activities positively with the spirit of ownership by understanding the significance of networks.

NARBO hope to contribute toward the resolution of water issues in Asia for the stability and fruitful future of the World. We have to consider the role of an RBO is to realize the stability and development of regions through appropriate management of water resources, and efforts are required that can acquire confidence of people and regional residents. In order to realize the hope, the cooperation from all over the world will be anticipated & most welcome for Asia.

[Establishment of Indonesian NARBO Secretariat]

The expectation of Indonesian RBOs to join NARBO is to due to some opportunities to enabling international co-operation, having improvement of water resources management and development of its excellence, conducting interaction between RBOs.

Since Indonesia has the biggest number of NARBO Members, Indonesian NARBO Secretariat was established in April 2004. The establishment of the secretariat is purposed as a coordinating institution to facilitate communication and coordination of NARBO Members of Indonesia in implementing NARBO Action Plan 2004-2005 in accordance with Government policy.



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2004 NARBO ANNUAL REPORT

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