

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





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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



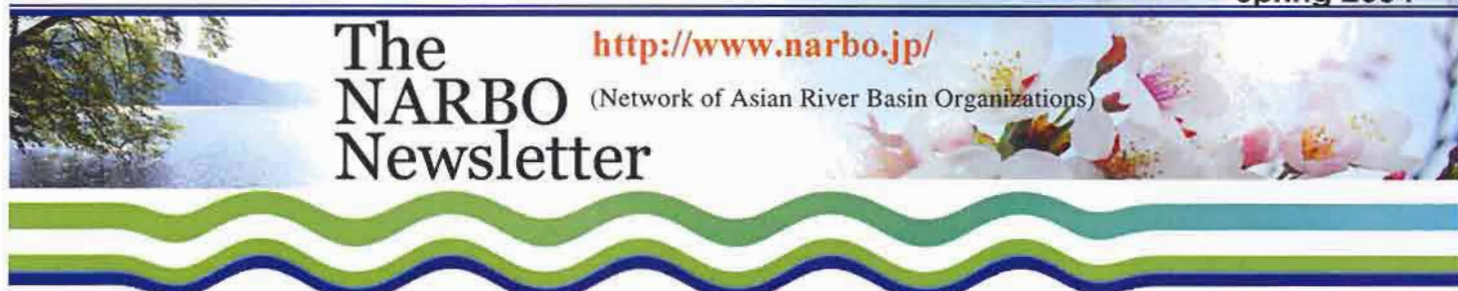
3. High expectations toward NARBO activities

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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- 2) The report on the Third South Asia Water Forum
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2. Announcement from NARBO Secretariat

- 1) The basic idea for NARBO website and database
- 2) Call for Information on RBO members
- 3) Role sharing of NARBO activities

3. Serial Topics

- 1) What is RBO? : Outline of Japan Water Agency (JWA)
- 2) IWRM Topics

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)**

○Government 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.



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- 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 Marlang Estioko (Pilippines)

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.



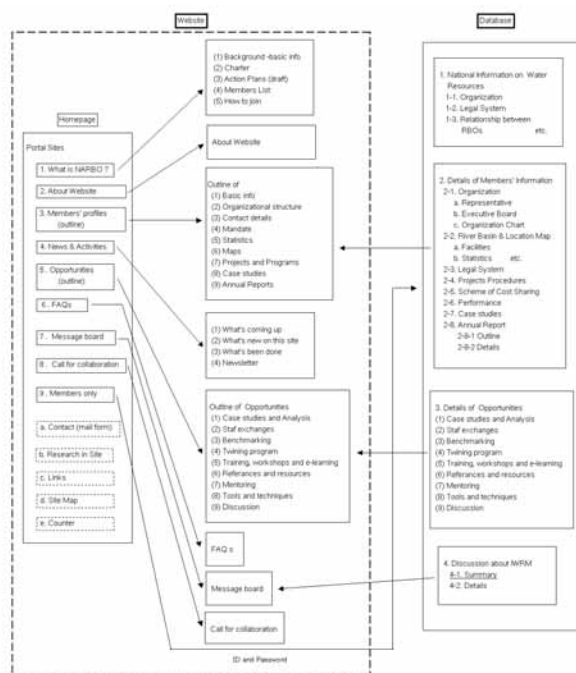
On the first day (October 14) with Mr. Toshiki Aoyama, President of JWA

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

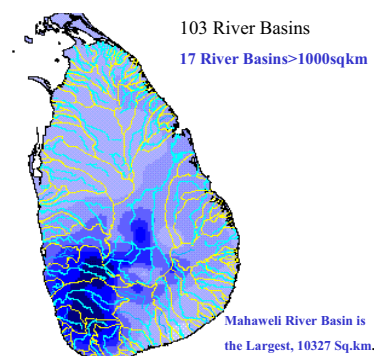
As being mentioned above, NARBO Secretariat are waiting for your offer of any information on your organization, movement of the water-sector in your country and new water-related legislations. We accumulate those gathered information in NARBO website database, so you'll access the database with ID to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