

Appendix 1

NARBO Charter

February 2004

(Revised February 2006)

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) An application to join NARBO should be submitted to the Secretary General with a recommendation from a NARBO member or the government.
- (b) The Secretary General evaluates the application and confer with the Chairperson and the Vice-Chairperson with his/her comments.
- (c) The Chairperson makes the final decision.
- (d) The Secretary General notifies the result to the applicant organization.
- (e) When the applicant receives the approval, the applicant organization becomes the member.
- (f) The new member is introduced to the NARBO members.

(5) Withdrawal from NARBO

- (a) The following are grounds for a member to cease to be a NARBO member:
 - (i) The member applies for withdrawal from NARBO membership;
 - (ii) The member organization is abolished; and
 - (iii) The member organization undertakes activities contradictory to the principles of NARBO.
- (b) When a member matches to one of these grounds, the Secretary General evaluates the ground and confer with the Chairperson and the Vice-Chairperson with his/her comments.
- (c) The Chairperson makes the final decision.
- (d) The Secretary General notifies the result to that organization.

(6) 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) In principle, the General Meeting is held in the Chairperson's country, except as otherwise determined by the Chairperson. The date are proposed jointly by the Chairperson and the Secretary General.
- (c) An extraordinary NARBO General Meeting can be convened at the request of the Chairperson, Vice-Chairperson, Secretary General or NARBO Secretariat before the next General Meeting, if there is a specific reason or if there are important issues to be solved urgently.
 - ii) The decision of the venue and date is the same as the decision for a General Meeting.
- (d) The venue, date and agenda of General Meeting shall be distributed with an appropriate advance notice.

(2) Participation

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.

Article 4.3. Chairperson and Vice-Chairperson

- (1) Nomination and Selection of the Chairperson and the Vice-Chairperson
 - (a) The Chairperson and the Vice-Chairperson are nominated by the Secretariat and selected by the NARBO General Meeting.
 - (b) In case the Chairperson is or becomes unable to perform his / her function as Chairperson, the Vice-Chairperson will exercise the function and responsibility of the Chairperson until a Chairperson is selected at the next NARBO General Meeting.
 - (c) The Chairperson will be deemed to be unable to perform his/her function as Chairperson if (i) The Chairperson declares that he/she is unable to perform his/her function as Chairperson; or (ii) The

Secretariat recognizes that the Chairperson is unable to perform his/her function as Chairperson.

(d) In case the Vice-Chairperson is or becomes unable to perform his/her function as Vice-Chairperson, an Acting Vice-Chairperson is nominated by the Secretariat and appointed by the Chairperson for a period extending until a Vice-Chairperson is selected at the next NARBO General Meeting.

(e) The Vice-Chairperson will be deemed to be unable to perform his/her function as Vice-Chairperson if (i) The Vice-Chairperson declares that he/she is unable to perform his/her function as Vice-Chairperson; or (ii) The Secretariat recognizes that the Vice-Chairperson is unable to perform his/her function as Vice-Chairperson.

(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

Article 4.4. 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.

(a) The Secretary General and the Vice-Secretary Generals are nominated by the Secretariat and approved at the NARBO General Meeting.

(b) In case the Secretary General or any Vice-Secretary Generals is or becomes unable to perform his/her function, an Acting Secretary General or an Acting Vice-Secretary General, as the case may be, is nominated by the Secretariat and appointed by the Chairperson for a period extending until the Secretary General or the Vice-Secretary General is selected at the next NARBO General Meeting.

(c) The Secretary General or a Vice-Secretary General will be deemed to be unable to perform his/her function if (i) he/she declares that he/she is unable to perform his/her function as the Secretary General or the Vice-Secretary General; or (ii) The Secretariat recognizes that the Secretary General or such Vice-Secretary General is unable to perform his/her function as the Secretary General or the Vice-Secretary General.

(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.

(2) 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

Action Plan -2006 ~ 2007-

NETWORK OF ASIAN RIVER BASIN ORGANIZATIONS (NARBO)

ACTION PLAN 2006-2007

- A. Advocacy, Raising Awareness, and Exchange of Information and Good Practices on Integrated Water Resources Management (IWRM)
- B. Capacity Building in River Basin Organizations (RBOs)
- C. Network Support

(As of 16 Feb, 2006)

| A. Advocacy, Raising Awareness, and Exchange of Information and Good Practices on Integrated Water Resources Management (IWRM) | | | | |
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| Activity | Remarks | Implementation Program (plan) | Leading Agency | Note (latest) |
| <p>Activities led by the NARBO Secretariat:</p> <p>1. NARBO Website (http://www.narbo.jp) The NARBO Web site will provide news and updates, information and reminders about NARBO's activities. The site linked to other related sites will release publications, case studies, electronic newsletters and online data bases</p> | <p>The website is managed by the Japan Water Agency (JWA) in collaboration with the Asian Development Bank (ADB) and the Asian Development Bank Institute(ADBI). It will be updated on regular basis.</p> | <ul style="list-style-type: none"> - Provide prompt and useful information. - Update Web site contents with frequency. - Manage database with various contents. - Implement on-line forum after feasibility study being conducted and its effectiveness being considered. | JWA | <div style="border: 1px solid black; padding: 5px; width: fit-content; margin-bottom: 10px;">Priority</div> <p>- NARBO members' positive involvement regarding information gathering is essential.</p> |

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| | | | | - JWA NARBO Secretariat has been making continuous efforts to fulfil members' requests such as lightening the size of website for the quicker display. |
| 2. NARBO Newsletter (E-news letter) The newsletter covers topics on good practices, lessons learned, activities etc. | JWA will issue newsletters. Basically, newsletters will be distributed by e-mail and via the website. | - Newsletters is being basically issued in every three month. - To ensure sending newsletters by email, organize email addresses informed and conduct survey of email accessibility of each recipient | JWA | <div>Priority</div> NARBO members' positive involvement regarding information gathering is essential. |
| 3. Online data base Necessary materials developed on IWRM practices are compiled. Materials comprise lessons learned in river basins in Asia, standards and manuals, recommended formats for river basin organization (RBO) annual reports, reference materials on IWRM, and topics of interests, etc. Materials are shared through website and in CDs. | ADBI and JWA will lead this work in collaboration with ADB and other partners concerned. The reports and materials will be accumulated in the database continuously. Contents of Online data base are distributed in CDs. | Compile various information as much as possible from member organization. | ADBI, JWA | <div>Priority</div> NARBO members' positive involvement regarding materials gathering is indispensable. |

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| <p>4. NARBO Annual Report Drawing on member organizations' inputs, the report will summarize NARBO's activities.</p> | | <p>-JWA will issue the NARBO Annual Report 2005 by May in 2006. -JWA will issue the NARBO Annual Report 2006 by May in 2007. - NARBO Annual Reports will be distributed through website and CDs.</p> | JWA | RBO Members are requested to submit their reports by the end of March the following year |
| <p>5 Media Relations and NARBO Promotion and Dissemination NARBO will implement a media strategy to send key messages on IWRM and the work of RBOs, and promotes NARBO's objectives and activities at suitable events in the region.</p> | <p>The Media Relations and NARBO Promotion will be conducted to attract great interest in NARBO's activities and to increase NARBO member</p> | <p>- ADB will develop the concept media strategy by June 2006. - The development and implementation of a media strategy will be initiated and supported by ADB as part of ADB's Water Awareness Program</p> <p>- JWA will promote NARBO and its activities by taking advantage of every opportunity in order to draw the attention to NARBO and to increase the number of the members.</p> | ADB, JWA | <p>Put much emphasis on increasing NARBO member</p> |

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| 6. NARBO General Meeting The general meeting is held, in principle, every two years in accordance with NARBO Charter, and JWA will lead the Secretariat's work to organize the meeting in consultation with the NARBO Chairperson. | | - The 2 nd General Meeting will be held in Indonesia, Feb 2006 | Chair person and Vice-Chair person JWA ADB ADBI | The 3 rd General Meeting will be held in the first quarter of year 2008. |
| 7. Remarkable events | | | | |
| 8. Others | | | | |

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| <p>Activities led by NARBO Member Organizations:</p> <p>1. NARBO members' websites</p> <p>NARBO member organizations develop and maintain their own websites and post relevant information on their activities in relation with IWRM and its implementation.</p> | <p>NARBO members should update them at least quarterly basis. JWA will encourage NARBO members to do so. NARBO secretariat will use the member websites to accumulate relevant information on activities for the NARBO website.</p> | <ul style="list-style-type: none"> - NARBO members are expected to develop their own web site by December, 2006. - NARBO members should strive to develop informative web site and to provide news and updates via online. - JWA will survey current situation of member's web site, | <p>NARBO members</p> | <div data-bbox="1704 276 1897 349" data-label="Text"> <p>Priority</p> </div> <p>All members are encouraged to update the websites .</p> |
| <p>2. NARBO members' Annual Report</p> <p>NARBO RBO members are obliged to submit an annual report on their activities in accordance with guidelines prepared by the NARBO Secretariat.</p> | <p>The member's annual reports will be prepared by RBOs and submitted to NARBO Secretariat by March 2005. Other NARBO members are expected to prepare an annual report too.</p> | <ul style="list-style-type: none"> - The annual reports 2005 will be prepared RBOs and should be submitted to NARBO Secretariat by March 2006. - Only 8 member organizations contributed annual report 2004 | <p>RBOs</p> | <div data-bbox="1727 807 1919 880" data-label="Text"> <p>Priority</p> </div> <p>It is highly expected all RBO members submit an annual report 2005 by the end of March 2006</p> |

| B. Capacity Building in River Basin Organizations (RBOs) | | | | |
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| Activity | Remarks | Implementation Program | Leading Agency | Note (latest) |
| <p>Activities led by the NARBO Secretariat:</p> <p>1. IWRM Training Program</p> <p>IWRM Training program is promoted in order for member organizations to develop their capacities. With an advantage of NARBO network, it is expected to diversity in training resources among members and others. Member organizations are expected to propose to be a host organization of the training.</p> | <p>In principle Training courses will be held 2 times every year. Training courses will be designed by the host organization, contributing organizations and the leading agencies with guidelines for participants selection, contents, modalities, organizational structures and cost sharing.</p> | <ul style="list-style-type: none"> - The 4th training course will be held in Indonesia in June 2006. - Following Training courses will be held. <ul style="list-style-type: none"> - The 5th training course : Nov. 2006. - The 6th training course : Jun. 2007. - The 7th training course : Nov 2007. | <p>JWA, ADB, ADBI, KOWACO</p> | <div>Priority</div> <p>NARBO Members are encouraged to be recipients organization</p> |

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| 2. Workshops Regional workshops will be held in conjunction with NARBO General Meeting. Thematic workshops in order to deepen discussion on specific themes concerning water resources management suggested by NARBO members. | Sub-regional workshops will be considered on demand. Deal with thematic workshop highly recommended by NARBO members. Organize workshops in series | - The Thematic Workshop on Water Allocation and Water Right will be held in NARBO member's country, May 2006, Oct 2006, and May 2007. - The Thematic workshop on Facilities Management will be held in 2006. | JWA, ADB, ADBI | <div>Priority</div> Small-scale workshops focusing on specific topics are preferable. NARBO Members are encouraged to be recipients organization |
| 3. Performance Benchmarking Establishment of Performance Benchmarking system for RBOs is supported by peer reviews. Performance improvement of RBOs is stimulated and practical exchange of experience is allowed. | The program is designed by NARBO Benchmarking Group consisting of ADB and IWMI in consultation with NARBO members. | - The RBO Benchmarking Workshop will be held in NARBO member's country, Apr 2006, Sep 2006, Apr 2007 and Sep 2007. | ADB IWMI | <div>Priority</div> |
| 4. Advisory visits to RBOs NARBO Secretariat staff visits RBOs to learn their work to implement IWRM and to provide advice and support for knowledge generation and sharing. | This activity can be collaborated with RBO exchange visit. | NARBO Secretariat will consider and determine implementation method by Aug. 2006. | JWA, ADB, ADBI | |

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| 5. Scholarship Programs NARBO Secretariat explores opportunities to promote participation of NARBO member organization staff in existing scholarship programs in the region and beyond. | NARBO Secretariat explores opportunities and welcome suggestions from NARBO members, knowledge partner organizations, academe and potential sponsors. | NARBO Secretariat will present an scholarship opportunity online | JWA, ADB, ADBI | Providing information on scholarship from NARBO members is anticipated. |
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| <p>Activities led by NARBO Member Organizations:</p> <p>1. RBO Centers of Excellence NARBO will recognize RBOs as centers of excellence in specific areas of IWRM expertise and stimulate opportunities for members to access and use the expertise within the network.</p> | | <p>- JWA will conduct research on NARBO members intention until Aug., 2006 and consider the possibility of arranging program.</p> | <p>JWA, ADB, ADBI</p> | <p>RBOs will indicate areas of expertise.</p> |
| <p>2. Twinning Programs RBOs will facilitate Twinning Program for closer relations among NARBO members. Various forms of the program highly recommended such as information exchange, staff exchange and exchange visit.</p> | <p>To be initiated and arranged by RBO members. Information will be stored, classified and accessed by members on the website.</p> <p>Exchange visit between NARBO Members is a step before entering Twinning Programs between 2 (two) NARBO Members</p> <p>Intensive communication between NARBO Members are encouraged to establish closer relationship between NARBO Members.</p> | <p>- Existing Twinning Program will be continued. Another new agreements on Twinning Program among NARBO members are highly expected.</p> | <p>NARBO members</p> | <div data-bbox="1753 715 1944 783" data-label="Text"> <p>Priority</p> </div> |

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| <p>3. ISO certification RBOs will explore opportunities for ISO certification to stimulate achievement and maintenance of standards.</p> | <p>To be initiated and led by Jasa Tirta I and II.</p> <p>It is desirable to continue to have the opportunities to lecture on ISO certification.</p> | <p>RBO Members-who intersested in ISO Certification are kindly encourage to collaborate with Jasa Tirta I & II</p> | <p>Jasa Tirta I, Jasa Tirta II</p> | |
| <p>4. Transboundary Water Management RBOs will explore opportunities to foster regional cooperation for improving water resources management in transboundary river basins through sharing of information and exchange of experience.</p> | | <p>- NARBO Secretariat will encourage considering the feasibility of transboundary water management</p> | <p>RBOs</p> | <p>Sharing information and experience accordingly. MRC will share their information and experiences.</p> |

| C. Network Support | | | | |
|---|----------------|---|-----------------------|---|
| Activity | Remarks | Implementation Program | Leading Agency | Note (latest) |
| 1. Technical Advisory Committee NARBO is considering the establishment of a technical advisory committee in accordance with the provision in the NARBO Charter, to support NARBO's work. | | - NARBO Secretariat will consider and determine implementation method by Aug. 2006. | | The details and the target time of the set up of the committee need to be discussed among JWA, ADB and ADBI. Any comments and suggestions are highly welcome |
| 2. Financial Resources The NARBO Charter provides the possibility to convene a financial support group to extend financial support for NARBO activities from other multilateral and bilateral agencies. | | | ADB | |

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| <p>3. Charting IWRM Program in Asia</p> <p>Charting IWRM Program in Asia will be undertaken a study of practical progress of implementating IWRM in river basins in the region, supported by ADB and IUCN, to improve exchange of information and experience, build capacity, present a region-wide perspective on the progress of IWRM, identity further actions needed, and expand NARBO's activities.</p> | | | <p>ADB IUCN</p> | |
| <p>4. Facilitating IWRM Investment Project</p> <p>Facilitating IWRM Investment Project will be helped by NARBO members to promote investments and financing for IWRM in their river basins, by getting advice from other members and parners in identifying and preparing river basin projects.</p> | | | <p>ADB</p> | |

Appendix 3

NARBO Members' List

List of NARBO Member and Interest to become member

As of 8th June, 2006

| | Member | | Interest |
|---|---------------|-----------------------|----------|
| | Formal Member | Pre-registered member | |
| River Basin Organization (RBO) | 16 | 0 | 2 |
| Government Organization (GOV) | 21 | 2 | 4 |
| Regional Knowledge Partner (RKP) | 15 | 1 | 1 |
| Inter Regional Knowledge Partner (IRKP) | 3 | 0 | 0 |
| Development Cooperation Agency (DCA) | 1 | 0 | 0 |
| Total | 56 | 3 | 7 |
| Contacted Organization and Others | | - | 1 |

| Classification | | Country/Region | | Organization | Representative/Signatory | Position |
|----------------|---------------|----------------|-------------------------------------|---|---------------------------|--|
| Member | RBO | Bangladesh | M | Bangladesh Water Development Board | Mr. Md. Azizul Haque | Director, Planning-I |
| | | Indonesia | M | Jasa Tirta I Public Corporation | Mr. Socheh | President Director |
| | | Indonesia | M | Jasa Tirta II Public Corporation | Mr. Djendam Gurusinga | 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) | Mr. Toshiki Aoyama | President |
| | | Korea | M | Korean Water Resources Corporation (K water) | Dr. Ko Ich Hwan | Director, Hydrosystem Engineering Center |
| | | Lao PDR | M | Nam Ngum River Basin Development Sector Project | Mr. Thatheva Saphangthong | Coordinator |
| | | Malaysia | M | Selangor Water Management Authority | Mr. Rahmat Sharif | Director |
| | | Philippines | M | Laguna Lake Development Authority (LLDA) | Ms. Dolora Nepomuceno | Assistant General Manager |
| | | Sri Lanka | M | Mahaweli Authority of Sri Lanka | Mr. Piyadasa Koralevidana | Director General |
| | | Vietnam | M | General Office for RBOs in Vietnam | Mr. Pham Quoc Hung | 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 |
| | | Vietnam | M | Day River Basin Organization | Mr. Le Duc Nam | Deputy Director of DWR, MARD |
| | | Vietnam | M | Vu Gia Thubon River Basin Organization | Mr. NGUYEN VAN SINH | Chief of GORBO's Secretariat Board |
| | Mekong region | M | Mekong River Commission Secretariat | Dr. Oliver Cogels | Chief Executive Officer | |

| Classification | | Country/Region | | Organization | Representative/Signatory | Position |
|----------------|-----|----------------|---|--|-----------------------------|---|
| Member | GOV | 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 |
| | | Indonesia | M | Directorate General of Water Resources | Mr. Imam Anshori | Director of Water Resources Management |
| | | Indonesia | M | West Nusa Tenggara Regional Office of Settlement and Regional Infrastructure (Dinas Kinitraswi Provinsi NTB) | Mr. Djalal | Chief of Regional Office |
| | | Indonesia | M | Bengawan Solo River Basin Development Project | Mr. Sudi Harsono | General Project Manager |
| | | Indonesia | M | Jeneberang River Basin Project | Mr. Billy Parmono | Acting General Project Manager |
| | | Indonesia | M | River Basin Water Resources Managenet Unit Pekalan Sampean(PSDA) | Mr. Wahjoe Pribowo, MT | Head of PSAWS |
| | | Indonesia | M | Balai Pengelolaan Sumber Daya Air Cijung-Ciliman Banten (BPSDA) | Ir.Winarjono, CES. MM | Head |
| | | Indonesia | M | Sermo Water Resources Management Unit (BPSDA) | Ms. Rani Sjamsinarsi Fauzie | Head |
| | | Indonesia | M | River Basin Water Resources Managenet Unit Citarum(PSDA) | Mr. Rustam Suharman | - |
| | | Japan | M | Water Resources Department, Land and Water Bureau, Ministry of Land, Infrastructure & Transportaton | Mr. Koji Nukina | Deputy Director, Water Resources Department |
| | | Lao PDR | M | Water Resources Coordination Committee Secretariat | Mr. Phonechaleun Nonthaxay | Head |
| | | Malaysia | M | Department of Irrigation and Drainage | Datuk. Keizrul Abdullah | Director General |
| | | Philippines | M | National Water Resources Board | Mr. Ramon Alikpala | Exective Director |
| | | Philippines | M | Department of Environment and Natural Resources | Ms. Analiza R. Teh | Assistant secretary |
| | | Sri Lanka | M | National Water Resources Authority | Mr. Ananda Jayaweera | Director |
| | | Thailand | M | Department of Water Resources, 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 (General Office for RBO, WRD MARD)) | Mr. Le Duc Nam | Deputy Director, DWR-MARD |
| | | 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 |

| Classification | | Country/Region | | Organization | Representative/Signatory | Position |
|----------------|------|----------------|---|---|-----------------------------------|---------------------------------------|
| Member | RKP | Southeast Asia | M | Global Water Partnership (GWP) SEARWP (Malaysia) | Datuk. Keizrul Abdullah | Chairperson |
| | | South Asia | M | Global Water Partnership (GWP) SAS RWP (Sri Lanka) | Mr. Nanda Abeywickrama | Chairperson |
| | | South Asia | M | South Asia Network of River Basin Organization (SASNET-RBO) | Mr. Don Clement Sudharma Elakanda | Network Coordinator SASNET-RBO |
| | | Bangladesh | M | Institute of Water Modeling (IWM) | Mr. Emaduddin Ahmed | Executive Director |
| | | Thailand | M | Thailand Water Resources Association (TWRA) | Dr. Apichart Anukulamphai | President |
| | | 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 Affaires |
| | | Indonesia | M | Research Institute for Water Resources | Mr. Eddy A. Djajadiredja | 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 |
| | | Indonesia | M | Sembrani Foundation | Mr. Mardjono Notodiharjono | Chairperson |
| | | Australia | M | The World Wildlife Fund International (WWF International) | Dr. Isabella Louis | Director, Asia Pacific Region |
| | | India | M | CapNET South Asia | Dr. Jasveen Jairath | Director |
| | | Thailand | M | IUCN - The World Conservation Union | Dr. John Dore | Leader, Asia Water & wetlands Program |
| | | Japan | M | JAWA-Japan Water Resources Association | Dr. Toru Kondo | President Director |
| | IRKP | Japan | P | Asian Development Bank Institute | Mr. Peter Mc. Cawley | Dean |
| | | Sri Lanka | M | International Water Management Institute (IWMI) | Mr. Andrew Noble | Head IWMI-SEA |
| | | Japan | M | Asia Pacific Association of Hydrology and Water Resources (APHW) | Dr. Katsumi MUSHIAKE | Secretary General |
| | DCA | Philippines | P | Asian Development Bank | Mr. Jan P. M. van Heeswijk | Director General |

| Classification | | Country/Region | | Organization | Representative/Signatory | Position |
|----------------|-----|----------------|---|---|-------------------------------|-------------------------|
| Interested | RBO | Pakistan | I | Water and Power Development Authority | Mr. M Mushtaq Chaudhry | General Manager (P&D) |
| | | Thailand | I | Bang Pakong River Basin | Mr. Chamroon Suaydee | Chairman, Sub-committee |
| | GOV | Bangladesh | I | Joint River Commision | Mr. Mir Sajjad Hossain | Director |
| | | 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 | 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 |
| | RKP | Japan | I | Ritsumeikan Asia Pacific University (Japan) | Dr. Fransisco P. Fellizar, Jr | Associate Professor |

| Classification | | Country/Region | | Organization | Representative/Signatory | Position |
|----------------|-----|----------------|---|--|--------------------------|--------------------|
| Pre Member | GOV | Pakistan | R | Indus River System Authority (IRSA) | Mr.Fida Hussain | Senior Engineer |
| | GOV | Malaysia | R | National Hydraulic Research Institute of Malaysia (NAHRIM) | Dr. Salmah Zakaria | Director |
| | RKP | Japan | R | JAWA-Japan Water Resources Association | Dr. Toru Kondo | President Director |

Note:

P = Promotor (Member)
M = Member
I = Interested to become a member
R = Pre-registered member

KP=Knowledge Partner
DCA=Development
Cooperation Agency

Appendix 4

Program of the Second General Meeting

Program of the Second General Meeting

DAY 0 13th February 2005 (Monday)

Time

Program

Arrival of participants, check-in and Registration

| | | |
|---------------|-----------------------|--|
| 18.00 – 19.00 | Secretariats' meeting | Secretariats, organizing committee, leading agency |
| 19.00 – 19.30 | Orientation meeting | |
| 19.30 – 20.30 | Reception dinner | |

DAY 1 14th February 2005 (Tuesday)

Field Visit

Time

Program

| | |
|---------------|---|
| 07.00 - 17.00 | Field visit, Good practice and issues on the site |
|---------------|---|

DAY 2 15th February 2005 (Wednesday)

Workshop

Time

Program

| | | |
|---------------|---|------------------------------|
| 08.30 – 08.40 | Opening address from PJTII | The president of PJTII |
| 08.40 – 08.45 | Briefing on the workshop program | JWA |
| 08.45 – 10.15 | Session 1 Water Quality Management | KOWACO |
| 10.15 – 10.30 | Break | |
| 10.30 – 12.00 | Session 2 Flood Management | JWA |
| 12.00 – 13.15 | Lunch | |
| 13.15 – 14.45 | Session 3 Water Financing | Indonesian NARBO Secretariat |
| 14.45 – 15.00 | Break | |
| 15.00 – 16.30 | Session 4 Performance Benchmarking | ADB, IWMI |
| 16.30 – 17.30 | Meaning and merits of Network activity - The questionnaire item 2 | JWA, ADB, ADBI |
| | Closing remarks on NARBO workshop | |
| 19.30 – 21.00 | Side event: Indonesian NARBO Members Meeting | Indonesian NARBO Secretariat |

| DAY 3 | 16th February 2005 (Thursday) | <i>General Meeting</i> |
|----------------------|--|---------------------------------|
| Time | Program | |
| 09.00 – 09.45 | Opening Session | Organizing Committee |
| 09.00 – 09.15 | Welcome Remarks and Overview of the meeting | Organizing Committee |
| 09.15 – 09.30 | Opening remarks | Chairperson(Dr. Basuki) |
| 09.30 – 09.45 | Keynote Address and Official Opening | Minister of Public Works, GOI |
| 09.45 – 10.00 | Break | |
| 10.00 – 12.00 | Session “The report of NARBO activity 2004-2005” | Chaired by chairperson |
| 10.00 – 10.15 | Overall review of activities 2004 -2005 | Secretary general & secretariat |
| 10.15 – 10.30 | Newsletter and web site | JWA |
| | Enhancement of Database for Information Sharing | |
| 10.30 – 10.45 | IWRM Training course | KOWACO |
| 10.45 – 11.05 | Twining program | Indonesian NARBO |
| 11.05 - 11.25 | Thematic Workshop | JWA/ADBI & RRBO |
| 11.25 – 11.40 | Others: Promotion and other events (Tokyo, SEAWF etc) | JWA |
| 11.40 – 12.00 | Discussion on implemented activities | JWA, ADB, ADBI |
| | The questionnaire. Item 1. | |
| 12.00 – 13.15 | Lunch | |
| 13.15 –16.00 | Session “NARBO Charter and Work plan 2006 – 2007” | Chairperson |
| 13.15 – 13.25 | Approval and withdrawal of NARBO member | JWA |
| 13.25 – 13.40 | Proposal and approval of the revised charter | JWA |
| 13.40 – 13.45 | Briefing of concept on Action plan 2006 – 2007 | Secretary General |
| 13.45 – 14.00 | Briefing on action plan 2006 – 2007 | JWA |
| 14.00 – 14.30 | Briefing on new program | ADB |
| | - Charting IWRM Progress in Asia | |
| | - Facilitating IWRM Investment Projects | |
| 14.30 – 14.45 | Q & A, Approval of Action plan 2006 –2007 | JWA, ADB, ADBI |
| 14.45 – 15.45 | Commitment Speech | Member Organizations |
| | (The questionnaire. Item 3) | |
| 15.45 – 16.00 | Break | |
| 16.00 – 16.15 | Announcement | JWA, ADB, ADBI |
| | Guideline of financial support by the secretariat | |
| | Membership fee | |
| 16.15 – 16.45 | Selection “NARBO Constitutional Body” | JWA, ADB, ADBI |
| 16.15 – 16.45 | Nomination and approval | |
| | Short speech of Chair, Vice-Chair and Secretary General | |
| 16.45 – 17.00 | Closing Session | JWA, ADB, ADBI |
| 16.45 – 17.00 | Closing remarks on NARBO General meeting | DG of WR |
| 19.00 – 21.00 | Farewell Dinner | |
| DAY 4 | 17th February 2005 | |
| | Participant are back to home countries | |

Appendix 5

Electronic Newsletter

The NARBO Newsletter

(Network of Asian River Basin Organizations)

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

Report of the recent activity

The First Thematic Workshop

— Water Allocation and Water Right —

Michitaro Nakai *

The 1st thematic workshop on water allocation and water right was held from December 5 to 9 in Hanoi, Vietnam. This workshop was organized by Red-Thai Binh River Basin Organization (RRBO), ADB, ADBI and JWA. 24 participants from 6 countries (Vietnam, Indonesia, Philippines, Thailand, Lao PDR and Japan) participated in this workshop.

On 6th and 9th, special lecture and 3 sessions were held. Special lecturer was Mr. Ian Fox, Principal Project Specialist of Vietnam Resident Mission, ADB, and the theme of the lecture is "Understanding water right and water allocation". Also, the themes of 3 sessions are "Water allocation issues", "Water right system" and "Drought management". In each session, participants made presentations and discussions, and finalized the sheets for session outcomes. Through these process, we could share the information on current situation and issues on water allocation and water right, which is one of the objectives of this workshop, so I think these sessions were very beneficial.

On 7th and 8th, field trips were held. On 7th, we went to the Hoa Binh Hydropower plant in Hoa Binh Prov-

ince, which is one of the most important infrastructures in Vietnam. On 8th, we went to Tac Huong Irrigation scheme in Thai Nguyen Province. In both field visits, participants were enthusiastic to make questions or discussions.

In addition, the situation of this workshop was broadcasted by Hanoi Television on 9th.

As a whole, all the participants of

this workshop were very enthusiastic and RRBO's arrangement was excellent, therefore this workshop finished successfully.

Finally, I'd like to express my sincere thanks to all participants, RRBO and its staff member, and all concerned organizations for their hard works and efforts.

*) ADBI, NARBO secretariat



Courtesy Call for Vice Minister
(on 5th December)



Scenery of Meeting



Hoa Binh Dam (On 7th Dec)



Tac Huong Irrigation Scheme (On 8th Dec)

Topics of this issue

Report of the recent activity

- The First Thematic Workshop - Water Allocation and Water Right -

Information from members

- Royal Development Project regarding Upstream Area Rehabilitation and Maintenance
- Teesta Barrage Project in Bangladesh

From the secretariat

- The Second General Meeting coming up

Information from members

Royal Development Project regarding Upstream Area Rehabilitation and Maintenance

Kanokwan Yoowong *

His Majesty the King of Thailand has been dedicated to development work particularly in local population's livelihood who always facing on several problems caused by poverty, public health and environmental degradation. In fact, most of local population in Thailand makes their living by agriculture and livestock, therefore, the abundant natural resources are required especially in water resources. For this reason, His Majesty the King has emphasized on upstream area and forest area development and rehabilitation.

Thailand is geographically and hydrographically divided into 25 river basins. Ping River Basin is a major river basin in Thailand covering the area of 5 provinces namely Chiang mai, Lam Pang, Lam Poon, Kam Phaeng Phet and Nakorn Sawan. It is divided into 2 parts: Upper Ping and Lower Ping River Basin. Its geography and geological structure create valuable ecosystem including various types of forests such as dry dipterocarp, mix deciduous, pine and hill evergreen forest which are significant upstream forests of Thailand. At present, Ping River Basin is facing the natural resources problems such as forest encroachment particularly in watershed, deforestation, cultivation of local products, soil and water degradation as well as water shortage and flood problem.

The major causes of continuous and hasty deforestation in the upstream area are population growth together with economic growth in Thailand. The local people require further land for livelihood, food production and agricultural products to respond their basic minimum needs. Deforestation is the significant causes for flood, drought, water holding capacity, soil erosion, landslides and river shallowness. In addition, many declined forest area in Thailand necessitate the urgent reforestation for rehabilitation of upstream area and wild life's habitat.

His Majesty the King has acknowledged the mentioned problems on water and forest resources which relate directly to the needs of rehabilitating and maintaining the upstream area in Thailand. Many Royal Development Projects have been demonstrated by his initiatives. The target of these projects is to assist the villagers in managing natural resources for their better livelihood. Huai Hong Khrai Royal Development Study Centre is one of the projects, it was established on December 11, 1982 in the area of Pa Khun Mae Kuang National Reserved Forest, Huai Hong Khrai river basin that is one of the Ping River Sub-basin, at Doi Saket District, Chiang Mai Province.

The center's area covers approximately 1,360 hectares. Formerly, there had been severe deforestation which caused drought and forest fires. The center, therefore, focuses attention on conducting study and research on various development patterns such as forest development by cultivating three types of trees for four benefits, which are economic, fruit and firewood. Besides, there is also the fourth benefit, which is the conservation of soil and water to increase moisture. There is also the conservation of watershed areas by using water from the irrigation system, from rains and check dams to maintain moisture as well as by establishing wet fire breaks. The study also emphasizes the use of various development patterns to enable farmers to rely on themselves without having to destroy the environment. The center's operations are divided into 2 parts as follows.

1. Tasks on study, experiment and research namely the study and development on water sources, forest, land, intensive farming, milk cow and livestock and fishery, the study and experiment on crop cultivation, conservation and development frog farming
2. Tasks on extension of study Centre can be classified into
 - Forest Development by training on



deforestation impact and forest fires to the villagers surrounding the center

- Land Development by training on soil and water conservation
- Agricultural Promotion by encouragement on crop cultivation, farm products, dry crops, industrial crops and organic agriculture
- Occupational Promotion in family by training on clothes sewing, food preservation within agricultural housewife
- Livestock Promotion by training on milk and beef cows and birds
- Fishery Promotion by training and promotion on a variety of fish species

Implementation of development work at the centre up to the present day has achieved a certain level of success particularly in terms of infrastructure construction, study, experimentation, research and intersectional cooperation among the various government agencies and in providing certain services to the people in the target villages encompassing the Centre.

In conclusion, Huai Hong Khrai Royal Development Study Centre is an illustration project to develop, rehabilitate and maintain natural resources particularly in water resources, land and forest in Thailand that provide moisture in the soil, allow the forest to stay green throughout the year. Finally, local population will get the benefits from the integration of natural resources management.

*) Bureau of International Cooperation
Department of Water Resources Ministry of
Natural Resources and Environment, Thailand

Teesta Barrage Project in Bangladesh

Md. Azizul Haque *

1. Background

Bangladesh is a country of agro-based economy. It has more than 300 rivers, tributaries and distributaries. Still a vast area of North Bangladesh suffers from scarcity of water for irrigation its agricultural lands, not only in dry months but also during monsoon when a prolonged spell of scarcity/no rainfall affect crops. The idea of irrigation from the Teesta River was conceived since British time (1945). In Bangladesh territory, the preliminary feasibility report of the project was prepared in 1960 by M/S Haigh Zinn and Associates in collaboration with A.C.E. Ltd. and M/S Binnie and Partners Ltd. prepared the second one during 1968-70. M/S Haigh Zinn and Associates proposed a Barrage at Goddimare while M/S Binne and Partners Ltd. located it at Doani. After emergence of Bangladesh in 1971 the Government gave serious thought for undertaking the project. Under the changed circumstances engineers of Bangladesh Water Development Board (BWDB) and Bangladesh University of Engineering and Technology (BUET) reviewed the previous reports, conducted fresh survey, investigation, planning and detailed engineering. The site of the Barrage was selected at Doani where the present Teesta Barrage of Bangladesh proudly stands today.

2. Outline of the Teesta River Basin

The Teesta is one of the important rivers next to the three major rivers of Bangladesh. It is recognized as the most unstable, wandering and young river of the country. The river originates in the glaciers of the Himalayas in Sikkim at about 6400 metre above mean sea level (MSL). It flows for about 172 km in mountainous region before emerging at Sevak Railway Bridge into the alluvial plains of North Bengal in India. It crosses another 97 km of Indian plains before it enters into

Bangladesh about 19 km north of Dalia. It flows for about 130 km in Bangladesh territory before it joins the Brahmaputra river at Chilmari. The catchment area of the Teesta river upper basin is about 10550 sq. km (including upper and middle basin) of which 7200 sq. km. falls in Sikkim-Darjeeling Himalayan region. The lower basin covers 3290 sq. km. in the flood plains of Jalpaiguri district (India) and Bangladesh. The catchments area in Bangladesh is about 2071 sq. km. The average discharge during June to September, observed at Dalia, is about 1,800 cumec, while that of winter and dry months is only 200 cumec. Flow is lowest in the month of February and seldom exceeds 160 cumec.

3. Boundary and Area

The Project is bounded by the Teesta on the north, the Atrai on the west, Santaher-Bogra Railway line on the South and Bogra-Kaunia Railway line on the east. Command Area of the Project is 750,000 ha and the irrigable area is 540,000 ha.

4. Objective

The main objective of the project is to increase agricultural production through supplementary irrigation and thereby create employment opportunities.

5. Phasing and costing

Although the implementation of the project started in 1960, the actual construction of the barrage was taken up in 1979 and that of canal system in 1984-85. To derive early benefits, the project has been phased out viz. Phase-I and Phase-II. The phase-I (restructured) has a command area of 154,250 ha with a net irrigable area of 111,406 ha. It is spread over 12 upazillas. It comprises construction of a Barrage, Flood Embankment, Flood Bye pass, Silt Trap, Main Canal, and part of canal system with improvement of existing drainage canal. GOB's own resources were

financing the project since inception. In 1985 and 1994 GOB entered into three loan agreements with Saudi Fund for Development (SFD), Islamic Development Bank (IDB) and Abu Dhabi Fund for Development (AFD) for partial financing of the project. After phasing out of the project, the Phase-I was completed in June 1998 and the cost incurred is Tk. 9695 million.

6. Physical Infrastructure

For achievement of the project objective i.e., to provide supplementary irrigation to a net area of 111,406 ha in phase-1 under gravity irrigation system through the irrigation network various types of physical infrastructure were implemented including the main Barrage, Canal Head Regulator, Silt Trap, Irrigation and Drainage Canals etc. A short description of some of these infrastructures is provided below:

6-1 Teesta Barrage

The Teesta Barrage is constructed over the Teesta River to raise the water level and thus, to feed the main canal taking off from its upstream side. The Barrage itself is situated at Doani, Lalmonirhat completed in August 1990. The Barrage is 615 m long fitted with 44 opening (vent) with radial gates. Width of each vent is 12.19 m. The design discharge capacity of the Barrage is



Fig. 1 Teesta Barrage

12,752 cumec. The Barrage is divided into 2 portions by divide wall, named Weir proper and Under-sluices. There are 7 under sluiced bay. Normally the crest level of the under-sluices is kept equal to the deepest bed level of the river during

*) Planning Division I
Bangladesh Water Development Board, Bangladesh

non-monsoon seasons. As the crest of the under-sluice pocket is at a low level, a deep channel develops towards this pocket, which helps in bringing low dry weather discharge towards this pocket, thereby, ensuring easy diversion of water into the canal through the canal head regulator. Rest of the bays is normal bay (weir proper). There is a silt excluder in the under sluiced portion of the barrage. Tunnels of silt excluder are used to attract coarser particles. In Teesta Barrage, gates do most of the ponding. Gates of barrage can be operated by remote controlled power driven system, locally controlled power driven system or manually. This Barrage is fully operational now. This Barrage is serving as a bridge for vehicular and pedestrian traffic also.

6-2 Canal Head Regulator (CHR)

A Canal Head Regulator (CHR) is provided at the head of the off-taking main canal, and serves the following functions:

- i) It regulates the supply of water entering the main canal
- ii) It controls the entry of silt in the main canal



Fig. 2 Canal Head Regulator

- iii) It prevents river floods from entering the main canal.

The CHR is 110 m. long fitted with 8 no. of vent (radial gates). Width of each vent is 12.19 m. Discharge capacity of the CHR is 283 cumec. The CHR is fully operational at present.

6-3 Silt Trap

A Silt Trap covering an area of 45 ha adjacent to the CHR was constructed for arresting silt before supplying irrigation water to the Main Canal. Due to presence of Silt Trap, the resultant rate of siltation in the irrigation canals is very low. Here mecha-

nism is very easy, just discharging water into a larger area, resulting lower velocity and helping siltation in these areas called Silt Trap.

6-4 Irrigation Canal

Direct irrigation scheme using a barrage requires a network of irrigation canals. The main canal systems of the TBP consist of four main canals i) Teesta main canal, ii) Dinajpur secondary major canal, iii) Rangpur secondary major canal and iv) Bogra secondary major canal. Length of the Teesta main canal, total secondary major canal, secondary canal and tertiary canal are 33.67 km, 74.85 km, 224.91 km and 356.53 km respectively.

6-5 Hydraulic Structures

Mainly Regulators, Siphons, Escapes, Aqueduct and check/drops are the hydraulic structures constructed through out the project area. Total no. of hydraulic structures constructed are 856 (including X-drainage structures). Operation systems of the project structures are user friendly.

7. Command Area Development (CAD)

The Teesta Barrage Project (Phase-I) was completed in June, 1998. The irrigation network constructed need to be evaluated in an integrated way to identify the bottlenecks of the system to bring the potential area under irrigation. As such a Command Area Development (CAD) Project for Phase-I was introduced in 1998-99 for five years. The project cost is Taka 968 million. The objective of the CAD project is to accelerate agricultural production up to full potential by irrigation coverage and integrated water management as well as socio-economic enhancement by introducing multiple development programs viz. fisheries, duck culture, grass cultivation, afforestation etc. The following government organizations were involved to attain the objectives: Bangladesh Water Development Board (BWDB)

Directorate of Agricultural extension (DAE)

Directorate of Fishery

Directorate of Live stock

Directorate of Forestry.



Fig. 3 Beneficiary Training



Fig. 4
Afforestation
along Canals



Fig. 5
Duck culture
by beneficiary

7-1 Irrigation Systems and Irrigation facilities

The project will provide irrigation supplies with flood protection and drainage facilities to a gross area of about 750,000 ha of which net benefited areas are 540,000 ha. The irrigation system in the Phase-I area includes 154.57 km main and branch canals, 211.70 km secondary canals, 387.65 km tertiary canals and more than 3000 nos. of control structures different sizes.

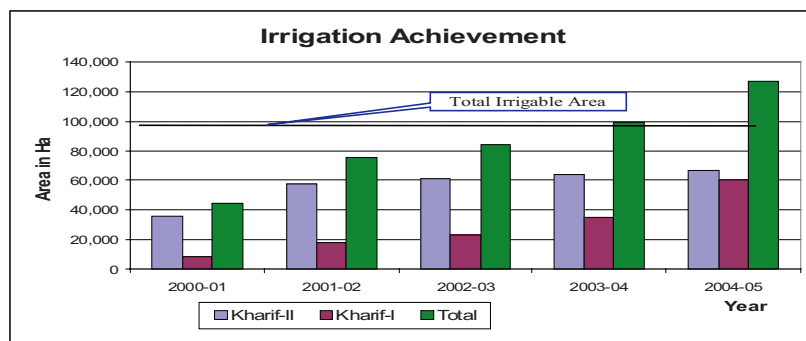
7-2 Irrigation Coverage

Irrigation coverage has remarkably been increased in the project area during the last years. It is observed that cropping pattern and cropping intensity have been changed remarkably in the irrigated area. Currently, HYV Aman and Boro have widely been practiced by the farmers and at least two crops are grown in a year. The irrigation achievement and irrigation coverage during last five years is shown in Fig.6. These show that the irrigation coverage increased with time.

7-3 Field Irrigation, Drainage and Water Management

To supply irrigation water to its command area from the available waters of the Teesta River in right time,

Fig.6
Irrigation
Achievement



water management is essential. For efficient water management in an economic way, people's participation in every step is necessary. People's participation is required for the maintenance of the tertiary canals and field channels as well as to collect the service charges as set by the rules. To achieve this goal the formation of Water Management Group (WMG), Water Management Association (WMA), and Water Management Federation (WMF) is going on. Service charge collection from the beneficiaries is already started. The target achieved so far for formation of the WMG, WMA, and WMF is shown in Table 1.

| Sl. No | Name of the Organization | Target | Achievement | Remarks |
|--------|------------------------------------|--------|-------------|------------------------------|
| 1 | Water Management Group (WMG) | 2000 | 1880 | |
| 2 | Water Management Association (WMA) | 52 | 60 | 25 nos. have been registered |
| 3 | Water Management Federation (WMF) | 1 | - | |

Table 1 Achievement of Water Management Organization

7-4 Drainage Facilities

TBP has been implemented to ensure Kharif-II rice in a flood free environment. Existing natural river systems serve the drainage function of the project. The river systems drain the runoff from both within and outside the project area.

8. Impacts of the Teesta Barrage Project

The actual performance due to intervention of the Teesta Barrage Project along with engineering, agriculture, fisheries, social, economic and environmental condition is provided below:

- The project is an example of self-reliance through domestic resource

mobilization although a part was financed by SFD, IDB and AFD. The main TBP Phase-I has been implemented with local expertise in the fields of planning, design and construction. Implementation of the project has helped adaptation of higher and modern technology.

- The Teesta Barrage Project (TBP), Phase-I made a revolution in agriculture through irrigation, flood protection and drainage improvement, by allowing intensive agricultural practices from shifting single to double or triple cropping, scientific cultivation of HYV and crop diversification instead of local varieties and

secured crop harvesting. Increased crop yield from about 218,288 M. Tons to about 710,036 M. Tons, higher income and employment generation and improved communication facility for crop marketing created a great impact on the socio-economic development of the people of project area. The shift in cropping pattern and cultural practices has been reflected in the form of increase in the cropping intensity to 218% (in 2005) in the project area with project against 180% (in 1994) in without project condition.

- Fish culture in the project area improved due to the availability of water which ultimately increased

fish production. Breeding and multiplication fish seeds increased in ponds, irrigation canal and drainage canal of the project area. Nearly 150 km main and secondary canals 600 km of major drainage channels and silt trap reservoir have created a watershed of about 50 sq. km which provide ample opportunities for fish and duck farmings.

- Groundwater recharge, reservoir, water flow through the irrigation canals networks, green crops and the trees along the dykes have positively impacted on local environment and weather. Due to SW irrigation, GW recharge has been increased significantly, creating more opportunity for conjunctive use of surface and groundwater

- Afforestation along the canal dyke, borrow pits, barrage site, roads along with various grasses of the area created a green belt in the region. Green crops have brought in green revolution.

- During execution of the TBP Phase-I 39.70 million man-days were created whereas during CAD components about 1.8 million man-days of skilled & unskilled labour were engaged as labor force, which produced a positive contribution to poverty alleviation of the project area.

- Socio-economic condition of the people of the project area improved due to project intervention assured a better living condition and literacy rate increased significantly. Education, health and sanitation, social infrastructure, employment generation, poverty reduction and social solidarity have improved to a great extent.

9. Concluding remarks on the Teesta Barrage Project

Teesta Barrage Project may be considered as one of the most successful water resources management project of Bangladesh Water Development Board.

Demand for food in Bangladesh is increasing. Implementation of the Phase-I of the TBP project has boost up the agricultural

production and thereby helping in satisfying the increasing food demand. So, implementation of Teesta Barrage Project Phase-II

has become a logical consequence of the achievement of TBP Phase-I.

From the secretariat

1. The Second General Meeting is coming up

The Second General Meeting is scheduled to be held from February 14 to 16 at Jatiluhur-Purwakarta, Indonesia and the preparatory work is now on the final stage.

The program was set, but some changes will be made, so, please check the latest information on NARBO website and contact us through e-mail if you have questions.

2. Secretariat meeting at JWA HQ

The JWA NARBO secretariat had the half-day meeting with Mr. Wouter and Mr. Dennis, who were on the way to Korea to attend the Third NARBO training course on November 10. At the meeting, they discussed how to organize the Second General Meeting, the First Thematic Workshop in Viet Nam and how to activate day-to-day NARBO activities etc.



Secretariat staff mumbling

Ten months has already pasted since I became one of the members in JWA secretariat. The secretariat is in the International Affairs Division and there are nine staff (one is working for Asian Development Bank Institute in Tokyo) are working now. Among them, two staff members are devoting to IT (website, newsletter etc.) and to translation and interpretation.

It seems that ten staff (including the Director) is quite enough to deal with NARBO activities. But they are working until late at night almost every day to deal with the preparation works of the Second General Meeting and international businesses in JWA and they look a little bit tired these days.

They look have another bane that they can't get enough information from members for the website and newsletter etc. NARBO is the network, so members' active involvement is quite important, I guess.

This winter, we have the record-high snowfall in northern part of Japan and the very cold days nationwide, but the secretariat is working very hard to promote NARBO activities. I'm looking forward to your active involvement and please well take care.

Program of the Second General Meeting

As of February 1

| | | |
|---------------|--|-------------------------------|
| DAY 0 | 13th February 2005 (Monday) | |
| | Arrival of participants, check-in and Registration | |
| DAY 1 | 14th February 2005 (Tuesday) | <i>Field Visit</i> |
| DAY 2 | 15th February 2005 (Wednesday) | <i>Workshop</i> |
| 08.45 – 10.15 | Session 1 Water Quality Management | KOWACO |
| 10.30 – 12.00 | Session 2 Flood Management | JWA |
| 13.15 – 14.45 | Session 3 Water Financing | Indonesian NARBO Secretariat |
| 15.00 – 16.30 | Session 4 Performance Benchmarking | ADB, IWMI |
| 19.30 – 21.00 | Side event: Indonesian NARBO Members Meeting | Indonesian NARBO Secretariat |
| DAY 3 | 16th February 2005 (Thursday) | <i>General Meeting</i> |
| 09.00 – 09.45 | Opening Session | Organizing Committee |
| 10.00 – 12.00 | Session “The report of NARBO activity 2004-2005” | Chaired by chairperson |
| 13.15 – 16.00 | Session “NARBO Charter and Work plan 2006 – 2007” | Chairperson |
| 16.15 – 16.45 | Selection “NARBO Constitutional Body” | JWA, ADB, ADBI |
| 16.45 – 17.00 | Closing Session | JWA, ADB, ADBI |
| DAY 4 | 17th February 2005 | |
| | Participant are back to home countries | |

The NARBO Newsletter

(Network of Asian River Basin Organizations)

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

Report of the recent activity

NARBO Chairperson made presentations at the 4th World Water Forum

Katsunori Takagi *

Dr. Basuki, NARBO Chairperson, made three presentations and attended the lunch seminar for news reporters at the 4th World Water Forum that was held at Banamex Center in Mexico from March 16 to 22 for 7 days which attracted almost 20 thousand participants from 141 countries and regions.

The program of the forum consisted of 5 frameworks, namely “Water for Growth and Development”, “Implementing IWRM”, “Water Supply and Sanitation”, “Water Management for Food and the Environment” and “Risk management”. Each day (from 17th to 21st) was allocated one of those frameworks. On the first day, March 16, the opening ceremony, Hassan II Great World Water Prize awarding ceremony and other

events were taken place. On the last day of the forum, the ministerial declaration was adopted which reiterated the importance of the water for the sustainable development to eradicate the poverty and the starvation.

Dr Basuki delivered his first presentation on March 18, the second one in the morning on March 20 and last one also in the afternoon on March 20. On top of the sessions, he attended the lunch seminar which was held on March 20 to answers the questions from the reporters. Each session title he made the presentation was “Public Participation and Solidarity in Basin Management”, “Launching Session for the CSD WAND –Follow up for the CSD

13 and PWA Initiatives-“ and “Effective Use of Irrigation Water through Participatory Irrigation Management (PIM)”. The sessions were convened by INBO (International Network of Basin Organizations) and others, JBIC (Japan Bank for International Cooperation) and others, and MLIT (the Ministry of Land, Infrastructure and Transport in Japan) and others respectively. Through his presentations and answers to reporters’ questions, he reiterated the importance of NARBO and the network in which water resources management organizations in different countries cooperate with each other to promote IWRM.

*) NARBO Secretariat staff, Japan Water Agency (JWA)



Dr. Basuki at presentation (March 20)



Dr. Basuki at lunch seminar (March 20)

Topics of this issue

Report of the recent activity

- NARBO Chairperson made presentations at the 4th World Water Forum
- Launching NARBO Forest with Next Generations at Jatiluhur, Indonesia!

Information from members

- Karnafuli River Basin Management

From the secretariat

- Introduction of the 2nd Thematic Workshop - Water allocation and Water rights -
- Higher priority activities

Launching NARBO Forest with Next Generations at Jatiluhur, Indonesia!

— Be Expansion of NARBO Forest from Jatiluhur to your places and heart! —



Be growing up with trees!

[Practitioners Way]

Like most tropical forests in Indonesia, NARBO Forest is expected to become the water capture and availability source not only for the neighboring environment but for the catchment area. Based on the functions of a forest, forest can be classified into three categories. Those are; Forest for conservation, Forest for protection and Forest for production. All these three functions would be discovered at NARBO Forest. Establishment of NARBO Forest was the part of the 2nd General Meeting and the ceremony was on 14 February 2006.



View from the NARBO forest site located near to the Jatiluhur Dam reservoir, Citarm River. This dam is the lifeline of Jakarta Metropolitan.

only by the government, also needs society participation. This activity is expected to earn mutual profit for each party, especially to Jasa Tirta II Public Corporation (PJTI) and existing society around it and as sample for future the Event of NARO in continuation of Water Resources.



Signing of "Agreement of NARBO Forest"



Inscription



Let's go !

As part of implementation of NARBO's goal, NARBO Pilot Forest was created in Jatiluhur, Indonesia in support of the on going GNKPA*. NARBO Forest would not only be executed by NARBO's members but also all components of stakeholders of water resources in the area. NARBO Pilot Forest is expected to become Spirit of RBO, Spirit of NARBO and Spirit of IWRM.

* "GNKPA" is The Target of National Partnership Movement for Safeguarding Water Resources in Indonesia. And is to return hydrology cycle balance at the basin so that reliability of water sources either its quality and quantity could be controlled, through partnership among actors in safeguarding water resources such as government, private sector and community.

[Partnership with Next Generation]

NARBO Forest located in Kembang Kuning Village and its area is about 20,000m². The area is generally flat and it is considered to be landslide-free.

In addition for conservation purpose, this pilot forest has also the aim that planted fruit trees would benefit to the communities around the area.

Through this cooperation, NARBO would give advocacy, increase the awareness, share information, good practices, lesson learned and technical advice the sustainability aspect of the watershed function.

Crop type trees for NARBO Forest are fruits trees (Rambutan, Avocado and Mango) and it is worthwhile also to protect the land from erosion and yet maintaining sustainability of water sources.

In the evening on 13 February 2006, the signing event was held in the venue of the 2nd General Meeting at Jatiluhur hotel and "Agreement of

*) NARBO Secretariat staff, Japan Water Agency (JWA)

NARBO Forest was signed between NARBO and Jasa Tirta II Public Corporation". Dr. Ir. Moch Basuki Hadimoeljono, Chairman of NARBO and Ir. Djendam Gurusinga, President Director of PJTII signed the agreement.

The participants of NARBO Second General meeting praised this activity and efforts made by PJT II.

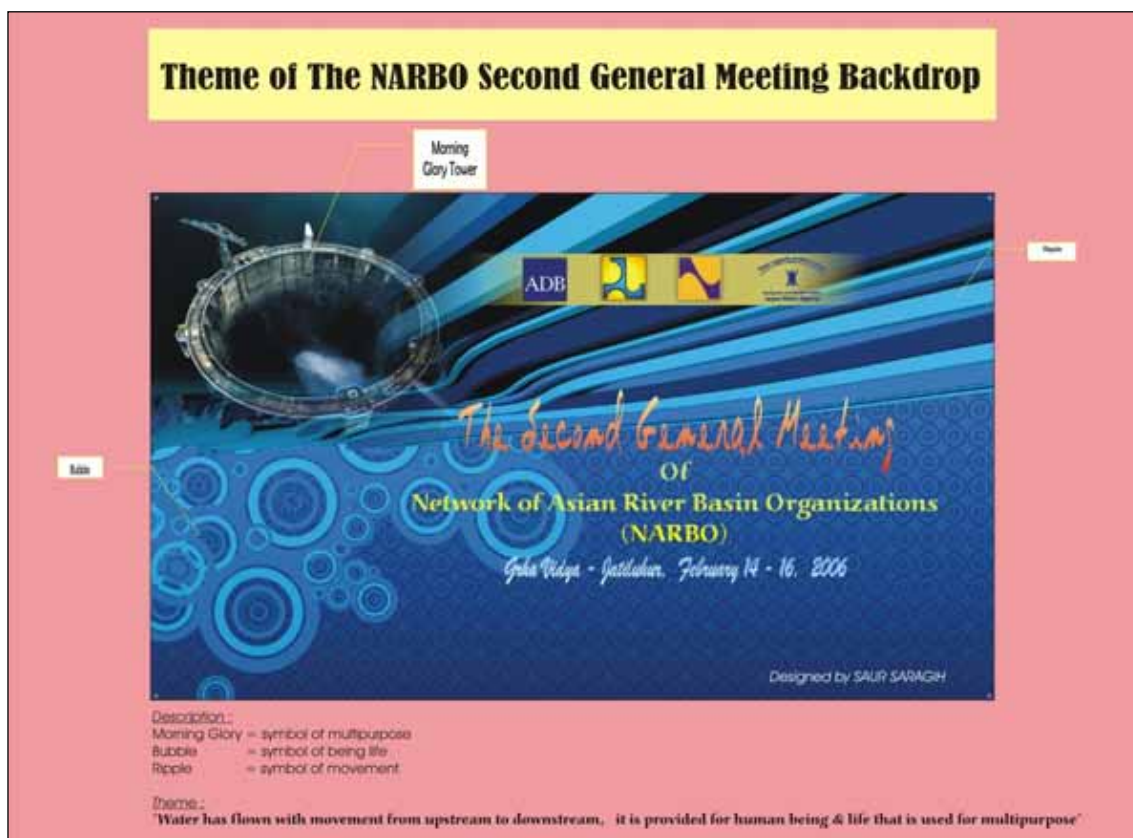
Especially, PJT II organized the

collaboration with local school students. It is believed that NARBO Forest was one of the best memories to students as well as participants of second general meeting. Participants from various countries might hope to visit again to Jatiluhur and they would pass a story down from generation to generation. The growth of students and planted trees in good health are expected.

In this time, Mr. Herman Idrus, Head of research and development bureau of PJT II and his colleagues formed core member of arrangement of NARBO Forest as well as the second general meeting. Their contribution was tremendous great and excellent. Thank to their efforts, Jatiluhur would be one of the best memorial place of participants.



Mr. Herman Idrus (Center), Head of Research and Development Bureau and colleagues of PJT II, Indonesian NARBO



The banner of the 2nd General Meeting designed by Mr.Saur, PJTII. The figure upper left corner is the morning glory type of the spillway at Jatiluhur Dam, which is the pride of PJTII

Information from members

Karnafuli River Basin Management

Emaduddin Ahmad, PEng. *

The Karnafuli is the principal river of Chittagong region. It originates in the Lushai Hills of Mizoram (India), flows through Rangamati and the port city of Chittagong and discharges into the Bay of Bengal. A number of streams flow upstream of Rangamati. The streams meet near Rangamati and their combined flow is known as Karnafuli. Karnafuly river basin faces upstream inundation flooding in the down stream, shortage of irrigation water, salinity intrusion, pollution at the source of water supply in the Chittagong city, siltation at Chittagong port. A suitable tool for optimization of Kaptai dam release can support a wiser decision among various options keeping the relevant parties informed to resolve conflict that arises from diversified interests.

The Kaptai Hydro Electric Power Plant is located at Kaptai around 50 km from the city of Chittagong. After the commissioning of the project in 1962, the hydro-power plant could feed the national grid with 80 MW of electricity from its 2 units. In later years, 3 more units were installed in two phases, which increased the power generation capacity of the plant to a total of 230 MW. It has been estimated that the capacity of the plant could be further increased to 330 MW by the installation of additional 2 units (6th & 7th units).

At present, the Karnafuli reservoir is operated on an ad-hoc basis. Decisions for operation of the reservoir and the power generation units are made by the Power Plant Authority based on experience and rule curves supported by rainfall and water level

data in the reservoir.

There are no tools to support the decision of the Power Plant authority for optimising reservoir operation based on real-time or predicted hydrological variables. In 2002, Bangladesh Power Development Board (BPDB) engaged Institute of Water Modelling (IWM) to develop a computer based Decision Support System (DSS) for the operation of the reservoir. IWM has successfully developed the DSS which integrates an inflow prediction model, reservoir operation model and Geographic Information System (GIS). The DSS has been installed at the Power Plant and is now being used to support decision making for operation of the reservoir in advance.

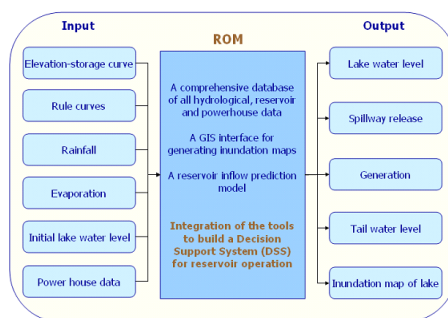
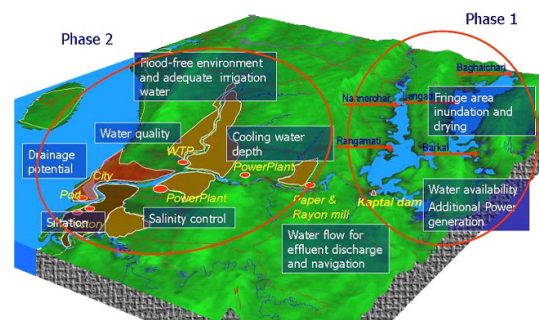


Figure: Karnafuli river basin model

Accordingly software based upon the historical database of Kaptai hydro power station operation, reservoir release, inflow forecast and inundation at various flow situations has been developed. The software so developed is known as decision support system (DSS) and enables the manager of Kaptai power station having knowledge of upstream inundation and the predicted flow for about three days to make release decision based on downstream flooding. The future development now being consid-

ered would attend to salinity intrusion or sedimentation on the port channel and fresh water availability for Chittagong. The present phase of development has been found to be useful in the flood forecasting of the Karnafuly basin supporting the Bangladesh Water Development Board. Once the manager has started discussing with the upstream people on the optimum level of the reservoir operation on the basis of a number of options, lot of tensions have been eased. Decision making in this process requires updated data of the basin rainfall, inundation extent and other water quality parameter. The process, being dynamic, would continuously provide improved decision using past experience. The system allows a new manager to get used to in a very short span of time.

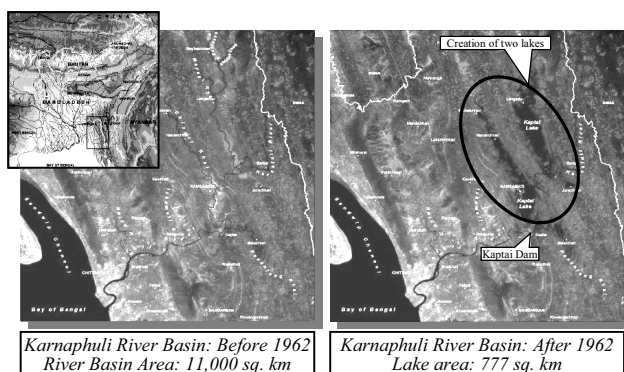


Karnafuli River Basin: Next Step

Data on the past inundation extent for each major storm has been generated. The reservoir capacity was surveyed. Primary data collection was extremely difficult due to inaccessibility and for want of adequate security. A set of scenario for future operation of reservoir were presented and the stakeholders were well participated to select one under win-win situation.

The present development is for upstream only. The downstream areas for flood management, salinity control, port siltation issues can be considered for a total basin management at a later date. This type of operation is first of its kind in Bangladesh; a unique example of basin level management of water resources for having a win-win situation.

*) Executive Director, Institute of Water Modelling, Dhaka, Bangladesh



From the secretariat

Introduction of the 2nd Thematic Workshop – Water allocation and Water rights –

“The second Thematic Workshop on Water Allocation and Water Rights” will be held on 5th -9th June 2006 in Manila, Philippines, following up with the 1st in Vietnam. The National Water Resources Board (NWRB) and the Laguna Lake Development Authority (LLDA) take the role of recipient organization in collaboration with NARBO secretariat.

The concepts of the thematic workshop is (1) emphasizing pragmatic and practical viewpoint, (2) intending deep and continuous discussions, (3) themes are focused, specific and important issues related to IWRM, and (4) Small scale and simple style. Also, we attach great importance to the self-reliant effort for problem solving by participating countries themselves.

“The Thematic Workshop on Water Allocation and Water Rights” is planned to be held a total of four times in two years, and the expected outcome of each workshop is as follows.

- 1st - To identify the issues in participating countries
- 2nd - To analyze the causes of the issues and suggest the approach to improvement
- 3rd - To review the 1st and 2nd workshop and suggest the approach to improvement
- 4th - To draft the report to make a suggestion

The participants are also basically stable through the 4 times. We call these stable participants as “the core members”.

In the second workshop, along with the aforementioned expected outcome, we will mainly discuss (1) the causes of the water-related issues in the participants' countries, and (2) the proposals of the approach to improve the water-related situations, which will be carried out on the basis of the session outcome of the first workshop. Through these discussions, I expect to approach the problem solving as much as possible.

Anyway, I'm looking forward to seeing the participants in Manila, and also I hope that we will make beneficial discussions and great achievement in the coming workshop.

(Michitaro Nakai)

Higher priority activities

“The Action Plan (2006-2007)” was approved at the 2nd General Meeting and 9 activities were classified as higher priority activities to strengthen the activities. Those higher priority activities are

- | | |
|-------------------------------------|--|
| 1. NARBO Website (JWA) | 2. NARBO newsletter (JWA) |
| 3. Online database (ADB, JWA) | 4. Members' website (Members) |
| 5. Members' Annual Report (Members) | 6. IWRM raining Program (JWA, ADB, ADBI, KOWACO) |
| 7. Workshops (JWA, ADB, ADBI) | 8. Performance Benchmarking (ADB, IWMI) |
| 9. Twinning Programs (Members) | |

For the details, please see “The Action Plan (2006-2007)” on the website.

* Inside the brackets are leading agencies

** Among others, members' positive involvement regarding information and material gathering for NARBO website and newsletter is indispensable.



Network of Asian River Basin Organizations

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The NARBO Newsletter

(Network of Asian River Basin Organizations)

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

Activities (Thematic Workshop)

PHILIPPINES hosted the 2nd Thematic Workshop

Evelyn Ayson *, Elenito Bagalihog *

The Network on Asian River Basin Organization (NARBO) conducted its 2nd Thematic Workshop on Water Allocation and Water Rights on June 5-9, 2006 in the Philippines. Twenty six (26) participants from seven (7) Asian countries such as Thailand, Indonesia, Vietnam, Lao PDR, Sri Lanka, Philippines and Japan participated in the said event which was held at the La Mesa Guest House, La Mesa Dam Eco-Park in Quezon City. The La Mesa Dam is an earth dam centrally located in Novaliches, Quezon City, Metro Manila. It was first erected in 1929 and then further raised in 1959 to a maximum water storage capacity of 505 million cubic meters (MCM). Its overflow level is an elevation of 80.15 meters. It is a vital link to the water requirements of 12 million residents of Metro Manila considering that 1.5 million liters of water pass through this reservoir everyday. The venue was purposely chosen as it is conducive to the theme of the workshop which is water allocation and water rights.

Japan Water Agency (JWA), Asian Development Bank (ADB) and Asian Development Bank Institute



Group photo in front of the La Mesa Guest House

(ADB) sponsored the said event and was hosted by the Philippines' National Water Resources Board (NWRB) and the Laguna Lake Development Authority (LLDA).

The 5-day Workshop covers presentations and discussions of the issues; effects of the issues; their importance; as well as the

causes of the issues which each participating countries had encountered on water allocation and water rights system. At the end of the workshop session, each country participants again presented proposals, recommendations and evaluations on the issues previously presented in the first part of the workshop.



Opening remarks by Mr. Alikpala



Session in the workshop

*) National Water Resources Board, Republic of Philippines

Topics of this issue

Activities (Thematic Workshop)

Information from members

From the secretariat

- PHILIPPINES hosted the 2nd Thematic Workshop
- About Thematic Workshop ~ New Attempt of NARBO
- Red -THAI BINH RIVER BASIN ORGANIZATION OF VIET NAM WITH NEW SUB-RBOs
- New Acting Secretary General – Mr. Yasutaka HAMADA –
- The 4th NARBO IWRM Training Program in Sri Lanka – Water for All –

Also, part of the workshop were field visits at Laguna Lake in the Province of Laguna which is at the southern part of Metro Manila and at the Angat Dam and Reservoir in Norzagaray, Bulacan which is at the northern part of Metro Manila.

Angat Reservoir in the Angat River has a catchment area of 568 sq meters and has a storage capacity of 850 MCM and regulates an aver-

age annual inflow of 1700 MCM. The mean annual rainfall in the area is about 4000 millimeter. The Reservoir has a multi-purpose functions : to provide irrigation to some 28,000 hectares of farmland; to supply domestic water requirement to some 12 million people living in Metro Manila; to generate hydro-electric power to feed the Luzon grid; and to reduce flooding to downstream towns and villages.



Angat Dam and Reservoir



Lecture on the role of Angat Dam

Angat River is the principal drainage way which originates from the Sierra Madre Mountain Range, flows down across the towns of Bulacan, then joins the Pampanga River at the town of Calumpit and finally discharges to the Manila Bay at Hagonoy, Bulacan. The basin has a total drainage area of 936 sq.km wherein the Angat Dam/Reservoir was constructed at about 60 km northeast of Metro Manila.

As a finale of the thematic workshop, a social party was given for the departing participants to mark the end of a successful workshop. Some participants gave song renditions while others just have conversation with fellow participants. The party lasted until 9:00 in the evening after which participants were brought back to Sulo Hotel where they were billeted. Next day each one went back to their respective countries.

About Thematic Workshop ~ New Attempt of NARBO

Michitaro Nakai *

1. Introduction

NARBO Secretariat has launched the thematic workshops from December 2005, which is a new attempt as well as one of the key activities of NARBO. The thematic workshop is aimed to provide more effective and beneficial activities for water resources management practitioners of NARBO member organizations. This article summarizes the thematic workshop to inform its outline and meanings of NARBO members broadly.

2. Objectives and Orientations

2.1 Objectives

The objectives of the thematic workshop are; (i) sharing information on

current status of participating countries, (ii) clarifying the problems in participating countries, and (iii) approaching the way for improvement in cooperation with participants. For that purposes, it is planned that participants are required preparing an action plan which summarizes their idea on improvement.

In addition, with regard to the thematic workshop, **we attach great importance to a self-reliant effort for problem solving made by participating countries themselves.** It is indispensable to consider problem solving with a self-reliant effort because NARBO basically adopts ownership principle. In addition, there is no common method of problem solving on water issues among each country because water issues usually reflect regional characteristics; therefore, it is appropriate that participants themselves, who must

know water issues of their own countries, consider the approach to improvement.

2.2 Orientations

The orientations of the thematic workshop are as follows;

- Pragmatic and practical viewpoints are emphasized. NARBO mainly consists of water related government agencies and river basin organizations, which are in charge of practical water resources management. Thus, it is desirable to hold the activities that can contribute to the practitioners of water-related organizations. Therefore, pragmatic and practical viewpoint is very important.
- Deep and continuous discussions are intended. Firstly, NARBO secretariat means to facilitate participants' deep discussions in the workshop, which can contribute to the participants' self-reliant consideration. Also, continuous



*) Asian Development Bank Institute

and consistent discussions should be held because water issues are often complex. For that purpose, workshops are held for total of three or four times against one issue, and main members should be stable.

- Focused, specific and important themes related to IWRM are taken up. In order to make discussions deeply, focused and specific themes are desirable, which also should be important ones in implementing IWRM.
- Small and simple style is preferable. The financial resources of NARBO secretariat are quite limited, but we intend to hold as many activities as possible. Due to that, the number of participants will be limited (two participants per one country), and we will not hold gaudy ceremonies or parties, which will contribute to saving costs. Also, limiting the number of participants will contribute to active discussion among participants.
- The host organization rotates among the participant's organizations. Participants' organization's taking on the host organization of the thematic workshop can have following merits; (i) Costs for the workshop can be saved, (ii) NARBO member can recognize the sense of ownership, and (iii) NARBO members can find their own water issues through participating in planning for the workshop.

by doubt about the general ways of trainings or workshops on water resources management. In other words, we recognize issues on the general trainings or workshops as follows.

- Academic organizations often play a leading role in organizing them; so scholarly aspects tend to be emphasized. As a result, their contents are often conceptual, which are not understandable from the viewpoint of practitioners.
- Scales of such trainings or workshops are often large; so, participants tend only to listen to lectures or speeches of resource speakers. As a result, it is difficult to keep two-way communications.
- Themes are too big and conceptual (i.e. IWRM implementation), so points of the argument often become unclear.
- Gaudy ceremonies or parties are often held, which causes considerable expenditure about such trainings or workshops.

Therefore, in some cases, we often cannot help doubt the usefulness of such trainings or workshops for considering the expensive organizing costs. From these perspectives, we give the above 5 orientations to



Field visit in 1st Thematic Workshop on Water Allocation & Water Rights

The above 5 orientations were led

the thematic workshops.

3. The Thematic Workshop on Water Allocation and Water Rights

Now, ongoing thematic workshop is "The Thematic Workshop on Water Allocation and Water Rights". We plan to hold the thematic workshops for 4 times in total during December 2005 to the beginning of 2007, and 2 workshops have finished already.

The theme, "Water Allocation and Water Rights", was selected on the basis of the research on the needs for NARBO activity, carried out in 2004. According to the research, NARBO secretariat recognized that there were quite a few member organizations which have interest in water allocation issues including water rights system. Therefore, we decided "Water Allocation and Water Rights" as the theme of the first series of the thematic workshop.

Government officials and practitioners on water resources management attended the thematic workshop on water allocation and water rights, from 6 countries (Vietnam, Philippines, Thailand, Indonesia, Lao PDR, and Sri Lanka). In first and second workshops, participants have shared the water-related situation each other through sessions and field trips, and discussed actively the ways for improvement to realize an appropriate water allocation. Workshop materials were posted on the NARBO website (<http://www.narbo.jp>).

The venue, date and expected outcome of each workshop are shown in the below table.

| | | | |
|--------|----------------------|-------------------------------|---|
| First | Hanoi (Vietnam) | 5-9 December, 2005 | To identify the issues in participating countries |
| First | Hanoi (Vietnam) | 5-9 December, 2005 | To identify the issues in participating countries |
| Second | Manila (Philippines) | 5-9 June, 2006 | To analyze the causes of the issues and suggest the approach to improvement |
| Third | Bangkok (Thailand) | 27 November- 1 December, 2006 | To review the 1st and 2nd workshop and suggest the approach to improvement |
| Forth | To be determined | January, 2007 | To draft the report to make a suggestion |

1st workshop in Vietnam



2nd workshop in Philippines



4. Next Steps

NARBO secretariat regards the thematic workshop as an effective and low-cost activity which can give direct and good impact on the practical business on water resources

management. Therefore, we mean to promote this thematic workshop as one of the main activities of NARBO. Then, we mean to launch a new activity, "The Thematic Workshop on Facility Management for

Water Resources Infrastructure" from the beginning of 2007. Your active participation would be appreciated.

Information from members

RED – THAI BINH RIVER BASIN ORGANIZATION OF VIET NAM WITH THE NEW SUB-RBOs

Truong Trong Luat *, Nguyen Thuy Hang *

The Red – Thai Binh River Basin of Viet Nam comprises of 26 provinces in the North of Viet Nam with about 25 million people (there are in total 64 provinces with about 83 million people in the whole country). (Please refer to the NARBO Newsletter Issue No.6 for general information).

The Red – Thai Binh River Basin Organization (the RRBO) is responsible to manage basin-level water resources development planning with following tasks (excluding those mentioned in the NARBO Newsletter Issue No.6):

1. To assess alternatives of water resources planning projects and water

resources basic investigation projects and then submit to the Ministry of Agriculture and Rural Development and state competent authorities for approval;

2. To assess and monitor implementation of integrated water resources planning projects, including irrigation, drainage, flood control alternatives and water resources conservation in the Red – Thai Binh River Basin;

3. To coordinate with related agencies of ministries, sectors, and localities in implementing water resources planning projects approved by the Ministry of Agriculture and Rural Development or the Government;

4. To coordinate with related agencies to establish management regulation of databases serving management, exploit, use and water resources conservancy in the Red – Thai Binh River Basin;

5. To propose capacity building and awareness programs in management, protection, exploitation, and use of water resources for organizations and individuals in the Red – Thai Binh River Basin;

6. To report to Minister of Agriculture and Rural Development and related ministries about water use, management, and protection in the Red – Thai Binh River Basin.



As illustrated in the map above, the Red – Thai Binh River Basin is formed hydrologically by five sub-basins which are characterized by different water-related issues. For instance, the Da, Thao and Lo-Gam rivers' basins are characterized by floods and flash floods, the Upper Thai Binh river basin (Cau river basin) by water

shortage, and the Red River Delta (half of it is the Day river basin) by water pollution and water logging. In order to well realize the assigned tasks and to deal with the specific problems in each sub-basin, two sub-RBOs for the two sub-basins with the most critical water-related-issues have been established under the

RRBO recently, they are Day sub-RBO and Cau sub-RBO. The two sub-RBOs are to help the RRBO's Chairman in implementing the above-mentioned tasks in the specific sub-basins. Main features of the two sub-RBOs are described in the following table.

*) Red - Thai Binh River Basin Organization Office

Main features of the Cau sub-RBO and Day sub-RBO

| Features | Day Sub – RBO | Cau Sub -RBO |
|----------------------------------|--|--|
| Location, area, population | a sub-basin of the Red River Delta, south of Hanoi capital city, 7665 km ² , 9 million persons | exactly the Upper Thai Binh River Basin, north of Hanoi capital city, 6030 km ² , 5.2 million persons |
| Date of establishment | December 1, 2005 | May 11, 2006 |
| Member provinces | 6 including Hoa Binh, Ha Tay, Ha Nam, Nam Dinh, Ninh Binh provinces and Hanoi city | 6 including Bac Kan, Thai Nguyen, Vinh Phuc, Bac Giang, Bac Ninh provinces and Hanoi city. (Hai Duong province also wants to join) |
| Office | Ha Nam Provincial Department of Agriculture and Rural Development | Thai Nguyen Provincial Department of Agriculture and Rural Development |
| Number of representative members | 51 | 61 |
| Functions | to help the RRBO's Chairman in implementing his tasks of river basin water resources planning management | to help the RRBO's Chairman in implementing his tasks of river basin water resources planning management |
| Main problems in the sub-basin | <ul style="list-style-type: none"> - river water pollution caused by industries, handicraft production, and agricultural activities, - ground and surface water contamination from agro-chemical residues, - frequent floods and inundation causing huge damages to socio-economic activities within the Red River flood diversion areas. | <ul style="list-style-type: none"> - serious water shortage in the dry season - water pollution resulting in water quality deterioration due to population growth, agricultural development, industrialization and urbanization - destruction of watersheds, erosion, occupation of riverbanks, and water logging and flooding in the rainy season. |
| IWRM at basin level | Supported by the 2nd Red River Basin Sector Project funded by the Asian Development Bank (Component 1: IWRM in the Cau river basin). Activities focus on dealing with water shortage and issues like irrigation performance, overall water balance, crop diversification, potential shift to aquaculture, options for water shortage and water allocation. | Supported by the 2nd Red River Basin Sector Project funded by the Asian Development Bank (Component 3: IWRM in the Nhue-Day river basin). Activities include a water quality sector review, water quality monitoring and water quality management, as well as an assessment of ambient water quality conditions in the Industrial Corridor between Hanoi and Hai Phong. |

Since their establishment, the two sub-RBOs have held their first meeting in May (for the Day sub-RBO) and in July (for the Cau sub-RBO) where they set out clear action programs to involve their member provinces, especially their representatives members to contribute to the course of IWRM in their respective basins and to deal

with their specific water-related issues. The role of the sub-RBOs is also stressed when every decision of the Ministry of Agriculture and Rural Development on water infrastructure investments in the two rivers' basins from now on will be based on the internal consensus of the sub-RBOs themselves. In-depth discussions and

a close collaboration are expected to be promoted among the members within their sub-RBOs and with the RRBO that help to further intensify activities by the sub-RBOs and by the RRBO for the ultimate purpose of sustainable development in the Red – Thai Binh River Basin.



Hoa Binh reservoir, one of the most important water infrastructures in the Red – Thai Binh river basin

From the secretariat

New Acting Secretary General – Mr. Yasutaka HAMADA –

Dr. Masafumi FUKUDA, the Secretary General of NARBO, left his post of the Executive Director at Japan Water Agency (JWA) on August 1, 2006 and he conveyed his resignation as the Secretary General to the secretariat. After his resignation, the secretariat nominated Mr. Yasutaka HAMADA, Executive Director at JWA, as the new Acting Secretary General and he was appointed the NARBO Acting Secretary General by the Chairperson according to the NARBO Charter "Article 4.4 Secretariat (3) (b)". Mr. HAMADA took his office as the Acting Secretary General on October 1 and the secretariat is happy to introduce him to all members on this occasion.

Message from Mr. HAMADA

My name is Yasutaka HAMADA, the successor of Dr. FUKUDA, the former Secretary General and I was appointed as the Acting Secretary General by the Chairperson, Dr. Basuki on October 1 according to the charter. First of all, I would like to express my thanks to Dr. FUKUDA, the former Secretary General, for his great contributions to NARBO activities during his 2 years and 7 months tenure.

I try to do my best to fulfill the duties for the further development of NARBO activities together with the secretariat under the guidance of the Chairperson and the Vice-Chairperson.

I worked in the water works administration in the Ministry of Health, Labor and Welfare (the former Ministry of Health and Welfare) to improve the water resources management for many years. I'm really happy to establish and promote IWRM in the river basins in Asia with my knowledge and experiences.

For NARBO activities, each member's active involvement especially in information exchange and sharing based on the ownership is indispensable. All of us have to remember this again and join forces with each other to promote NARBO activities much further.



The 4th NARBO IWRM Training Program in Sri Lanka – Water for All –

"The 4th IWRM Training Course in Sri Lanka" will be held on 6th – 10th November, 2006 in Sri Lanka. The Mahaweli Authority of Sri Lanka (MASL) takes a role of recipient organization in this training. MASL has a large stock of knowledge and experience on pragmatic water resources management through the implementation of the Mahaweli Ganga Development Program, which is the largest integrated rural development multipurpose program ever undertaken in Sri Lanka.

In this training course, the experiences of MASL and the lessons learnt from disaster in Sri Lanka will be introduced. Also the participants from other countries will report their countries' situations concerning this theme and have the discussion in the practical view among the participants. To enrich the training course, your active participation and preparation for the training are indispensable.

The 2nd announcement & the detailed program is available on the web-site.

Liaison

Mr. Sudharma Elakanda (Recipient Organization) e-mail: narbo@mahaweli.gov.lk

Mr. Masahiro Sugiura (NARBO Secretariat) e-mail: narbo@water.jp

Note: 1. The due date of the application is over now.

2. The registration fee (US\$ 200) is needed to participate in the training.



Network of Asian River Basin Organizations

Secretariat: International Affairs Division Japan Water Agency (JWA)
Land Axis Tower, 11-2 Shintoshin, Chuo-ku, Saitama City, 330-6008, Japan TEL: +81-48-600-6553 / FAX: +81-48-600-6550 E-mail: narbo@water.jp

Appendix 6

Program of the 2nd thematic workshop

Agenda of the 2nd thematic workshop on water allocation and water rights (2)

| Schedule | Tuesday 6th Jun (Day1) | | | | Schedule | Wednesday 7th Jun (Day2) | | | |
|------------------------|---|--|---|--|-------------|---|--|-------------------|-------------|
| | Session Title | Agenda/Activity | Presenter/Speaker | Facilitator | | Session Title | Agenda/Activity | Presenter/Speaker | Facilitator |
| 8:30–9:00 (30min) | Registration | | | | | Field Visit (1) – Ayala Land Filtration Plant, Putatan, Muntinlupa, National Power Corporation, Kalayaan, Laguna | 7:00 Departure (Sulo Hotel) | | |
| 9:00–9:20 (20min) | Opening Session | Opening Remarks | Recipient Organization & NARBO secretariat | Secretariat | 10:00 | | | | |
| 9:20–9:40 (20min) | | Introduction of the 2nd thematic workshop | Michitaro Nakai (ADB) | | | | | | |
| 9:40–10:20 (40min) | | Introduction of recipient organizations | NWRB & LLDA (20min respectively) | | | | | | |
| 10:20–10:30 | Break | | | | 11:00–12:00 | | Arrival at NPC, kalayaan Coffee Break Plant Tour | | |
| 10:30–11:10 (40min) | Special Lecture (including Q&A) | Japanese experience on water resources policy (Tentative) | Mr. Kouji Nukina, Deputy Director,Water Resources Planning Division, Water Resources Department, MLIT | Secretariat | | | Presentation and discussion | | |
| 11:10–12:00 (50min) | Session 1: Report on the situation of the dissemination and discussion in participants' countries | Short report on the discussion in participants' countries | Each participants (10minitues for each participant) | 3 persons 1 from Secretariat 1 from Core Members 1 from Philippines | | | | | |
| 12:00–13:00 | Lunch at the workshop venue | | | | 12:00–13:30 | | Lunch | | |
| 13:00–14:30 | Session2: Presentation and discussion (Grasp of issues and analysis of causes) | | | 3 persons 1 from Secretariat 1 from Core Members 1 from Philippines | 13:30–15:00 | | Departure for Ayala Land Filtration Plant, Mutinlupa | | |
| 14:30–14:40 | | Break | | | 15:00–17:00 | | | | |
| 14:40–16:10 | | | | 3 persons 1 from Secretariat 1 from Core Members 1 from Philippines | | Arrival at 15:00 Briefing/Discussion and Plant Tour | | | |
| | | | | | | | | | |
| 16:10–16:20 | | Break | | | | 17:00–19:00 | Arrival at Sulo Hotel at around 19:00 | | |
| 16:20–17:00 (40min) | Presentation from JWA | Japanese experience on approaching water allocating issues | Michitaro Nakai (ADB) | | | | | | |
| 17:00–17:30 | Message from Secretariat (Information on field trips etc..) | | Secretariat | | | | | | |

Field Visit (1)
– Ayala Land Filtration Plant, Putatan, Mutinlupa, National Power Corporation, Kalayaan, Laguna

Lunch

Agenda of the 2nd thematic workshop on water allocation and water rights (2)

| Schedule | 8th Jun (Day3) | | | | Schedule | 9th Jun (Day4) | | | |
|-------------|--|--|-------------------|-------------|-------------|---|-------------------------------|-----------------------|--|
| | Session Title | Agenda/Activity | Presenter/Speaker | Facilitator | | Session Title | Agenda/Activity | Presenter/Speaker | Facilitator |
| | Field Trip (2) – Angat Dam and Reservoir, Bulacan | 8:00 Departure | | | 9:00–9:50 | Presentation from JWA | Methodology for this workshop | Michitaro Nakai (ADB) | |
| | | | | | 9:50–10:00 | Break | | | |
| 10:00–12:00 | | Arrive at Angat Dam Coffee Break Tour Angat Dam and Facilities | | | | Session 3: Presentation and discussion – First half (Proposals, Processes and Evaluations) | | | 3 persons 1 from Secretariat 1 from Core Members 1 from Philippines |
| | | | | | | | | | |
| 12:00–13:00 | | Lunch | | | 12:00–13:00 | Lunch at the workshop venue | | | |
| 13:00–14:00 | | Presentation on Angat Dam and Reservoir | | | 13:00–16:00 | | | | 3 persons 1 from Secretariat 1 from Core Members 1 from Philippines |
| 14:00–15:00 | | Open Forum | | | | Session 3: Presentation and discussion – Latter half (Proposals, Processes and Evaluations) | | | |
| 15:00–15:30 | | Coffee Break & Others | | | | | | | |
| 15:30–17:30 | | Departure | | | | | | | |
| | | | | | 16:00–16:10 | Break | | | |
| | | | | | 16:10–17:00 | Session3: Presentation and discussion – Latter half (Proposals, Processes and Evaluations) | | | 3 persons 1 from Secretariat 1 from Core Members 1 from Philippines |
| | | Arrival at Sulo Hotel at around 17:30 | | | 17:00–17:30 | Closing Session | Toward the next workshop | Michitaro Nakai (ADB) | TBD |
| | | | | | | | Closing Remarks | TBD | TBD |
| | | | | | | Farewell Party | | | |

Appendix 7

Program of the 3rd thematic workshop

Agenda of the 3rd thematic workshop on water allocation and water rights

| Schedule | Tuesday 28th Nov (Day1) | | | | Schedule | Wednesday 29th Nov (Day2) | | | |
|------------------------|---|---|---|---|-------------|---|--|-------------------|-------------|
| | Session Title | Agenda/Activity | Presenter/Speaker | Facilitator | | Session Title | Agenda/Activity | Presenter/Speaker | Facilitator |
| 8:30-9:00 (30min) | Registration | | | | 8:00 | | | | |
| 9:00-9:10 | Opening Session | Opening Remarks | Recipient Organization | NARBO Secretariat | | | Departure 8:00 (Century Park Hotel) for Prachin Buri Province | | |
| 9:10-9:20 | | Introduction | Michitaro Nakai (ADBI) | | | | | | |
| 9:20-10:00 (40min) | | Introduction of the recipient organization | From DWR | | | | | | |
| 10:00-10:50 (50min) | Special lecture | Groundwater management | Masayuki Sato, Deputy Director, Department of Water Resources, MLIT | NARBO Secretariat | 10:00-10:45 | | Arrival in Prachin Buri Province Water Evaluation and Planning System (WEAP Model) and Water Allocation n Bang Pakong River Basin by Water Resources Regional Office 6 (about 45 minutes) | | |
| | Break | | | | 10:45-11:00 | Break | | | |
| 11:10-12:10 (60min) | Session 1: Report on the situation of dissemination and discussion in participants' countries | Short report on information dissemination and discussion in participants' countries | Each participant (10minutues for each participant) | NARBO Secretariat | 11:00-12:00 | | Meeting with Bang Pakong River Basin Sub-Committee at Prachinburi City Hall | | |
| 12:00-13:00 | Lunch | | | | 12:00-13:00 | Lunch | | | |
| 13:00-14:30 | Session 2: Review of the former workshops (1) – First Half | Presentation from Thailand | Each participant (30minutues for each country) | 3 persons 1 from Secretariat 1 from Core Members 1 from Thailand | 13:00-13:45 | Field Visit | Depart for the Khlong Tha Dan Dam Project in Nayok Province | | |
| | | Q&A | | | | | | | |
| | | Presentation from Vietnam | | | | | | | |
| | | Q&A | | | 13:45-14:30 | | | | |
| | | Presentation from Philippines | | | | | | | |
| | | Q&A | | | | | Arrival in Nayok Province Briefing the Khlong Tha Dan Dam Project by Royal Irrigation Department (About 45 minutes) | | |
| 14:30-14:40 | Break | | | | 14:30-14:45 | Break | | | |
| 14:40-16:10 | Session 2: Review of the former workshops (1) – Latter Half | Presentation from Indonesia | Each participant (30minutes for each participant) | 3 persons 1 from Secretariat 1 from Core Members 1 from Thailand | 14:45-16:30 | Field visit the Khlong Tha Dan Dam Project | | | |
| | | Q&A | | | | | | | |
| | | Presentation from Sri Lanka | | | | | | | |
| | | Q&A | | | | | | | |
| | | Presentation from Lao PDR | | | | | | | |
| | | Q&A | | | | | | | |
| 16:10-16:20 | Break | | | | | Departure for Century Park Hotel (Arrival at about 18:30) | | | |
| 16:20-17:00 (40min) | Presentation from Japan | Japanese River Law | Michitaro Nakai (ADBI) | NARBO Secretariat | 16:30-18:30 | | | | |
| 17:10-17:30 | Message from Secretariat (Information on field trips etc.,) | | Thailand organizational committee | | | | | | |

Agenda of the 3rd thematic workshop on water allocation and water rights

| Schedule | Thursday 30th Nov (Day3) | | | | Schedule | Friday 1st Dec (Day4) | | | |
|-------------|---|---|--|---|---|---|---|-----------------------|-------------------|
| | Session Title | Agenda/Activity | Presenter/Speaker | Facilitator | | Session Title | Agenda/Activity | Presenter/Speaker | Facilitator |
| 9:00–12:00 | Session 3: Review of the former workshops (2) – First Half | Presentation from Thailand (9:00–9:30) | Each participant (30minutes for presentation, 30minute for discussion) | 3 persons 1 from Secretariat 1 from Core Members 1 from Thailand | 9:00–9:50 | Presentation from Japan | Review of the session 2 & 3 | Michitaro Nakai (ADB) | NARBO Secretariat |
| | | Discussion for Thailand (9:30–10:00) | | | Break | | | | |
| | | Presentation from Vietnam (10:00–10:30) | | | Session 4: Internal discussion & revision of the discussion materials | Internal discussion toward the revision of the discussion materials | <div></div> | NARBO Secretariat | |
| | | Discussion for Vietnam (10:30–11:00) | | | | | | | |
| | | Presentation from Philippines (11:00–11:30) | | | | | | | |
| | | Discussion for Philippines (11:30–12:00) | | | | | | | |
| 12:00–13:00 | Lunch | | | | 12:00–13:00 | Lunch at the workshop venue | | | |
| 13:00–16:00 | Session 3: Review of the former workshops (2) – Latter Half | Presentation from Indonesia (13:00–13:30) | Each participant (30minutes for presentation, 30minute for discussion) | 3 persons 1 from Secretariat 1 from Core Members 1 from Thailand | 13:00–15:00 | Session 5: Presentation on the revision of the discussion materials | Report on the outcome of the internal discussion in the Session 4 | Each participant | NARBO Secretariat |
| | | Discussion for Indonesia (13:30–14:00) | | | Break | | | | |
| | | Presentation from Sri Lanka (14:00–14:30) | | | Closing Session | Toward the next workshop | Michitaro Nakai (ADB) | NARBO Secretariat | |
| | | Discussion for Sri Lanka (14:30–15:00) | | | | Closing remarks and others | TBD | TBD | |
| | | Presentation from Lao PDR (15:00–15:30) | | | | | | | |
| | | Discussion for Lao PDR (15:30–16:00) | | | | | | | |
| | | | | | | | | | |
| | | | | | | Farewell Party | | | |

Appendix 8

Program of the 4th thematic workshop

Agenda of the 4th thematic workshop on water allocation and water rights

| Schedule | Tuesday 23rd Jan (Day1) | | | | Schedule | Wednesday 24th Jan (Day2) | | | |
|-------------|---|--|--|-------------------|-----------------------------|---|--------------------------------------|---|-------------------|
| | Session Title | Agenda/Activity | Presenter/Speaker | Facilitator | | Session Title | Agenda/Activity | Presenter/Speaker | Facilitator |
| 9:00–9:30 | Registration | | | | | | | | |
| 9:30–10:00 | Opening Session | Introduction and explanation of field trip venues | Michitaro Nakai | NARBO Secretariat | 9:30–10:30 | Session 2: Presentation on action program | Presentation from Sri Lanka | Each participants (60min per 1 country including Q&A) | NARBO Secretariat |
| 10:00–10:15 | | Opening Remarks | Toshiki Aoyama, President, JWA | | Q&A, discussion | | | | |
| 10:15–10:45 | | Introduction of Japan Water Agency | Katsunori Takagi | | Presentation from Indonesia | | | | |
| 10:45–11:00 | Break | | | | 10:30–11:30 | | Q&A, discussion | | |
| 11:00–12:00 | Session 1: Report on the situation of dissemination and discussion in participants' countries | Short report on information dissemination and discussion in participants' countries | Each participant (10minitues for each participant) | NARBO Secretariat | | Lunch | | | |
| 12:00–13:00 | Lunch | | | | 11:30–12:30 | | | | |
| 13:00–14:30 | Move to Tokyo | Departure 13:00 for the Ministry of Land, Infrastructure and Transport, Tokyo | | NARBO Secretariat | 12:30–14:30 | Move to Tone Canal Control Center | (1) Study Tour of Tone Canal Project | | NARBO Secretariat |
| | | | | | | | | | |
| 14:30–16:30 | Special session in MLIT (Lecture and Others) | Speech from MLIT | Director General, Water Resources Department, MLIT | NARBO Secretariat | 14:30–15:30 | Tone Canal Control Center | Presentation on the Project | | NARBO Secretariat |
| | | Special Lecture: Case Study of improving water issue, taking the experience on Aichi Canal as an example | Prof, Tsuneaki Yoshida, University of Tokyo | | 15:30–16:00 | | Visiting Operation Room & Fish Way | | |
| | | | | | 16:00–16:30 | | | | |
| | | | | | | | | | |
| 16:30 | Going back to Saitama | | | | 16:30–17:30 | Going back to Saitama | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | 18:30–20:00 | Dinner hosted by JWA at Kineya | | | |

Agenda of the 4th thematic workshop on water allocation and water rights

| Schedule | Thursday 25th Jan (Day3) | | | | Schedule | Friday 26th Jan (Day4) | | | |
|-------------|---|--|-------------------|-------------------|-----------------------------------|---|--|---|----------------------------------|
| | Session Title | Agenda/Activity | Presenter/Speaker | Facilitator | | Session Title | Agenda/Activity | Presenter/Speaker | Facilitator |
| 7:30-10:00 | Move to Tonegawa Lower Reach Comprehensive Operation and Maintenance Office | (2) Study Tour of Lake Kasumigaura Development Project | | NARBO Secretariat | | | | | |
| 10:00-11:00 | Tonegawa Lower Reach Comprehensive Operation and Maintenance Office | Presentation on the Project | | NARBO Secretariat | 9:30-10:30 | Session 2: Presentation on action program | Presentation from Vietnam | Each participants (60min per 1 country including Q&A) | NARBO Secretariat |
| | | | | | Q&A, discussion | | | | |
| | | | | 10:30-11:30 | Presentation from Philippines | | | | |
| | | | | | Q&A, discussion | | | | |
| 11:00-12:00 | Boating on Lake Kasumigaura | | | NARBO Secretariat | | | | | |
| | | | | | 11:30-12:30 | | | | |
| 12:00-13:00 | Lunch | | | | | Lunch | | | |
| | | | | | 12:30-13:30 | Session 2: Presentation on action program | Presentation from Lao PDR | Each participants (60min per 1 country including Q&A) | NARBO Secretariat |
| 13:00-15:00 | Move to Inbanuma Land Improvement District(LID) Office | (3) Study Tour of Chiba Canal Project | | NARBO Secretariat | | | Q&A, discussion | | |
| | | | | | 13:30-14:30 | | Presentation from Thailand | | |
| | | | | | | | Q&A, discussion | | |
| 15:00-16:00 | Inbanuma Land Improvement District Office | Presentation on JWA & LID | | NARBO Secretariat | | | | | |
| | | | | | 14:30-14:45 | Break | | | |
| 16:00-17:50 | Visiting Site | - Super Paddy Field - Usui 2nd Supply & Drainage Pumping Station - Ohwada Drainage Pumping Station | | NARBO Secretariat | | Session 3: Session for revision of drafted action program | Free discussion on revision of drafted action program (1hour) | | |
| | | | | | | | | | |
| | | | | | | | Oral presentation on the outcome of the internal discussion (30 minutes) | | |
| | | | | | | | | 16:15-16:45 | Summary of the thematic workshop |
| 17:50-19:30 | Chiba canal Comprehensive Operation & Maitenance Office | Welcome Reception by Chiba Canal Office | | NARBO Secretariat | 16:45-17:30 | Closing Session | Closing remarks, Certification distribution | Yasutaka Hamada, Secretary General of NARBO | NARBO Secretariat |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | 18:00-19:30 | | | | |
| | | | | | Farewell Party at Nihonkai shouya | | | | |
| 19:30-21:30 | Going back to Saitama | | | | | | | | |

Appendix 9

Program of the peer review under benchmarking initiative



NARBO PEER REVIEWER ORIENTATION AND CERTIFICATION & JASA TIRTA II PUBLIC CORPORATION PEER REVIEW

October 30 – November 2, 2006
Jatiluhur, Indonesia

October 29, DAY 0

| | |
|-------------|---|
| 08:00-17:00 | Registration of Participants |
| 19:00 | Welcome Dinner at Venue – hosted by PJT2, IWMI, ADB |

October 30, DAY 1: Peer Review Orientation

| | | | |
|---------------|----|--|---|
| 08:00 – 08:10 | 10 | Welcome Remarks | D. Gurusinga (tbc) PJT2 |
| 08:10 – 08:20 | 10 | Keynote Address | Dr. Moch. Basuki Hadi Moeliono, (tbc) NARBO Chair |
| 08:20 – 08:35 | 15 | Setting the Context | W. Lincklaen Arriens ADB |
| 08:35 – 08:45 | 10 | Self- Introduction | Participants |
| 08:45 – 08:55 | 10 | Introduction to the Program and Objectives of the (i) Peer Review Orientation; and (ii) PJT2 Peer Review | A. Inocencio IWMI |
| 08:55 – 09:15 | 20 | Performance Benchmarking and Peer Review Tool | I. Makin ADB |
| 09:15 – 09:35 | 20 | Web-Interface Orientation | I. Makin (ADB) / A. Inocencio (IWMI) |
| 09:35 – 10:00 | 25 | Discussion | Participants |
| 10:00 – 10:20 | 20 | Break | |
| 10:20 – 10:35 | 15 | Video Presentation: Peer Review of NWSABs | W. Lincklaen Arriens ADB |
| 10:35 – 10:45 | 10 | RBO Peer Review Process | J. Kiribandage IWMI |
| 10:45 – 11:05 | 20 | What are expected from RBO Peer Reviewers | A. Inocencio IWMI |
| 11:05 – 11:35 | 30 | Overview of PJT2 and Presentation of the PJT2 Self-Assessment Results | W. Hutagalung PJT2 |
| 11:35 – 12:00 | 25 | Discussion | Participants |
| 12:00 – 13:00 | 60 | Lunch | |

| | | | |
|---------------|-----|--|---|
| 13:00 – 13:30 | 30 | Analyzing the PJT2 Self-Assessment Process and Results | A. Inocencio IWMI |
| 13:30 – 15:30 | 120 | Exercise 1: Using the NARBO Performance Benchmarking Tool | Participants with facilitators: H. Manthrilake A. Inocencio J. Kiribandage P. McCornick I. Makin W. Lincklaen Arriens |
| 15:30 – 17:00 | 90 | Plenary Presentations and Discussion of Exercise I Results | P. McCornick, IWMI |

October 31, DAY 2: Peer Review Orientation

| | | | |
|---------------|-----|--|---|
| 08:00 – 08:10 | 10 | Recap of Day 1's Activities | A. Inocencio IWMI |
| 08:10 – 08:20 | 10 | Defining Peer Groups | J. Kiribandage IWMI |
| 08:20 – 10:20 | 120 | Exercise 2: How to Review Self-Assessment Reports of RBOs | Participants with facilitators: H. Manthrilake A. Inocencio J. Kiribandage |
| 10:20 – 12:00 | 100 | Plenary Presentations and Discussion of Exercise II Results | P. McCornick IWMI |
| 12:00 – 13:00 | 60 | Lunch | |
| 13:00 – 13:15 | 15 | Expected outputs from the Peer Review Team | J. Kiribandage IWMI |
| 13:15 – 14:45 | 90 | Interviews with the PJT2 staff (without the management group) | PJT2 Peer Review Team All other Participants will be observers |
| 14:45 – 16:15 | 90 | Interviews with the PJT2 top management/selected heads of divisions/sections | PJT2 Peer Review Team All other Participants will be observers |
| 16:15 – 17:00 | 25 | Review of PJT2 support documents | PJT2 Peer Review Team All other Participants will be observers |

November 1, DAY 3: The PJT2 Peer Review

| | | | |
|---------------|----|--------------------------------------|---|
| 08:00 – 09:30 | 90 | Travel to Jakarta | All Participants |
| 09:30 – 11:00 | 90 | Consultation with BAPPENAS | PJT2 Peer Review Team All other Participants will be observers |
| 11:00 – 12:00 | 60 | Travel to Bandung | All Participants |
| 12:00 – 13:00 | 60 | Lunch | |
| 13:00 – 14:30 | 90 | Consultation with 2 NGOs/2 WUAs | PJT2 Peer Review Team All other Participants will be observers |
| 14:30 – | 90 | Consultation with other stakeholders | PJT2 Peer Review Team |

| | | | |
|---------------|----|--|--|
| 16:00 | | (e.g. West Java Provincial government) | All other Participants will be observers |
| 16:00 – 17:00 | 60 | Travel to Jatiluhur | All Participants |

November 2, DAY 4: The PJT2 Peer Review

| | | | |
|--------------|-----|--|--|
| 08:00 – 8:10 | 10 | Recap of yesterday's consultations | PJT2 Peer Review Team Leader |
| 08:10 – 9:10 | 60 | Peer Review Team Dialogue with the PJT2 Self-Assessment Team | PJT2 Peer Review Team PJT2 Self-Assessment Team |
| 09:10 – 1:10 | 120 | Peer Review Team discussion of key observations/ findings and writing of synthesis following the 5 critical performance areas Meeting & preparation for presentation of results | PJT2 Peer Review Team |
| 11:10 – 2:00 | 50 | Peer Review Team's Presentation of its Review Results | PJT2 Peer Review Team |
| 12:00 – 3:00 | 60 | Lunch | |
| 13:00 – 3:45 | 45 | Presentation of Observations by Non-PJT2 Reviewer Groups | Non-PJT2 Reviewers |
| 13:45 – 4:05 | 20 | Initial Response of PJT2 | D. Gurusinga PJT2 |
| 14:05 – 4:35 | 30 | Key Lessons from the pilot Self-Assessment and Peer Review experiences for the succeeding assessments and reviews | H. Manthrilake / A. Inocencio (IWMI) |
| 14:35 – 5:05 | 30 | Awarding of Accredited Peer Reviewers' Certificate | Dr. Basuki I. Makin P. McCornick |
| 15:05 – 5:15 | 10 | Closing remarks / What next | W. Lincklaen Arriens ADB |

November 3, DAY 5

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| Departure of Participants |
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Appendix 10

Program of the 4th training course

NARBO 4th Training Programme
"Water for all- Lessons Learnt and Meeting Future Challenge"

6th - 10th November 2006, Sri Lanka

| Date | 8.30 - 9.50 | | 10:15-10:30 | 10:30-12:00 | | 12:00-13:00 | 13:0-15:00 | | 15:00-15:15 | 15:15-16:45 | | 16:45-17:00 | 17:00-18:00 | |
|--|--|--|-------------|--|--|-------------|--|--|-------------|---|--|-------------|--|--|
| Monday, 6th November 2006 (Day 1) | 8.30 a.m Registration of Participant | | Tea Break | Hydraulic Civilization of Sri Lanka- Past-Present - Future | | Lunch | Country Paper presentations each Country will be given 15 minutes presentation & 5 minutes for the Q & A | | Tea Break | Water Management Practice on Sri Lanka (Resource persons to be confirmed) | | Ice Break | Group Discussion among the participant to familiarize with the environment | |
| | 9.00 a.m. Lighting Traditional Oil Lamp | | | Dr. M.U.A.Tennakoon (Past Vice Chairperson of NARBO) | | | | | | | | | | |
| | 9.10 a.m. Welcome Speech | | | | | | | | | | | | | |
| | 9.30 a.m. Introduction of Participant | | | | | | | | | | | | | |
| | 9.50 a.m. Objective & Briefing of the Programme | | | | | | | | | | | | | |
| Tuesday, 7th November 2006 (Day 2) | Field Visits - Visits Mahaweli Dam Sites - Victoria, Randenigala & Rantembe Dam (about 200 k.m. has to be traveled from Colombo) - (Night at Randenigala Wild Life Department Hostels) | | | | | | | | | | | | | |
| Resource persons | Eng. S.R.K.Aruppola, EIC (Victoria) & Eng. Nimal Wickramarathna, Director (HAO&M) | | | | | | | | | | | | | |
| Wednesday, 8th November 2006 (Day 3) | Continue Field Visit - Dehiattakandiya, Maduruoya, Polonnaruwa & Back | | | | | | | | | | | | | |
| Resource persons | Meeting Water Uses gaining experience on IWRM Applications Tertiary Level / Visit Ancient Sluice Constructed in 6th Century at Maduruoya | | | | | | | | | | | | | |
| Thursday , 9th November 2006 (Day 4) | IWRM Applications in Mahaweli Projects | Model of Kala Oya Basin towards the IWRM | Tea Break | River Basin Applications in Sri Lanka | | Lunch | Feed back from the Participants on Field Visits | | Tea Break | Group Work / Brain Storming Session | | Ice Break | Each Group Presentations on their findings | |
| Resource persons | Eng. Mrs. Sepali Mathmaluwa | Eng. Mrs. Lalitha Seneviratna | | Eng. Sudharma Elakanda | | | Participants | | | 3-4 Working Groups will Discuss how the Workshop | | | | |
| Friday , 10th November 2006 (Day 5) | Sri Lanka experience on recent Tsunami, precautions and strategies to minimize large scale disaster. | | Tea Break | Lessons learnt from Tsunami and re-construction with a new vision (experience from lessons learnt from Tsunami disaster) | | Lunch | How Hydropower Sector influence for IWRM | | Tea Break | Effective and Sustainable Management on Existing Water Infrastructure | | Ice Break | Certificate Awarding, Closing Ceremony & Reception Dinner | |
| Resource persons | Mr. Lalith Chandrapala | | | Eng. Dharmasiri de Alwis | | | Mr. Shavindranath Fernando | | | Mr.Takuji Oikawa | | | | |
| Saturday , 11th November 2006 (Day 6) | Departure of Participants | | | | | | | | | | | | | |

