

ORGANIZATION AS A STRATEGIC RESOURCE IN IRRIGATION DEVELOPMENT

A CONFERENCE REPORT*

EXECUTIVE SUMMARY

In November 1982, a Conference of Asian irrigation administrators, project engineers, donor agency representatives and social scientists was held at the Asian Institute of Management in Manila to discuss a theme of current concern in irrigation development: the mode of intervention of irrigation agencies in new or rehabilitation projects where active water user organizations are already existing. Attention at the conference was focused on the question of how irrigation agencies can best build upon the skills and organizational capacities of indigenous water user groups in project sites where these resources are available.

At the Conference, participants identified several important recurring problems: (i) the flow of communication between local water user associations and the agency about project plans and implementation procedures has been inadequate; (ii) local groups are often expected to actively contribute to the operation and maintenance of irrigation systems, yet they are often alienated from key decisions about the design and construction of the facilities themselves; (iii) fundamental alterations in the physical arrangement of existing facilities establish demands for corresponding changes in the organization of local water user groups, an imposition which can threaten their viability; and (iv) there are increasing incidents of local groups opposing projects implemented by irrigation agencies for various reasons, some of which are never considered by the agencies in the project appraisal and design process.

Four key issues emerged from the discussion of experiences from the countries represented. They were: (i) agency orientation; (ii) agency capacities; (iii) investment funds and resource allocation; and (iv) support by social science researchers.

Recommendations

1. Recommendations from the Donor Group

- (a) Executing agencies should strengthen internal capacities for working with existing irrigation systems and donors should provide programmatic as well as project support for this purpose.
- (b) Funding for irrigation projects should include support for institutional activities.

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- (c) Donor agencies need to develop improved internal procedures to ensure that institutional issues are adequately addressed in their own irrigation program and project development work.

2. Recommendations from the National Irrigation Agency Group

- (a) Agencies should recruit and train personnel who can work effectively with farmers and existing farmer-irrigator groups.
- (b) Mechanisms should be developed to ensure that project planning, implementation and evaluation at regional and central office levels include perspectives beyond engineering and physical structure development.
- (c) Agencies should take steps to clarify and strengthen the legal status of farmer-irrigator organizations.
- (d) Agency programs should build on, support and enhance existing irrigation system associations wherever possible.

3. Recommendations from the Social Science Group

- (a) Social scientists should be working on a sustained basis with irrigation agencies.
- (b) Irrigation agencies should provide support not only for research but for interactive roles for social scientists as linkage facilitators between farmers, implementing agencies and donor agencies.
- (c) Social scientists in Asia should improve professional and regional linkages among themselves in order to improve the relevance of social science insights and the methods for generating insights on irrigation development.

4. Additional Conference Recommendations

- (a) The problem of irrigation agency interaction with local water-user associations should be viewed in the context of rural development more generally.
- (b) While improving interaction between irrigation agencies and social scientists is important, of comparable importance is the improvement of interaction between irrigation agencies and agricultural scientists.

CONFERENCE REPORT

Working with existing and established groups of irrigators poses a challenge to irrigation authorities and bilateral and multi-lateral assistance agencies. In November 1982, irrigation agency officials, social scientists, and donor agency officials gathered to discuss three key issues that are part of this challenge:

- (i) **The nature of the project cycle.**
A strong tendency to defer and discount institutional issues needs to be replaced by a process for identifying and considering the positive aspects of existing water user organizations, a process that substantially expands the role of farmer participation throughout the project cycle.
- (ii) **The inventory of skills and knowledge which agencies need.**
Issues of management, organization, funding and monitoring may be quite different and considerably more complex than the form these issues take in a more purely "physical" approach.
- (iii) **The roles of social scientists in the recognition, documentation and implementation of existing water user systems.**
The process of interaction between existing water user organizations and agencies will usually require a continuing effort at learning, adjustment, and adaptation. That effort, in turn, will increase the need for communication and coordination among a range of specialists.

Expanded agricultural production and productivity in South and Southeast Asia during the 1960s and 1970s depended significantly on the development, improvement and expansion of irrigation facilities. In the 1980s and 1990s, the challenge to continue to keep food supplies at least even with population growth may prove more difficult, as many countries will be hard-pressed to finance international food imports and many farmers may be hard-pressed to invest in fertilizer and pesticide inputs. Irrigation investment by governments in the region, often with assistance from bilateral and multilateral organizations, will continue to be a major feature of agricultural development, along with improved technologies, research-extension systems, and related policies.

One major aspect of irrigation development is the construction of physical facilities to divert, store, convey, and distribute water. A second major aspect of

irrigation development is the management and organization of water delivery and utilization as well as system maintenance. The second issue draws substance, in part, from experience gained during more than two decades of irrigation system development, varying from cost overruns and construction delays to water scheduling and allocation difficulties and deterioration of physical facilities. Most of this experience came from large and often "new" systems.

In the next two decades, however, the issue of organization and management will draw substance from a clearly emerging trend in irrigation development: irrigation authorities are going to be dealing more closely and frequently with existing and established groups of irrigators. That most often means small systems established by farmers themselves, in some cases many years ago. In several places, such systems have deteriorated seriously, even gone moribund — in both physical and organizational terms. In other places, systems are operated and maintained by indigenous and apparently effective local groups of farmer-irrigators. Most often, however, the smaller systems of existing and established groups of irrigators are somewhere between. What is perhaps most significant, in part because until recently it has not been widely recognized, is that in many parts of South and Southeast Asia, such systems represent a major portion of irrigated areas.

Consequently, irrigation authorities are now turning their attention to existing and established groups of irrigators. Compared to most alternatives, the rehabilitation of existing irrigation systems is a less costly method of increasing crop production where high water requirements are present. The success of such efforts will be determined in large part by what forms of interaction occur between existing water user associations and the irrigation authority. Moreover, new irrigation construction and development is likely to occur in areas where indigenous, community irrigation systems and active water user groups already exist. In the past, when this has occurred, smaller systems have been incorporated or absorbed by the larger projects, often without ever having been recognized. Today, there is widening suspicion that performance problems associated with some large projects can be linked, at least in part, to an earlier failure to recognize and work with the constructive features of existing local water user groups, especially their ability to mobilize local resources for system operation and maintenance. For example, contemporary efforts to "disassemble" large systems into smaller water management units, each composed of perhaps only a few dozen

farmers, can be viewed as both (i) an effort to nurture capacities for local resource mobilization and (ii) a management imperative given the problems associated with centralized management of large irrigation systems.

This Conference was organized to address the challenges that agencies will face as they expand the scope of their interaction with existing water user associations. To do this, the Conference focused on experiences of agency interaction with indigenous systems. Discussion was directed at determining what strategies work, what strategies may require rethinking and how effective approaches to interaction with indigenous systems can be translated into operational and appropriate project cycles.

Four types of participants attended the meeting:

- Senior Administrators from irrigation authorities in Indonesia, the Philippines, Sri Lanka, and Thailand.
- Representatives from Asian irrigation agencies who have direct familiarity with specific programs and projects involving agency interactions or assistance to established and functioning water user associations. Countries so represented were Indonesia, the Philippines, Sri Lanka, and Thailand.
- Representatives from international and regional development assistance institutions. These included: the Asian Development Bank, the Ford Foundation, the International Labor Organization, the United Nations Food and Agriculture Organization, the United States Agency for International Development, and the World Bank.
- Asian social scientists from Bangladesh, Indonesia, Japan, Malaysia, Nepal, the Philippines, Sri Lanka, and Thailand.

The Conference was held at the Asian Institute of Management in Manila from 15-19 November 1982. A field trip to the northern Philippines was organized by the National Irrigation Administration during the period 21-23 November 1982.

REVIEW OF THE SITUATION: ISSUES AND PROBLEMS

Reports and discussions in the Conference confirmed the seriousness of the problem — in many nations of South and Southeast Asia, national irrigation agencies are planning and implementing irrigation development activities in locations where existing local

irrigation groups are operating their own irrigation works. Not infrequently, these programs are implemented in ways that fail to draw on the considerable resources that these local systems represent: organizational, informational, and physical. Moreover, the manner in which government projects are formulated, designed and implemented often alienates existing local irrigation groups. This, in turn, reduces the interest and willingness of these groups to assume financial and managerial responsibilities for operating and maintaining irrigation facilities.

Our review of four pertinent cases — assistance to the well-known community systems of Bali, Indonesia (the *subaks*); improvement programs for the traditional systems of Ilocos Norte, the Philippines (the *zanjeras*); the program to rehabilitate the village tank systems of Sri Lanka; and projects to improve the facilities of "people's irrigation systems" in northern Thailand (the *muang-fai*) — illustrated the range of approaches and strategies presently being used by irrigation agencies as they approach existing irrigation units. Some programs give attention to the matter of retaining local autonomy and integrity while others give more prominence to establishing agency responsibility. Some strategies highlight farmer capacity, experiences and knowledge, and attempt to include these in the early stages of project conceptualization and planning, whereas other approaches appear to dismiss these local resources — or at least ignore their potentials.

Our review of experiences involving irrigation agencies and existing irrigation groups for project planning and implementation revealed several important recurring problems:

- **Poor flow of communication.** Frequently the local group has little or no information about what the agency plans to do with "their" irrigation facilities. There is little flow of information from the agency to the local group. Likewise, there are inadequate procedures for transmitting important information from the local group to the agency — thus plans and procedures are fashioned which unnecessarily contradict local conditions and situations.
- **Involvement of local groups is delayed.** Often the involvement of farmers is delayed until water is flowing and the physical apparatus of the system is in place and ready to be operated and maintained. This procedure prevents the local group from participating in making key decisions about (i) the design of the facilities, (ii) the desirable placement of them in the physical and social landscape, and (iii) the articulation of the goals and

objectives that the engineering structures are intended to serve.

- **Changes in local organizational arrangements are demanded.** Fundamental alterations of the physical facilities of the irrigation works (relocation of the diversion wies or new placements for tertiary-level turnouts, for example) establish demands for new organizational arrangements. The most common situation is the demand for several small independent groups to be "federated" into a larger entity to conform with the modified command area created by a diversion wies or other water source. There is need to recognize that what may be preferable from an engineering perspective (replacing many small wiers with a single large one) might be less desirable from an organizational view (small, independent and highly adaptive groups reorganized into a large, more formal and distant management entity). Engineering as well as organizational alternatives are possible and each has variable "costs" associated with it.
- **Farmers resist "improvements" that the agencies plan and implement.** There are increasing incidents of local groups objecting to the programs that irrigation agencies are implementing. The reasons may be related to the points discussed above — poor communication, constructing facilities that ignore existing principles of operation and long-established property relationships and organizational boundaries. Local groups don't always believe that they will be better off as a result of the assistance being provided.

These are some of the important problems that participants saw arising as agencies extend their work into the domain of existing local irrigation systems. The Conference exposed these problems as symptoms of more fundamental issues which are described below:

1. Issue of Agency Orientation

While not universal, policies and programs are commonly devised with the implicit assumption that what local groups are now doing to provide irrigation services could be better done by the irrigation agency irrigation works could be constructed and could be operated more efficiently and effectively. Frequently, this implicit assumption is based on poor information about what irrigators are now doing and exaggerated assessments of what agencies can achieve.

While there is much that irrigation agencies can contribute to the present efforts of local irrigation groups,

participants agreed that these contributions will be enlarged if they are made in support of and through the local groups rather than without them. Nearly all contemporary irrigation project planning expects local groups to play a large role in routine operation and management during the life of the project. Where irrigator groups already exist, a positive agency orientation toward their continuity and toward their early and sustained involvement in the project is most important.

The participants reached a basic conclusion. *Irrigation agencies should examine carefully the assumption they can directly own and operate small-scale irrigation systems widely dispersed across a range of environmental and socioeconomic conditions more effectively than local groups who have owned and operated the same systems.* A more useful assumption may be that local groups can do it — agencies can help.

2. Issue of Agency Capacities

Conference participants repeatedly noted the gap between what needs to be done to successfully work with existing irrigation groups and the capacities of many irrigation agencies. The indicators of the gap are fundamental and diverse — usually including the basic charter of the agency, its patterns of staff recruitment and reward, and such essential processes as budgeting.

Staffing illustrates the matter clearly. Most irrigation agencies are staffed with engineers (often heavily oriented toward civil engineering) and are void of people trained in the social sciences — with, perhaps, the exception of a few economists. In some cases, agency field staff may be quite familiar with water-user organizational issues, but they are not given adequate opportunities to participate in project planning. More often, the agency is without staff capacity to deal with important organizational questions — either by direct action or by guiding and evaluating work that might be done by outside social scientists. Participants concluded that there are few trained staff to ask questions at the design stage regarding the organizational implications of various structural alternatives, few to design the information and other strategies needed to successfully communicate with farmers in the project area, especially in the critical first phases of the work, and only a handful with the skills needed to assist farmers in strengthening their local institutions.

Several participants pointed out that the budgeting process sometimes interferes. Construction often must be completed within a financial period that is incompatible with the time needed for a local group to adequately consider alternatives or strengthen its capacity to effectively participate in project planning and design. Some

participants observed that donors may distort the process of working with local groups by their emphasis on rapid loan disbursement as a measure of project performance. Similarly, the routine use of standard designs to expedite project preparation and implementation may be inconsistent with incorporating the insights and experiences of local groups.

Finally, it was frequently remarked that agencies lack a "methodology" for assisting and strengthening local irrigation groups. A set of guidelines that would inform choices regarding staffing needs and highlight policy inconsistencies and procedural barriers is not available to the agencies.

3. Issue of Investment Funds and Resource Allocation

The process by which funds are made available to the irrigation agency, particularly those from foreign sources, concerned many conference participants. Most, though not all, funds are provided in support of projects. Before being approved, an elaborate set of pre-project activities are implemented with the intention of learning a large amount about the conditions of the project area and possible means for improving those conditions. Donors play a significant role in this process through their provision of various expert teams to examine feasibility issues and assess proposals. As with the irrigation agencies discussed above, these expert groups include few staff trained to examine institutional and organizational matters — the same can be said at the headquarters level where decisions are finally ratified. The assessment of potential investments often hinges on matters of technological feasibility and economic promise with insufficient attention to institutional realities. It is in this way that major projects with deep implications for the integrity of existing local groups can be approved while presenting only the most meager data on the nature of these existing institutions and the expected project impact on them.

The project approach, when used by donors, can be an inadequate means for achieving the increased agency capacity discussed above. Several participants provided an example. A specific project requirement that the irrigation agency implement a more participatory approach in a project, by itself, may not be sufficient to assist the agency develop and institutionalize the capacity to operate more efficiently with existing irrigation groups. Cumulative experience with projects of this type may enhance general capacity — but another approach would be to provide more direct support for capacity-building efforts. That would mean support for staff training, the hiring of institutional specialists, building a careful management review of existing procedures, etc.

Participants made two more general points: (i) most assistance agencies operate with a conceptualization of irrigation development that gives inadequate attention to matters of ownership, governance, and the central role of local group action; and (ii) most donor groups, acting as highly centralized, formal bureaucracies, pursue strategies of irrigation development in which the major role is assigned to a centralized, technical bureaucracy of the state.

4. Issue of Support by Social Science Researchers

The use of social scientists to investigate the pre-project socioeconomic situation and to analyze the socioeconomic consequences of irrigation investments is no longer uncommon. However, both agency and social science participants agreed (especially for the case of pre-project work) that the research results often are of little utility to the project planners.

Several interlocked reasons for this state of affairs were recognized by the seminar participants. First, there is the problem that many social science research efforts are of a "socioeconomic survey" nature. In this approach, the usual pattern is for the researcher to collect data from and about individuals — usually individual water users — but not about the irrigation group or system as a system. Thus, planners may learn from the researcher that the average age of water users in the project is 32.6 years but will not be given information about the complex pattern of rotation used to allocate water during the dry season. The latter point, if understood and reported, would help planners understand much about the existing physical apparatus as well as organizational capacity, whereas the former fact does neither.

In part, this poor fit between the social research data needed and the data which are provided is perpetuated because few social scientists are trained to study irrigation systems as systems. In fact, the study of irrigation systems in support of applied programs of irrigation development is an emerging field with relatively few experienced practitioners at this time. A related point made by participants is that the interaction between agency and social scientist frequently is not a sustained one — thus there is only limited opportunity for the social scientist to learn in depth about agency procedures and requirements and to receive feedback about the strengths and limitations of the research results that have been provided.

RECOMMENDATIONS

Recommendations were generated by two phases of working groups. Four working groups were con-

structured for the first phase, each containing a cross-section of conference participants. For the second phase, three homogeneous working groups were constructed to represent: (i) national irrigation agencies, (ii) international donors and assistance agencies, and (iii) social scientists.

During the first phase, the groups addressed the following two issues:

- (i) Given that much irrigation development in the future will be in areas where irrigation already exists how should planning and implementation processes be modified to effectively utilize existing institutional and physical facilities?
- (ii) The implementing agencies have a large role in fostering farmer involvement in irrigation development, but agencies often face barriers in achieving this. What are the barrier and what are concrete steps that agencies and others can take to overcome these barriers?

During the second phase, homogeneous groups were asked to identify the most important and feasible steps their own agencies and professional communities should take to improve their capacity to effectively address the issues of agency interaction with existing systems. These recommendations are summarized in the following pages.

Recommendations from the Donor Group

1. **Executing agencies should strengthen internal capacities for working with existing irrigation systems and donors should provide programmatic as well as project support for this purpose.** Programmatic support should be focused on (i) improving the commitment at high levels in executing agencies to incorporating organizational and physical resources of existing irrigation groups into agency irrigation project planning and implementation procedures and (ii) developing capacities which permit the agency to consider organizational and physical features of existing irrigation groups in agency planning, implementation and operations and maintenance procedures. Implementing this recommendation implies allowing national executing agencies both time and funds for developing concepts, commitment and capacity to effectively involve existing irrigation groups in their planning and implementation procedures. The question of concept development was given special and specific content by participants in the Donor Group: it refers to a broader perspective on irrigation development, namely, in what social, cultural, economic and

agricultural context do physical irrigation structures operate? Donors have tended to concentrate on project-specific support and the concept guiding project development has essentially been physical construction. *In this recommendation the Donor Group is indicating a need to alter the concept of what irrigation development is, from "building things" to a broader understanding of the interrelationships between physical irrigation structures, the institutional context in which they operate, and the purposes they are to facilitate.*

2. **Funding for irrigation projects should include support for institutional activities.** Project funding should include, in addition to support for physical structures, support for institutional activities along the following specific lines:

- Adding personnel to executing agency project staff who can work directly with farmers and existing farmer-irrigator groups.
- Training existing executing agency staff on how to work with farmers and existing farmer-irrigator groups.
- Documenting and reflecting on field level experience in order to revise and adapt project cycle procedures to accommodate farmer perspectives and participation in irrigation development and operations.

The recommendation to support documentation represented the Donor Group's positive reaction to the process documentation strategy currently being implemented by the National Irrigation Administration in the Philippines. *The Donor Group emphasized that work on institutional issues should not be considered an activity distinct from traditional engineering analysis. The two must go together.*

3. **Donor agencies need to develop improved internal procedures to ensure that institutional issues are adequately addressed in their own irrigation program and project development work.** Specifically, this means that (i) people concerned with institutional issues should be involved in preappraisal, appraisal, supervision and post-evaluation work; (ii) budget allocations and legal covenants should reflect the importance of institutional issues and the flexibility that may be needed to adequately address those issues; and (iii) international agencies and national authorities need to move well beyond project monitoring as the measurement of physical progress to monitoring organizational capacity on the part of irrigation users as well as benefit distribution to those same users.

Recommendations from the National Irrigation Agency Group

1. **Agencies should recruit and train personnel who can work effectively with farmers and existing farmer-irrigator groups.** Trainors can be recruited from outside the agencies if necessary, and should represent disciplines other than those found among the majority of agency staff. The training program should include technical, agricultural, socioeconomic, organizational, and management skills. Consideration should be given to using farmers, both to train agency personnel as well as to assist in the organization of other farmers.
2. **Mechanisms should be developed to ensure that project planning, implementation and evaluation at regional and central office levels includes perspectives beyond engineering and physical structure development.** This means that project planning, implementation and evaluation need to be multidisciplinary. It also means that administrative procedures should be examined and, if needed, modified to ensure that existing farmer-irrigator groups are able to participate throughout the project cycle.
3. **Agencies should take steps to clarify and strengthen the legal status of farmer-irrigator organizations.** It was recognized that the legal status of indigenous water-user organizations has no necessary relationship to the viability of the organizations, a point established by the longevity of many existing water-user associations. Nevertheless, several participants were concerned that associations without legal status may also be without legal rights to water use. While the group recognized that in many situations, the water rights issue has been settled through procedures worked out between affected associations, the National Irrigation Agency Group expressed concern that water rights problems increasingly will be resolved through formal legal mechanisms. Consequently, they recommend that irrigation associations be given appropriate legal attributes. A second issue that concerned the group was the turnover of responsibilities for tasks and obligations, especially where the agency is providing structure rehabilitation assistance. The agencies are concerned that if the associations lack legal standing, the agencies may not be able to develop stable procedures for assistance and then turning responsibility back to the associations for system operations, maintenance and assumption of financial responsibilities associated with the costs of the assistance. Agency representatives were specifical-

ly concerned with the link between legal status and the ability to contract.

4. **Agency programs should build on, support and enhance existing irrigation system associations wherever possible.** This means that (i) attention should be given to both organizational and technical improvement of existing irrigation associations; (ii) national budgets and budgets negotiated with international donor groups should provide for institutional development work; (iii) budgetary provision should also be made for research studies on existing water user associations and the results of those studies considered in program and project development; (iv) procedures and processes should be implemented for documenting and reflecting on agency interactions with water-user associations in order to adjust agency procedures to accommodate the perspectives and participation of those associations in irrigation program and project development; and (v) clear policies at the agency level, and where appropriate, at other levels (e.g., national budget and finance practices) should be developed which support building and maintaining institutional growth at the water-user level. This is principally a call for flexibility.

Recommendations from the Social Science Group

1. **Social scientists should be working on a sustained basis with irrigation agencies.** To do this, social scientists will need to (i) improve their understanding of agency objectives and operations; (ii) improve their understanding in particular of the technical aspects of irrigation and agency operations in irrigation; (iii) develop methods that are responsive to immediate agency needs; and (iv) share findings of their work in a vocabulary understandable to agency personnel and on a continuing basis.
2. **Irrigation agencies should provide support not only for research but for interactive roles for social scientists as linkage facilitators between farmers, implementing agencies, and donor agencies.** The role of social scientists should not be limited to formal research studies, but should be expanded to include patterns of interaction among the agencies and farmer associations. This means that social scientists should have roles for (i) conducting research on existing irrigation associations and agency interactions with those associations as well as (ii) taking responsibility for process documentation research that is oriented to both improving agency understanding of farmer perceptions and

problems and improving farmer understanding of what the agency is trying to do.

3. **Social scientists in Asia should improve professional and regional linkages among themselves in order to improve the relevance of social science insights and methods for generating insights on irrigation development.** This recommendation is, in part, a positive statement about the value of conferences such as this to social scientists as well as other efforts (such as those by the Agricultural Development Council and the Ford Foundation) which encourage social scientists to share experience and knowledge. This recommendation also reflects a concern that social scientists will need to improve their commitment — at whatever level they are working — to an understanding of irrigation development. One way that will happen is by individual social scientists working in agency contexts. Another way is through professional reinforcement from social science colleagues.

Additional Conference Recommendations

In any conference oriented to addressing practical problems and seeking innovative steps to solve those

problems, final recommendations often do not capture the full range of suggestions made. In this conference, two issues received considerable attention, but were not integrated by the three groups into their final recommendations. These are noted below.

1. **The problem of irrigation agency interaction with local water-user associations should be viewed in the context of rural development more generally.** This means that the evolution, status and future of indigenous water-user associations should be understood in the context of the status and future of agrarian change. This directs attention to the politics of rural development and basic issues of control over productive resources.
2. **While improving interaction between irrigation agencies and social scientists is important, of comparable importance is improving interaction between irrigation agencies and agricultural scientists.** Irrigation is, after all, a component of an agricultural system. Quite often, however, the design, construction and management of irrigation facilities proceeds with inadequate inputs from agricultural specialists.

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MEETING SCHEDULE

15 November

Welcome Addresses	Dean Gabino Mendoza President, Asian Institute of Management
	Dr. Bruce Koppel East-West Center
Keynote Address	Dr. Fiorello Estuar Administrator National Irrigation Administration
Statement of Meeting Objectives	Dr. Robert Siy, AIM
Presentations on Community Irrigation Systems in Thailand and the Philippines	Dr. E. Walter Coward, Jr. Ms. Abha Sirivongs Na Ayuthaya Dr. Robert Siy
Perspectives on Irrigation Policy	Ir. Soewasono Dr. Boonyok Vadhanaphuti Mr. Benjamin U. Bagadion Mr. M.S. Wickramarachchi

16 November

Case Presentations:	
Indonesia	Ir. Soewasono Mr. Jelantik Sushila
Thailand	Mr. Yot Sanguanboon Mr. Suthep Tingsabhat
Sri Lanka	Mr. Piyasena Ganewatte Mr. J. Medagama
Philippines	Mr. Benito Visaya

17 November

Donor Agency Panel	Dr. Kunio Takase, ADB Dr. Worth Fitzgerald, AID Dr. Michael Cernea, IBRD
Discussion of Proposals for International and Regional Water Management Centers	Dr. Kunio Takase, ADB Mr. Benjamin Bagadion, NIA Dr. Joseph Madamba, SEARCA
Working Groups	

18 November

Working Groups

19 November

Working Groups
Closing Plenary

21 - 23 November

Field Trip