



International E-mail Conference on Irrigation Management Transfer

June – October 2001

Overview Paper: Irrigation Management Transfer, Sharing Lessons from Global Experience

June 2001

“The water crisis is mainly a crisis of governance. Working towards effective water governance requires an enabling environment and appropriate institutional structures that allow stakeholders to work together for effective water management.” (Global Water Partnership, Towards Water Security: A Framework for Action, 2000)

Introduction

1. The purpose of the International Email Conference on Irrigation Management Transfer is to provide a global forum to identify and share key issues and lessons gained from experiences around the world with transferring management for irrigation from government agencies to water users associations or other private sector organizations.

2. The purpose of this paper is to provide at the start of the Conference an overview of the global phenomena of ***Irrigation Management Transfer***, (or ***IMT***). We hope this will stimulate Conference participants to think about their own experiences and concerns and to provide the Conference with comments about their questions, experiences, views or information on priority issues that should be discussed. These initial inputs will be summarized and disseminated among participants in the second session of the Conference.

3. This paper defines basic terms and concepts related to IMT. It also provides a short introduction to key issues about IMT, including:

1. Mobilizing support for IMT,
2. IMT policies and supporting legislation,
3. Organizational changes,
4. Process of implementation,
5. Water delivery, maintenance and modernization,
6. Financing the irrigation sector,
7. Support services for sustainable IMT, and
8. Outcomes and impacts of IMT.

4. In preparation for the e-mail conference a range of case studies and country profiles have been prepared which document IMT experiences in a comparative way. The Overview Paper refers to information from the case studies or profiles by mentioning names of different countries as examples. We recommend that participants go to the ***IMT Profile*** or ***Case Study*** pages on this web site to find out more about IMT in the respective countries. Also, please

visit the page on [WUA Legislation Country Profiles](#) to find concise summaries about the kinds of supporting legislative provisions for WUAs that exist in several countries around the world.

What is IMT?

5. Irrigation Management Transfer can be defined as the transfer of responsibility and authority for irrigation system management from government agencies to water users associations, or other private sector entities. The words *turnover*, *handing over*, *devolution* and *privatization* are often used synonymously with transfer. IMT may include transfer of decision-making authority (or *governance*). It may include transfer of ownership of scheme infrastructure (which is normally considered *privatization*). It may include transfer of water rights from government to water users associations (as in Mexico). Or it may only include turning over to water users partial management responsibilities, such as water delivery, canal maintenance and paying for irrigation services (as in Sri Lanka or the Philippines), while final approval of O&M plans and budgets are subject to government approval (as with the first wave of IMT in Colombia. (See Vermillion & Sagardoy, 1999).

Why is IMT important?

6. How does IMT fit into the needs of irrigated agriculture and food security for the world? The central challenge facing irrigated agriculture today and in the foreseeable future is *how to produce more food and farmer income with less water*. With an increase of 90 million people per year, it is expected that by the year 2025 world population will reach eight billion people! Between now and then, approximately *80 percent of the additional food supply needed to serve the growing requirement will have to be produced on land served by irrigation*. With growing competition for water FAO (FAO, 2000) estimates that only 12% more water can be made available for these food requirements. This can only be achieved by more productive and intensive agriculture and more productive and efficient water use.

7. In developing countries, about 70 percent of accessible fresh water is used for agriculture (FAO, 1993). However, water diverted into irrigation systems is often also used for household use, for fish production and for drinking water for livestock. Industrialization and urbanization in developing countries will no doubt bring about a reduction in the share of accessible fresh water which is available for agriculture. Generally speaking, the total supply of water in river basins or aquifers is non-expandable (Seckler, 1996). There are three profound effects of these trends:

1. rising competition for scarce water,
2. rising pressures to use water much more efficiently and productively and
3. rising socio-economic pressures to define water rights more clearly.

8. The World Water Vision (WWC, 2000, p. 24) has identified the following four key questions about water management institutions:

1. “Will decentralization and democratization empower communities to select their own level of water services?”
2. “Will the trend towards transferring management of water systems to water users continue, and will these users be assigned stable water user rights?”

3. “Can governments and the private sector form effective public-private partnerships and develop a service-oriented approach to water management, accountable to users?”
4. “Will countries be prepared to adopt comprehensive approaches to land and water management?”

9. The Green Revolution was based on the twin premises that: 1) the government is the engine for development and 2) a standard package of inputs should be promoted by government bureaucracies. Typically, the government coordinated all support services and the farming community was perceived only as *beneficiaries* (instead of *partners*). The green revolution (which included irrigation development) was highly successful in increasing food production and reducing hunger and malnutrition. However, the following ***seven legacies of the state-driven paradigm of rural development*** have lingered long after the Green Revolution:

1. Top-down administration of water and agriculture programs by government agencies,
2. Large, over-staffed government bureaucracies with under-paid staff and little money for operating expenses,
3. Dependence of less-developed countries on external loans,
4. Prolonged low prices for basic cereal and grain crops,
5. Dramatic expansion of irrigated area without a corresponding increase in funds available for irrigation system operations and maintenance (O&M),
6. Rapid deterioration and declining productivity of irrigation systems,
7. Weak civil society organizations.

10. If designed effectively, and implemented together with other supporting policies and programs, IMT can play an important role in helping developing countries and the rural poor to rise above constraints imposed by the seven legacies.

1. IMT aims to transform supply-driven government administration into responsive, demand-oriented management by water users.
2. IMT can reduce the requirements for government staff and resources in the irrigation sector. It can even provide private sector jobs for government staff taking early retirement.
3. If effective, IMT may improve irrigation system maintenance and reduce the need for loan-financed rehabilitation projects.
4. Through more responsive water service and the “social capital” of water users associations, IMT may help farmers diversify into higher value crops and develop agri-business enterprises.
5. Through greater water user control over management and resources, better incentives and accountability and new subsidies designed to stimulate local investment--IMT has the potential to significantly increase the amount of funds available for O&M.
6. Through a new partnership with government, IMT can include incentives toward preventive maintenance. It can provide new group opportunities for more integrated water management, agricultural development and marketing strategies.
7. IMT can promote empowerment of farmers through development of strong water users associations which may federate up to level of an entire irrigation scheme.

11. IMT does not automatically result in such improvements and need to be understood within a context of constraints and opportunities. Also, IMT is organized and implemented in quite

different ways in different places, with widely differing results. In some cases IMT may not be appropriate. There is a significant knowledge gap about actual results of irrigation management transfer--especially what strategies work and what are the necessary pre-requisites. We need to better understand under what conditions IMT should and should not be implemented. Where it is needed, ***our challenge is to find out HOW IMT should be designed and implemented so that it does produce these results.***

Mobilizing support for IMT

12. Over the last three decades, a large number of countries around the world have adopted programs to transfer management of irrigation systems from government agencies to water users associations or other private sector entities (Johnson, et al., 1995). Consistent with general structural adjustment strategies adopted from the mid 1980s to the present, irrigation management transfer has been supported by the major international development banks and many NGOs (EDI, 1996, Arriëns, et al., 1996).

13. Governments often adopt IMT programs in order to improve the financial and physical sustainability of irrigation systems (as in Mexico or Chile), to improve water management and agricultural productivity (as in Andhra Pradesh, India) and to cope with constraints on government budgets (as in the Philippines and most other places).

14. Farmers sometimes promote IMT in order to gain control over the irrigation system and improve the water service (as in the Columbia Basin, USA, Australia). Or they may pressure the government to take over management of irrigation systems in order to gain control over use of irrigation service fees and keep the cost of irrigation from rising (as in the Coello and Saldaña systems in Colombia and the Dominican Republic).

15. The following are some key issues related to mobilizing support for IMT, about which Conference participants may wish to share questions and views. These are:

- 1. What are the key motivating and enabling factors that have led to adoption of an irrigation management transfer policy in your country?*
- 2. What are the main sources of resistance and support?*
- 3. What has been learned about how to mobilize political support for irrigation management transfer?*
- 4. Should IMT be imposed by government or be voluntary and demand-driven?*
- 5. What are the key factors that constrain adoption or implementation of an irrigation management transfer policy?*
- 6. Under what circumstances should irrigation management transfer not be adopted?*
- 7. How has policy formulation been organized and who participates?*

Structuring IMT: policies and supporting legislation

16. IMT is normally adopted with a policy issuance, such as a ministerial or presidential decree, or an executive order by a provincial governor or chief minister. The policy normally outlines the objectives, scope and strategy for IMT. Legislation is often enacted to provide the legal basis for IMT. It may include provisions for water rights; status, powers and responsibilities of WUAs; dispute resolution arrangements; and new roles for government.

17. In a *managerial sense*, an IMT policy may mandate only partial transfer. This is where management authority and responsibility are shared between the government and water users associations (WUAs), contractors, NGOs or other private sector entities. An example of this is where the government must approve O&M plans and budgets, which are put forward by, and later implemented by WUAs (as in Mendoza, Argentina or early IMT in Colombia).

18. In a *hydraulic sense*, an IMT policy may mandate only partial transfer. This happens where only certain sub-levels are transferred to WUAs, such as tertiary or secondary canals, watercourses or minor canals (as in the Philippines or Mexico). The irrigation agency may retain responsibility for the main canal and headworks, such as the dam or intake, or the drainage system. Or IMT may only be adopted for certain types of irrigation systems, such as smaller scale schemes (as in the Small-scale Irrigation Turnover Program in Indonesia).

19. Legislation is often enacted as part of IMT to provide the essential legal basis for reform. The following is a set of potential legal rights and powers for WUAs, which may be provided for in *supporting legislation* for IMT programs:

1. Water use rights,
2. Rights to use, improve and extend infrastructure across private and public land,
3. Right to require water users to become members and pay for the water service,
4. Right to make rules and enforce them with strong sanctions,
5. Right to choose service providers and release or hire O&M staff,
6. Right to make and implement an O&M plan,
7. Right to set, collect and use a service fee,
8. Right to make legal contracts and own property,
9. Right to determine cropping pattern (normally by consensus among water users).

20. Based on international experience, and for the sake of stimulating discussion in this Conference, we hypothesize that the following are *ten elements of IMT programs which are most likely to contribute towards favorable outcomes*:

1. Clear & strong legal status of WUA,
2. Clear water use rights vested in WUA,
3. Irrigation technology is functional and compatible with water right and service objectives and management capacity of water users,
4. Full decision-making authority transferred to WUA, which federates to scheme level,
5. Irrigation agency reorients its relationship with farmers from top-down to new partnership with service agreements, backed up by irrigation management audits,
6. The irrigation agency (or larger ministry) does strategic planning to restructure and identify new roles to take on,
7. New cost-sharing arrangements for O&M & rehabilitation & modernization,
8. During and after the IMT process, the government gives high priority to building the capacity of WUAs and providing an adequate support system for them,
9. High-level political commitment is mobilized and communicated through consistent policies and legislation,
10. Strong program parallel to IMT to develop agriculture, agri-business and marketing.

21. The following are some of the key issues related to IMT policies and legislation, about which Conference participants may wish to share their views. These are:

1. *What is the scope and basic content of the transfer policy statement in your country?*
2. *What policy or legal aspects have been the most controversial and why so?*
3. *What basic legal provisions are in place to support irrigation management transfer in your country? (such as property rights, status of water users associations, conflict resolution arrangements, government regulatory powers, etc.)*
4. *What additional legislation or regulations are needed to strengthen management transfer, both for the farmers, government and other entities?*

Organizational changes

22. IMT programs differ in the type of organizations that take over management after transfer. The most common type is a water users associations. But there are also irrigation districts which are semi-municipal governments (such as in the USA, Mexico and Taiwan). There are mutual companies where water users own shares in the management company (such as in the USA, Mexico and Shandong province in China). WUAs only act as the governing authority and may arrange for contractors to provide water delivery and/or maintenance services (as in the USA and increasingly in China). Self-financing “public” utilities may take over management from government agencies (such as in Morocco and China).

23. Irrigation management can be broken down into four basic components:

1. ***Deciding what the service will be*** (i.e., decision-making authority),
2. ***Paying for the service,***
3. ***Providing the service*** (i.e., implementing O&M),
4. ***Supporting the service*** (i.e., regulating, advising, facilitating).

24. Normally, IMT involves transfer of the first component to water users. IMT tends to shift the second component more (but not necessarily completely) to water users. A private organization could be contracted to collect irrigation service fees. The WUA, hired staff, contractors or other entities may implement O&M services. While government may regulate, private organizations can provide advisory and training services. So several different kinds of organizations could be involved in the above four components.

25. The following are some key issues concerning organizations which take over management after IMT. Conference participants may wish to exchange queries and views about these issues, among others:

1. *What management functions are, or have been, transferred to water users associations or other local organizations in your country?*
2. *Up to what hydraulic level in irrigation systems has management transfer been implemented? What is the average irrigation service area at this level?*
3. *What are the key governance and management roles performed by the local organizations which have taken over management in your country?*
4. *What kind of organizations implement O&M services at different levels after transfer?*
5. *What kinds of organizations are most appropriate for governing irrigation systems versus for implementing O&M services?*

6. *Are there plans to "scale up" or federate local organizations to take over management at still higher levels of irrigation systems?*
7. *What problems or lessons have arisen concerning the issue of federating or scaling up management transfer?*

26. Some IMT programs include strategic planning for the irrigation sector and restructuring of the irrigation agency (such as in South Australia and South Africa). This may include downsizing, adoption of new mandates, redeployment of personnel, and a change from a centrally-financed line agency to a financially autonomous authority or corporation (such as with NIA in the Philippines). ***New mandates agencies may take on after IMT*** include:

1. intensified river basin management and regulation,
2. watershed protection,
3. monitoring water quality,
4. providing technical and financial support to WUAs,
5. monitoring and auditing WUA performance.

27. The following are some key issues concerning organizational changes that may be made in government agencies in accordance with IMT. Conference participants may wish to exchange questions and experiences about these, or others:

1. *How has the irrigation department been reoriented or restructured after IMT?*
2. *What roles have the agency withdrawn from and what new roles have they taken on?*
3. *What is the strategy for downsizing and personnel re-deployment?*
4. *What kinds of training have been provided?*
5. *What kinds of additional restructuring is planned or recommended?*
6. *What kinds of controversy has this generated and how has it been resolved?*
7. *What roles do water users organizations or federations, government and other stakeholders play at the level of water basin management?*
8. *How is, or how should, IMT be linked to water basin management?*

Process of implementation

28. IMT programs differ according to strategies of implementation. Some programs proceed in a gradual, incremental way (such as in the Philippines or Indonesia). Some are implemented rapidly for many thousands or even millions of hectares (such as in Mexico, Turkey and Andhra Pradesh, India). The latter is sometimes referred to as the "big bang" approach. In some programs government mandates transfer of all targeted systems (as in Turkey or Indonesia). In other cases, the government negotiates on a case-by-case basis and systems are only transferred if water users agree (such as in the Philippines).

29. A fully strategic and participatory process for IMT is likely to include the following:

1. Participation of stakeholders,
2. Building consensus among stakeholders about a vision of the future,
3. Formation and functioning of steering committees and consultative groups,
4. Formation and functioning of working groups and participation of resource persons,
5. Transparency and open discussions about pertinent issues,
6. Formulation of a strategy, policy, legislation and implementation plan,

7. Formation of strategic alliances and mobilization of political and financial support,
8. Studies, experimentation, analysis, brainstorming, negotiation,
9. Organizational restructuring,
10. Monitoring, evaluation and adjustments while learning.

30. Generally, organizing or strengthening water users associations is an important part of the IMT process. Training is often provided to future irrigation system managers in how to develop the WUA, principles of water delivery, maintenance, preparation of O&M plans and budgets, conducting meetings, financial management, and so on. Training may also be provided to irrigation agency personnel to help them change their roles and procedures, consistent with IMT. IMT often includes rehabilitation and/or modernization of irrigation infrastructure. It may also include negotiations and formalized agreements between water users and the government about the new division of responsibilities and authority for irrigation system management. A procedure is adopted for legal establishment of WUAs.

31. When a WUA is established, normally it adopts a constitution, which is ratified by the members. A **WUA constitution** is the charter of authority and provides the basic law of the organization. It may include the following items:

1. Basis of authority for the WUA,
2. WUA Mission Statement,
3. Basic roles and structure of the WUA,
4. Legal status and basis of authority,
5. Area of jurisdiction,
6. Criteria for membership (including for non-agricultural water users),
7. Basic rights, powers and obligations of the WUA and its members,
8. Structure of leadership,
9. Method for amending Articles of Association.

32. **WUA By-laws** are the specific implementing regulations and rules for the WUA. The following are elements that are commonly included in WUA By-laws:

1. Procedure for admitting and expelling members,
2. Leadership positions and functions,
3. Procedure for selecting and removing leaders,
4. Tenure of leaders in office,
5. Description of water delivery and maintenance objectives and rules,
6. Rules and sanctions about irrigation service payments,
7. Decision-making procedure for policy and tactical decisions,
8. Procedure for entering into contracts,
9. Protocol for forming federations and having external relations,
10. Procedure for amending by-laws.

33. IMT is often formalized by a **Transfer Agreement**. Transfer Agreements specify the basic long-term roles, decision-making authority and obligations that water users associations and government agencies have relative to irrigation systems. This is normally drafted and signed by representatives of the WUA and government agency which implements IMT. The following are elements that may be included in Transfer Agreements:

1. Inventory of infrastructure and equipment transferred to the WUA,

2. Service area and membership of the WUA,
3. Role and jurisdiction of the WUA,
4. Basic rights, authority and obligations of the WUA,
5. Terms and conditions for transfer to occur or be revoked,
6. Protocol for interaction between the WUA to government,
7. Rights, authority and obligations of the government toward the WUA,
8. Procedure for dispute resolution,
9. Procedure and purpose of Irrigation Management Service Agreements and Audit.

34. The following are key issues related to the process of implementation, about which Conference participants may wish to share their views. These are:

1. *What is the method of planning, implementation and monitoring and evaluation for IMT in your country of concern?*
2. *What are the advantages and disadvantages of the incremental versus big bang approaches to implementing IMT?*
3. *What kind of planning and coordinating bodies are involved. What are their functions? How are the different stakeholders involved?*
4. *Who has access to what kinds of information? How has information been used to make adjustments in the management transfer strategy?*
5. *What lessons have you learned about the transfer process? Do you have any recommendations for how the process should be structured?*
6. *What methods have been used in your country for organizing and developing viable water users' associations or other organizations to take over local management of irrigation systems? What methods have worked well and what methods have not worked well?*
7. *Do you have any recommendations for more effective methods?*

Water delivery, maintenance and modernization

35. When responsibility for irrigation management changes hands from government to water users, there may be a need to modify procedures and technologies for water delivery and maintenance. Farmers may refuse to take over management if their system is heavily deteriorated. They may insist on it being rehabilitated first. ***If the government rehabilitates schemes at its own expense and without participation of farmers, this may only reinforce the perceptions of farmers that the scheme belongs to the government.*** After IMT, they may defer maintenance in the expectation that the government will eventually return and again rehabilitate the scheme.

36. The following are a few key issues about water delivery, maintenance and modernization. Conference participants may wish to exchange queries and views about them, among others. These are:

1. *Has irrigation scheme rehabilitation been included as part of the management transfer program in your country?*
2. *How was it organized and implemented?*
3. *To what extent did farmers participate in it?*
4. *What kind of changes in scheme design were needed due to transfer of management to farmers?*

5. *What were the results of rehabilitation?*
6. *Did it serve to reinforce or decrease farmer dependence on the government?*
7. *How would you recommend that rehabilitation be organized for an irrigation management transfer program?*

Financing the irrigation sector

37. Financing is an important and difficult issue. It relates to the constrained capacity of government to pay for the costs of irrigation. It relates to the constrained capacity and motivation of farmers to pay for the cost of irrigation. It relates to procedures for collecting fees and other revenue and who should have decision-making authority to allocate the funds.

38. The following are key issues related to financing the irrigation sector, about which Conference participants may wish to exchange questions and information. These are:

1. *How was irrigation O&M, rehabilitation and modernization financed prior to transfer? What went wrong with this, if anything?*
2. *Should government subsidies continue? If so, how should they be re-designed so as to stimulate local investment and self-reliance?*
3. *How should irrigation service fees be set? How should fees be collected and used?*
4. *Do water users associations have their own bank accounts? Are they raising capital reserve or depreciation funds?*
5. *What incentives and accountability mechanisms need to be put in place to motivate and enable farmers to finance most, if not all, of the cost of their irrigation systems?*
6. *What kinds of agricultural extension, marketing and agri-business development strategies are needed in order to improve the profitability of irrigated agriculture?*
7. *Do water users associations need credit? How can they get access to it?*
8. *What recommendations do you have for how the irrigation sector should be financed after irrigation management transfer?*

Support services for sustainable IMT

39. An important area which is sometimes overlooked in the design of IMT programs is the support system for WUAs and irrigated agriculture during and after management transfer. Planners need to consult with water users about what support services are most needed by the farming community in order to assume the new responsibilities and tasks as well to overcome constraints and to explore new income opportunities. Support services during and after management transfer may include advisory services about institutional arrangements for the WUA, establishment of organisational and financial procedures and skills, credit facilities, legal advice, marketing and construction procedures. Training and extension will be an important tool to develop the knowledge and skills of farmers and enable WUA officials to undertake management responsibilities and ensure more profitable irrigated agriculture.

40. The following are a few key issues involving support services, about which Conference participants may wish to exchange experiences and information:

1. *Is there a need to re-design and re-vitalize an extension system, both for agriculture and water management? How can the two be integrated?*

2. *Is there a need to promote agri-business development?*
3. *Do WUAs need credit, access to banking services, technical consultation for O&M, financial assistance for rehabilitation, etc.?*
4. *Should WUAs be formally linked to water basin management organizations?*
5. *What kinds of legal support are needed by water users associations after transfer? (such as dispute resolution and enforcement of sanctions)*
6. *What are the appropriate roles of the public and private sectors in providing support to water users associations or irrigated farmer organizations?*

Outcomes and impacts of IMT

41. It is very important that countries monitor and evaluate the implementation, direct outcomes and ultimate impacts of IMT programs. By outcomes, we mean things like fee collection rates, financial solvency or the quality of O&M. Ultimate impacts are things like agricultural productivity, farm income, farm employment, rural standards of living and health.

42. The following are key performance indicators that can be used to assess IMT programs:

1. Total cost of irrigation,
2. Cost of irrigation for farmers versus government,
3. Adequacy of resources mobilized for irrigation management,
4. Collection rate for irrigation service fee,
5. Quality of the water delivery service (adequacy, reliability, timeliness, equity),
6. Quality of maintenance,
7. Organizational effectiveness of WUA,
8. Agricultural productivity,
9. Profitability of irrigated agriculture (per unit of land, water or labor).

43. ***Measuring outcomes and impacts of IMT is vital so that IMT can be a learning process which enables adjustments and improvements while implementing.*** A key element to be included in any IMT programme is the establishment of a monitoring and evaluation system that will meaningfully indicate the performance of the WUA, the irrigation system and the agricultural productivity. The following are key issues related to monitoring and evaluation about which Conference participants may wish to exchange questions and views:

1. *What organizations are doing what kinds of monitoring and evaluation of the irrigation management transfer process?*
2. *What indicators are being used?*
3. *How is M&E data processed and aggregated?*
4. *In what formats is M&E data presented? Who is it presented to and in what forums?*
5. *To what extent has M&E led to adjustments and improvements in the transfer program?*

44. IMT has grown into a world-wide phenomena with important implications for the sustainability and productivity of irrigated agriculture. We believe that open exchange of reports, queries, experiences and views of Conference participants will have great benefits for many professionals around the world who are involved in or who are considering adopting IMT programs. We encourage Conference participants to also review and comment on the *IMT Case studies*, *IMT Country Profiles* and *WUA Legislation Country Profiles*, located

elsewhere on this web site. The following are key questions that Conference participants may wish to comment on during the First Session:

1. *What are the most important issues or concerns you have about IMT?*
2. *What do you think are the most important factors leading to successful outcomes of IMT?*
3. *Do you have direct knowledge about a case of IMT which would help us to better understand an IMT Profile or Case Study?*
4. *Would you like to prepare an IMT Profile for a country which is not yet represented?*
5. *Do you have suggestions about how we can structure Session Two of the Conference (which will be held in September/October 2001)?*

45. Please send your comments to the Conference list server, at IMT-L@fao.org. **Please use relatively short paragraphs and number each of your paragraphs.** This will make it easier for other participants to read and refer to your comments.

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