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Considerations in the Transfer of Responsibilities for Services in the Water Resources Sector

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INTRODUCTION

GOVERNMENTS, DEVELOPMENT AGENCIES, foundations and non-government organizations (NGOs), in differing degrees, are promoting the transfer of responsibilities for irrigation system operation and maintenance (O&M) to the farmers. There are sound reasons to encourage these initiatives, for if properly executed, a number of benefits will accrue to the governments and the farmers. But the reasons for the transfer of responsibilities and the definition of those responsibilities vary among and within these groups.

The overall objective of the institutional and physical arrangements for providing a particular service should be to render a financially and physically sustainable and efficient service that best helps the customers achieve their objectives. The most appropriate organizational actions to attain this objective may vary from only streamlining the the government agencies that currently provide all or a part of the service to transferring full ownership and responsibilities to the customers.

If it is agreed that the customers should pay full costs of the service then they should help make the management decisions to the extent appropriate. They should help decide the most cost-effective level of service and balance between capital and O&M investments. They should have the power to decide all such matters in instances where they assume full O&M responsibility. The government also must play a role if the customers' entity is to succeed. It must maintain the framework within which both the government and the customers function; and it must provide several primary water services. Thus, the objective of a transfer should be to jointly form with the government as a partner, the best organizational arrangements to secure an efficient, sustainable agreed service at least cost.

As implied, too often the objective of transfer itself isn't well defined. Certainly, the costly emergency programs of the government to repair deteriorating facilities while O&M remains underfunded make little sense. However, some government agencies with major construction programs see rapid transfers mainly as a means to relieve budget pressures, ignoring the essential preconditions for success. Competition for limited government budgets is becoming more strained. For these officials, the more rapid the shift, the better. Other agencies fight to retain the workload as their construction program terminates. They are reluctant to relinquish more than token responsibility. Many people outside the government see an unquestionable virtue in stripping the government and promoting privatization --- so transfers must be good and should be rapid with little concern for the institutional or physical details. Just bring in the organizers and the facilitators!

Some who promote transfers behave as though the concept of customer-owned facilities is a recent invention, not realizing that such entities have long existed in most countries. They treat farmers as being quite incapable of understanding the concept, yet are bewildered when 'shell' organizations set up to comply with some funding conditionality evaporate after the support is received and the organization no longer serves a purpose.

These views display narrow perspectives on the nature and benefits of the process constituting a transfer. Unfortunately, transfers are complex. Transfer programs must deal with diverse matters including the service area's (SA) rights to the bulk water supply to be managed by the farmers' entity; the individual farmer's rights to the SA's water allocation; the legal basis for the farmers' entity; the entity's powers on matters such as rights-of-way acquisition; the details of the entity's management, staffing and procedures; the sources of O&M funding (customer charges versus subsidies); the financing of major investments; and the obligations of the farmers and the government.

Constraints on water supply, aggravated by the higher priority needs of growing cities and villages within the delivery area, impose new and different service demands on existing irrigation systems. Many irrigation systems must become bulk suppliers to different classes of customers requiring different service reliabilities and different periods of service, while at the same time continuing the established level of distribution services to the irrigation SAs. Underlying all these factors are the particular characteristics of the country's body of law, the structure of its civil government, the organization of its bureaucracy and its cultural attitudes.

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The transfer of irrigation facilities and the associated responsibilities have generated the greatest attention. But the underlying justification and preconditions for transfers of irrigation are equally valid for the transfer of agricultural drainage, storm drainage and flood control service responsibilities. Indeed, many countries have a longer history of farmers organizing to provide these services than for irrigation.

Thus, before a country initiates transfers in irrigation, it should formulate the scope for transfer of its present responsibilities in all fields of service in the water resources sector. It should enact broad legislation, formulate the policy framework and undertake actions that will be consistent and applicable for all services. And it should initiate actions to transfer all services in parallel irrigation services, though following different schedules of implementation, not just in irrigation services. This presentation is based on that assumption. To avoid confusion, the term Water Service Entity (WSE), a not-for-profit consumer/beneficiary organization, is used herein rather than Water User Associations (WUA) as commonly used in the discussions of transferring irrigation O&M responsibilities.

The information and the approaches offered are not new, but as is true in other aspects of water resources institutions, have been devised and proven by practitioners in the field over a great many years, indeed, for centuries. Numerous papers have dealt with aspects of the topic. This paper discusses the nature of future water services, the history of the roles of government and non-government entities, and some possible government/WSE organizational arrangements; it also presents a list of steps to implement a program of transfer appropriate to a country's situation.

CURRENT AND FUTURE SERVICES

In the past, the primary rural water services comprised irrigation, drainage and limited flood control. However, population and economic changes are affecting the configuration and operation of the existing and new schemes. The future service will be different in important ways and no transfer should be contemplated without a careful assessment of the future economic and demographic conditions in the service area.

The examination should look not only at the service under consideration, but also at entirely new water resources services that may be warranted. As will be discussed, opportunities will arise to combine services under one WSE, particularly irrigation and drainage. Indeed, conditions may make it illogical to do otherwise. Beyond the primary services, the analysis should examine other direct and indirect benefits that may be gained from the facilities such as mini-hydro, recreation and environmental enhancement.

Existing irrigation systems were designed and operated to meet crop demands. The names of the currently responsible agencies often reflect their single purpose. One still finds agencies that shun the idea of supplying non-agricultural users or incorporating mini-hydro in their systems. But in the future, most 'irrigation' systems will have two distinct functions: bulk water supply through the primary facilities to several different classes of customers and irrigation distribution in the agricultural service areas.

The bulk supply function will dictate fundamental changes in the operation of the main storage and conveyance facilities while the operation of the distribution system may experience little alteration. Where groundwater overdraft or pollution occurs, small villages will mimic urban centers and require bulk deliveries of surface supplies during the water-short, often non-irrigation, season. The O&M entity will incur increased costs due to the priority and reliability standards of such service and the year-round demand of village and urban customers. This will call for a high level of system management and an alert agency to assure affordable services without abuse by any bulk customers.

Today, urban/village agencies under the administration of local government function as a customer of the bulk supplier. They receive, treat and, in turn, distribute the bulk water to their customers. The urban/village service functions, however, are outside of this discussion.

The concept of the irrigation SAs as a customer of the bulk supplier within the system service area should be applied in a manner similar to the village and urban customers. This will clearly isolate the decisions regarding the administration, O&M and financial management of the large storage and conveyance facilities from the smaller irrigation distribution facilities. The isolation of the bulk service from the SA distribution has implications for transfers on matters of ownership, O&M responsibilities, cost recovery, costing of services and the role of the government and its customers. Yet, a breakdown by service areas does not preclude the SA WSEs and villages from later joining to assume existing government responsibilities for secondary- and higher-order components of the system.

The future changes in drainage and flood control services will be more subtle. Village and urban expansion in farm areas can justify higher levels of services for removing excess water and controlling inundation. The higher level of drainage and flood control services justified for villages and cities, in combination with agricultural drainage, will determine the future configuration and operation of the drainage conveyance and disposal facilities. Capital investment, O&M costs, classes of beneficiaries and customer responsibilities will change accordingly. Effluent standards will likely dictate more substantial means for disposal and the location of the outfall. This can greatly affect service costs as areas become more congested and [dilution] flows for heavily polluted drainage diminish.

HISTORY OF GOVERNMENT AND BENEFICIARY INVOLVEMENT

The Involvement of Local Entities

Historically, farmers have developed and managed much of the basic water service investment for irrigation and agricultural drainage. Beneficiaries have also played an important role in building and maintaining local flood control works. The larger irrigation schemes, particularly the primary storage and conveyance features, usually have been built by governments. Likewise, governments have taken the lead in building and maintaining the larger flood control systems along major rivers and those serving large areas. But even these government roles have been modified in recent times and now are best described as a partnership with the beneficiary entities.

Irrigation in most countries began with small schemes developed by local groups. Farmers diverted unregulated stream flow or tapped groundwater to serve adjacent lands. Some formed groups to operate and distribute pumped supplies. In all cases, the group established administrative and operating procedures, individual rights within the group's service area, responsibilities of the members, payment procedures and means for enforcement. Informal group rights to the primary water supply, usually determined by the order of development, were recognized among the various diverters drawing from the same source.

These private initiatives were later mirrored in countries that more recently developed irrigated agriculture. Locally-built and operated systems remain in almost every country: in some like Morocco, serving half the lands irrigated and in others, like Nepal and the USA, serving over 70 percent of the irrigated area. The tradition and the broad institutional framework for local irrigation entities exist in almost every country where the transfer of government responsibilities to the customers is now being considered. People engaged in transfer programs should reference these entities in a country when contemplating any institutional reform.

Drainage has a similar history. In Europe, commencing in the 11th Century, beneficiaries organized to drain their lands and build levees to exclude river floods and high seas. These entities remain active with many assuming wider water resource management responsibilities. In the 1800s, North American farmers organized to drain new lands. Today, the 60 million hectares of drained US farm land are served by local non-government districts. Of these, less than a few million constructed as part of federally funded irrigation projects were built under government auspices. China has a much longer history of local responsibility for both irrigation and drainage.

In widely separated countries during this period, people living along rivers organized and dealt with flood control in the same manner as irrigation and drainage. However, construction of major flood control works lagged in large part because population pressures had not forced people onto areas subject to risk and those inhabitants living on lands experiencing frequent flooding pursued activities that could accommodate inundation at less cost than is possible today.

The Involvement of Governments

Regional or national rulers developed large irrigation schemes beginning many centuries ago, particularly in Asia and the Mid-east. In the last one hundred and fifty years, governments accelerated construction of large scale irrigation. Asia witnessed immense areas coming under irrigation in the 1800s and early 1900s for the purpose of alleviating widespread hunger; while countries like Canada, Australia and the US built irrigation schemes to settle arid lands and provide farming opportunities in lightly inhabited regions. Only governments could devote the immense funds required for these large, long-maturing undertakings.

In some instances, governments demanded farmers to organize and agree to accept transfers before development proceeded. As a precondition for constructing new projects, US legislation in 1906 required farmers to form a legal entity that would have powers of taxation to operate and maintain the distribution facilities, pay for the bulk water service from governments and repay portions of the capital costs. This was one of the few examples calling for joint development responsibilities and a legal agreement to subsequently transfer the distribution works to the farmers before construction was authorized.

Indeed, these government projects served bulk supplies to villages and cities on an equal basis with farmers; today this arrangement still provides bulk supply to over 60 percent of the southern California urban population. Though the transfers were permanent, some payment provisions were relaxed during the economic depression of the 1930s. This pre-arranged transfer has been adopted by other countries and is being introduced in development programs now under way.

However, it was during the rapid expansion from the 1950s into the 1980s to increase food production and improve rural incomes that governments throughout the world undertook the massive developments constituting most of the irrigation systems now considered for transfer. The enthusiasm of governments and lending agencies fueled

programs to construct and operate facilities, including the distribution to the individual farmers, spawning agencies that dominated the governments' public works budget.

Not only were facilities constructed without cost to or obligations of the customers, but the ongoing services were heavily subsidized. The dominant political persuasion prevalent during the period even led governments to nationalize long-established, locally owned schemes. These policies and the actions to install governments as the generous service providers at all levels resulted in the situation countries now confront.

Few government drainage programs matched the irrigation projects. Typically, drainage wasn't necessary during the early years of irrigation and the investments were postponed -- most of them too long. But large-scale programs were launched for either groundwater control or land reclamation in countries like Pakistan, China, Egypt and Indonesia. For the most part, these were pursued under the same policies regarding customer responsibilities as governed irrigation. But elsewhere drainage was dominated by local initiatives.

The role of governments in recent flood control work has been significant. The reclamation of shallow estuaries in The Netherlands, levee systems along major rivers in China, Europe and the US and the major flood retention reservoirs in a great many countries have allowed agricultural, urban and industrial development worth billions of dollars. The role of governments was dictated by the magnitude, complexity and multi-jurisdictional nature of these systems. And this will not change.

At the same time, small flood control measures were constructed by local governments and local organizations. Governments provided partial support in some countries through technical and financial assistance. This is changing and, along with other services, governments are passing more of these responsibilities to the customers.

CONSTRAINTS ON GOVERNMENT AGENCIES

A number of factors will influence the future role of governments. Available water resources and financial resources are under severe pressure and are but two of the growing constraints.

The expansion of municipal water supply holds a high priority for government financing. Urban and industrial areas warrant increased protection against inundation. Costly pollution control measures are overdue in all densely populated areas, both rural and urban. Pressures are mounting to give environmental needs a prominent position.

These rising concerns divert the attention and funds from water projects that serve rural areas, further hobbling the governments ability to sustain irrigation and drainage services.

While meeting the objectives of sustainable services under diminishing budgets will require radical measures to modernize the existing government agencies, outdated personnel policies, lagging staff compensation and excessive staffing levels constitute serious constraints on governments to meet the organizational challenge. These conditions stymie efforts to realize the immense opportunities for improving agency efficiency and the service quality, as well as, for reducing costs by introducing readily available management technologies.

A few technicians with computers to store and instantly retrieve data can provide information for more timely decisions than many hundreds of people using manual procedures. One individual with a computer can analyze information, simulate alternative actions and determine the best solution for managing water delivery and flood flows -- an impossible action using manual means. And small groups can manage extended systems through inexpensive communications; exchanging information with on-site staff, transferring data over the inter-office links and issuing system-wide operating instructions from appropriately staffed control centers. Established agencies must remove constraints to introducing advanced office technology and instill a forward-looking business attitude if the service is to meet today's and tomorrows needs at least costs. This has direct implications for the extent of responsibilities that can and should be transferred and for the ease of execution.

Modernizing long-established agencies requires strong leadership, political support and time to introduce institutional change. Some government leaders have announced their decision to meet these challenges. But the very nature of the impacts of institutional and technological change raise fear and opposition within government agencies. The difficulty in overcoming these concerns is a serious constraint.

Fortunately, the needed changes in agencies can be directly and indirectly facilitated by the transfer of the lower responsibilities to the customers. Such transfers bring pressure on the agency through fear of further losses and, perhaps more effectively, by customer scrutiny of agency performance. The political support for sustaining outdated agencies will shift when paying customers become intimately knowledgeable in what can be done to improve the services and reduce their costs. And the public, in part because of the financial straits of many countries, is expressing the view that people should pay for services rendered, giving further impetus to transfers.

POTENTIAL ROLES OF GOVERNMENT AND CUSTOMERS/BENEFICIARIES

Government Role

Though many government activities are transferable and customer participation in agency decisions will make services more effective, there are several functions involved in water resources management that only the government can provide. These are not discussed in any particular order since all are essential to effective management.

Only the government can provide what is perhaps the most important and the most difficult function: the regulatory framework and broad oversight required to manage a nation's indispensable resources, particularly when under pressure. This entails comprehensive monitoring of rivers, groundwater and conveyances to determine water availability and uses. It entails a rights system to bring order to management and a means of accounting for the allocations. It entails effective prompt enforcement of rights to give value to the rights.

Wise conjunctive management of the surface water and groundwater requires that the government establish a licensing system for both surface water and groundwater use. The regulatory role for conjunctive management requires the government to devise incentives for users to pump, (this may include curtailing surface supplies), where groundwaters are rising. It will require strong controls where demands on the groundwater, current or future, exceed safe yield. And the government's licensing system should permit controlled overdraft in periods of drought and firm restraint to assure recharge during periods of above-average precipitation. These aspects of conjunctive management also affect the specific responsibilities and operating procedures of the involved WSEs.

In many countries, the equitability of deliveries is assured by an honest government operation of the delivery system; the government-controlled operations function as the proxy of a rights system and its enforcement. To remove the government from operations, surface supplies or public-well systems, without replacing it with an enforced rights system, assures chaos. And without government oversight, this may occur within small service areas where a few powerful users usurp the rights of others.

The customers, by monitoring the government service agency's actions, can be the government's partner in providing oversight. This is one underlying justification for public involvement and, through this mechanism, the reason cost-efficiencies and improved service can be realized under transfers. Enforcement thus becomes a joint effort.

The government must provide the primary services not easily transferred to the customers. As mentioned, the magnitude and scope of several services will require that the government remains a provider. The role and the implications are obvious and need not be restated. These government services must reflect a business-like operation with full recovery of the costs of the service.

The government must finance (and build) any substantial new facilities and the modernization of primary irrigation, drainage and flood control works as in the past, whether or not they subsequently recover the investment costs. Customers, through their WSE will be obligated to fund major repairs, routine maintenance and operations as defined in the transfer agreement through fees, taxes and equivalent labor. However, the government may also have a role in financing any system alterations and major maintenance of WSE facilities. Larger works, particularly repair under emergency conditions, cannot be completed by local labor and the accumulated treasuries of small WSEs may not meet all needs, at least in the early years. In these instances, the government may have to help WSEs by guaranteeing privately placed loans or offering direct government loans. But the government should refrain from giving subsidies or grants as this will undo the financial discipline essential to successful permanent transfers. Loan repayment responsibility must rest with the WSE.

The government usually retains ownership of major storage and conveyance facilities for supply, flood control and drainage. The complexity of operations and maintenance dictate that the government has the power to assure the integrity of the facilities and the reliability of operations. And over decades, society may wish to change the services and the allocation of benefits.

The government will have to continue any groundwater pumping to control the level of poor quality waters unsuitable for irrigation as the benefits are usually widespread beyond the bounds of any single group of beneficiaries, that often include both urban and rural people. This, however, does not mean that the costs of the services should not be recovered.

In some instances, the government should consider retaining ownership of smaller system components for a short period after transfer, but setting a fixed date to relinquish title. This gives it the right to assure that the WSE conducts proper operation and maintenance or to reassume these responsibilities and increase charges to customers to fully cover the government's added costs. However, customers will not have a sense of commitment to maintenance nor feel a legal obligation if the government permanently retains title. Indeed, by retaining ownership, the government risks inheritance of all maintenance over time.

Customer Role

As mentioned, budget conditions, if not country-wide equity among citizens, will dictate that the government recover the full costs of all its services, eliminating subsidies. As a result, the customers will be keen to contain the service costs; the transfer of system O&M offers the best means. The introduction of full cost recovery, in addition to possible service improvements, is the main stimulus for customer support of transfers.

Customers can reduce costs through the lower unit wages of local hires and their own direct labor. Additionally, they can realize substantial gains from the improved efficiencies of locally directed efforts. Lastly, the customers will, with time, be better able to determine the level of investment in improvements and altered O&M practices that will yield the greatest return to their particular operations.

The second area for significant gain by the customers can be through improvement of the quality and the efficiency of government-provided services. The customers know the gains that refinements offer and they can better help tailor the services accordingly. As mentioned, the customers should seek greater oversight of government operations to maximize quality and minimize costs.

For these and other reasons, customers should assume responsibility for as much of the facilities O&M that they as a group can effectively manage. However, they should not over-reach as there are enough problems when first taking over even a small portion of the scheme. The prevailing conditions in each case will determine the scope of responsibilities for operations and for maintenance. As competence grows, the WSE can expand either through coalescing with others or through the creation of federations of WSEs.

To attain these benefits, the customers will have to organize themselves in a manner to conduct business, resolve internal conflicts and operate and maintain the service facilities. Thus, through their WSE, they will have legal, administrative and service responsibilities with a performance mandate from all members.

Possible Organizational Arrangements

The best organizational arrangements for managing a given service(s) in a specific setting will vary for the reasons implied. The existing legal, cultural and institutional framework will narrow options within a country, though they differ from country to country. Each type of service lends itself to different organizational structures, procedures and roles of the government and the WSE. Yet, combined services such as irrigation distribution together with drainage collection can be accommodated readily under one WSE.

The different classes of customers, the required equitability of services and the potential changes in the future make the government the usual provider of bulk water supplies. For this service, the government unit should be structured as a self-sufficient utility. Rigid cost accounting, cost allocation and transparency in operations and financial performance, formalized through a public oversight commission, can assure efficiency. The government's access to low cost financing should reduce customer costs for expansion and major repair. And full cost recovery based on a combination of service charges and property taxes paid directly to and for the sole use of the government's bulk service utility will clearly link customer costs to the service and to the willingness to pay.

Urban/village service is not a part of this discussion; however, it is important to understand the parallels between this service and those in the agricultural area. Because after all, most governments at the level of villages and many cities, are indeed, "customer-owned and -directed."

Typically, urban/village distribution of bulk water deliveries is made by a local government unit. The entity should be structured as a utility similar to the bulk supply service unit described previously. And in most successful urban arrangements, sewage collection and treatment are combined with the water distribution service and are provided by the same unit. The service area, the customers, the maintenance of the physical works and to a large extent the location and operation of the supply and sewerage systems are the same -- paralleling rural WSE with combined irrigation and agricultural drainage services. In the case of domestic service, sewerage charges can be made proportionate to water delivery and both charges collected together. All charges and taxes collected should be deposited to the account of the supply/sewerage utility which can apply the funds as judged most effective. (Unfortunately, local governments often view service fees as a general source of revenues for all uses, violating the principle of equating service to charges and shortening the utility's means to assure sustainability. This must change if the service unit is to be self-sustaining.)

The distribution of irrigation supplies constitutes a service that is readily observed and measured directly or indirectly similar to urban supply services. The customers' benefits are immediate and substantial. Of all services, irrigation distribution, by its very nature, lends itself most readily to a single-purpose WSE provider structured on the principles of a utility. The legal basis, operating rules and members' responsibilities are straightforward, easily understood and enforceable at the local level. The operation and maintenance of facilities is obvious to the customer and at most levels can be executed by personnel with minimal training. Full cost recovery through a

combination of service charges and property/betterment taxes again can clearly link customer costs to service received. Service revenues should be deposited in the WSE's bank account for use in meeting its annual and long-term budget needs.

As mentioned earlier, bulk storm drainage and outlets for agricultural drainage from large areas can usually be best provided by government entities. As with bulk supply, the magnitude of the undertaking, the mix of beneficiaries and the differing levels of service are too complex for all but the most sophisticated WSE.

The collection and disposal of localized drainage in small areas and the collection of agricultural drainage in service areas within large projects are not unlike irrigation distribution services. The primary difference is that the benefits are not as immediate or obvious as those derived from water distribution. Nevertheless, the assignment of O&M responsibilities to a WSE is similarly justified. The legal structure, operating rules and member responsibilities are similar in principle to that of irrigation entities. Farmers can maintain their on-farm works and join in clearing larger collector channels. The WSE can employ private sector contractors for heavy maintenance and major channel cleaning. Full cost recovery can be derived through local property/betterment taxes with revenues deposited in the WSE's bank account.

On a majority of irrigation projects, the same WSE assumes both water distribution and drainage collection responsibilities for their area of jurisdiction. This encourages better overall water management to minimize the combined cost of water application and drainage. Savings in O&M, general administration and collection of charges will be apparent. This should be encouraged as it greatly reduces both the initial transfer costs and the subsequent O&M expenses.

Storm drainage and flood control are often inseparable. And agricultural drainage is inevitably conveyed in channels that also remove storm waters. The arrangements for managing combined multi-purpose systems can be quite complex. As with other large systems, major storm drainage and flood control facilities are usually assigned to a government entity. The responsibilities for protecting smaller service areas encourage the use of the previously described arrangements for WSEs.

Local villages and city governments can assume responsibility for their community's protection. Charges are often uniform for all classes of beneficiaries, though in large metropolitan areas, several districts may be established with charges related to the services within their respective boundaries. This parallels the approach in urban/village supply and waste disposal services.

In rural areas, the responsibility for local storm drainage and flood control services can be assigned to WSEs. As noted earlier, this purpose united local inhabitants in many counties long before irrigation. The benefits are obvious though intermittent.

The assessment of benefits, however, can be more complicated. Farmers view storm drainage benefits as uniform in relatively flat terrain. But the benefits may differ significantly among individuals in an area of undulating terrain depending on their location relative to natural drainage ways. This has led to varying the service charges to individuals within a WSE's boundaries depending on the anticipated benefits each will receive. The methodology for determining 'zones of benefit' -- maybe three to five zones in a service area -- was developed long ago for this purpose. Using topography maps and hydrological analysis, the extent and frequency of inundation can be determined and the losses that the facilities will prevent estimated, including damage to neighbors from artificially channeled drainage from upslope lands. Benefits can be rationalized and assessed fairly using these techniques.

Another difference from the previously discussed services is that, flood control WSEs will require advice from higher levels of government on major maintenance and for operations during flood. Private contractors will be needed for heavy maintenance. The outside support will be essential where levees are involved. Full cost recovery is derived through property/betterment taxes set for the various zones of benefit.

A more advanced form of WSE can be adopted when customers wish to assume responsibility for larger systems or major components thereof. 'Umbrella' organizations constituting a federation of smaller WSEs and/or local government entities can take responsibility for some government functions cited above. This form of WSE has been successfully applied to supply bulk water within large metropolitan areas governed by numerous city governments and to supply bulk water to groupings of irrigation WSEs. Under these arrangements, each member WSE retains full responsibilities for all services within its boundaries, including any independent supplies it may have already developed. The magnitude and importance of these services dictate that the federation secure highly trained managers and skilled employees. The management of the 'umbrella' entity reports to a board of directors composed of representatives of the member WSEs. Each member WSE pays its share of the costs to the federation on behalf of its service area.

The umbrella organization should be introduced wherever conditions allow. The federation can develop the political and operating power necessary to meet the members' objectives that the individual WSEs alone cannot accomplish. By federating, WSEs can join in solving their common supply problems avoiding costly conflicts and the duplication of facilities. By remaining independent of the activities of the member WSEs, the federation can

provide a highly efficient cost-effective service. Local drainage and flood control WSEs can realize similar results where conditions permit.

The non-government entities discussed so far have been customer-owned non-profit organizations. The examples of successful customer entities cited were of the same form. These satisfy the goal of privatization. But there is also an interest in establishing for-profit entities rather than WSE to take over government and customer responsibilities.

For-profit water supply entities exist in many countries, but they constitute a small segment of the water-related service entities, even in most of the developed world. In recent years, however, urban water supply systems have been privatized in UK and France and trials are under way in East Asia and South America. However, this trend, even in the developed countries, is uncertain and the effectiveness is not sufficiently known for general application.

A fundamental constraint on introducing for-profit water service monopolies in most developing countries is the lack of the institutional strength to maintain a strong, fair regulatory oversight of the private entities. It is proving immensely difficult, and in some countries impossible, to introduce effective regulation even in the long-established areas of regulated private-sector enterprise. And the adaptation of for-profit organizations in the other [six] types of water services would be quite unlikely for a number of reasons.

It would seem an unfortunate diversion at this time to pursue the for-profit route when basic transfer programs are being launched in developing countries -- particularly in the service areas discussed in this paper. It should be noted that this has been attempted before. All of the many for-profit stock companies that launched irrigation projects in the western US failed and the customers took over. This happened in other countries too, including the Indian sub-continent. This does not mean that the WSEs would be unwise to use private-contract services for advice, construction and heavy maintenance. Also, there may be instances where management services should be used to support large complex WSEs, but that is beyond this discussion.

As may be seen, there are a number of primary organizational arrangements to choose from when considering the creation of WSEs. Examples of each previously cited [WSE] can be found and anyone considering or assuming responsibility for formulating the structure of WSEs should spend ample time visiting successful operations. Advice gleaned from managers and customers of established WSEs can determine the degree of success in a specific transfer program and the government's broader endeavor to decentralize and transfer government services. Established practice offers much that theoretical analysis cannot match.

A last point in regard to formulating transfer arrangements. Many of the successful WSEs came into being because there was no government service or even potential support. The local beneficiaries had to construct whatever was necessary to obtain the service that they judged worthwhile. In other instances, the government insisted that beneficiaries organize and legally commit themselves to assume certain responsibilities as a condition for the government to construct any facilities. Thus, the 'transfer' was pre-ordained. The transfers most people are dealing with today are being promoted after the government has put the service in place.

Wherever possible, the government should stipulate transfer conditions before the government will invest in rehabilitation or modernization. 'Transfers' should be built into all new irrigation development and drainage and flood control programs, particularly when the country is transferring responsibilities on the existing schemes. Indeed, governments should adopt this policy and effect the necessary legislation with a degree of urgency.

Service Costs and Charges

A proper treatment of water charges is beyond this paper. However, there are certain aspects of cost recovery and service charges that bear on transfers.

Foremost, the government policy on cost recovery should be consistent for every type and level of service and class of beneficiary. The cost of providing the service is the most common basis used throughout the world for determining service charges. Though incentive pricing may be incorporated within the rate structure, using the cost of service as the basis for charges allows the customer to judge the validity of the total charges and assess whether the provider is cost effective. The charges, of course, will reflect the sophistication and complexity of the service within the service area, a matter in which the customer should have a say.

For the government, as well as for the WSEs, cost recovery is essential for financial sustainability. It is critical that customers understand that after the effected transfer, there will be charges for any remaining government services, that the basis for those charges is clear, and that the amounts can be forecasted. A breakdown of the cost of 'bulk' service and of the 'distribution' service before transfers are discussed will clarify a primary customer benefit of accepting the agreed responsibility for a portion of the system -- the removal of the associated cost component of the government's total charges. If there isn't a logical cost allocation breakdown for the component of the system being considered for transfer, there can be little incentive for customers to act.

PRECONDITIONS TO TRANSFER AND PROGRAM EXECUTION

The Underlying Foundation for the Change

Before commencing a transfer program, there must be a critical assessment of the receptivity and support for the handover of existing government responsibilities and the concurrent increase in the customers' role in rendering the services.

Major institutional adjustments can only proceed if there is a sound cultural, political and institutional foundation. Fundamental changes in government responsibilities are not just a routine adjustment for the agency, but a shift in power, functions and work that may stir the present service providers and the customers alike. Thus, the first action before contemplating a reassignment of responsibilities is to confirm the appropriateness of the institutional changes and the degree of support for the program. The questions include:

1. How are the services currently provided and how are the involved government entities organized, directed and funded?
2. What role, if any, does the customer now play and are the transfer concepts compatible with local customs and the form and role of the local government?
3. Will the customers and the government realize obvious and substantial gains from a transfer?
4. Is there a firm commitment to effect the transfer by the government with active support by agency leaders and is there the political understanding and will to adopt the essential policies, enact the necessary legislation and allocate the associated budget needs?
5. If answers to the above are positive, how do the customers react to the concept?

One cannot overemphasize the importance of this assessment. If any of these questions cannot be answered positively, (indeed questions 4 and 5 in a very convincing manner) then it would be well to assess the wisdom of further efforts.

List of Tasks

When conditions have been judged favorable for instituting a transfer, a successful program will follow a set of clear work tasks. A detailed list of tasks better assures that those contemplating a transfer understand what must be done, the complexity of the program and the general sequence of the tasks. The following list is derived from a number of sources, including discussions at an IIMI meeting. The tasks are grouped into three phases: (1) creating government capacity, (2) defining the proposed transfer and (3) implementing the program. They are presented in the general order of execution, though some tasks can be conducted in parallel and some may already have been completed.

It should be recognized that all tasks in the three phases must be completed since any omission places the program at risk of, if not assuring, failure. This is emphasized by noting that actions may be required on the same matters at every stage, for policies on regulation without legislation are useless, and legislation on regulation without its execution is worthless. The most common cause of failure in strengthening institutional arrangements and securing measurable successes is passing laws and regulations without establishing the units to carry them out, providing the equipment and a full complement of trained staff to do the tasks and assuring the ongoing budget to match the assignment.

Phase I Tasks -- Create/Confirm Government Policy and Means for Transfer

1. Define the government's water resources, sector-wide policies and responsibilities:
 - * national/state policies on the scope of its services, service responsibilities to be transferred, cost recovery, basis of charges, facilities ownership, financing, etc.
 - * regulatory framework including enforcement for a system of surface water and groundwater rights/licensing, scheme water rights and the water rights of the individual
 - * operational oversight (service performance, financial prudence, facilities maintenance)
 - * financing related support for start-up and on-going capital needs

- * technical support
2. Enact legislation, rules and regulations to provide:
 - * modification of the existing government service entity
 - * legal basis for creation and functioning of WSEs
 - * legal and policy basis for determining costs, charges and cost recovery mechanisms for ongoing government service
 - * national, scheme and individual water rights system
 - * oversight of WSEs' financial and service performance
 - * facilities ownership and maintenance of transferred facilities
 3. Budget, establish and staff the government units for:
 - * administration and enforcement of water rights system
 - * oversight of WSE services, administration, financial performance, condition of facilities
 - * administration of transfer program, public awareness, training and technical support
 - * O&M of government-retained facilities
 - * rehabilitation of facilities to be transferred according to policy
 - * financing of WSE activities according to policy

Phase II Tasks -- Formulate Transfer Program

1. Describe the future objectives of the project-specific service(s) to be provided:
 - * bulk supply
 - * irrigation distributors
 - * agricultural drainage
 - * storm drainage and flood control
2. Articulate the government's project-specific policies pertaining to:
 - * facilities ownership
 - * facilities rehabilitation
 - * beneficiary contribution to transfer program costs
 - * cost recovery for each level of services
 - * financing of WSE start-up, new investment, emergency repair
 - * government/public oversight
3. Assess the degree of complexity and combination of services that a WSE can manage under the existing and future conditions.
4. Define project-specific responsibilities of national/provincial/local government:
 - * the government's portion of the services
 - * facilities O&M
 - * basis and means for cost recovery for government services, including additional increment if O&M in the service area remain a government responsibility
 - * pre-transfer rehabilitation of facilities
 - * geographical boundary, role and form of any local government involved
5. Define responsibilities of proposed WSE:
 - * geographical service area
 - * service operations
 - * facilities maintenance
 - * facilities ownership
 - * pre-transfer rehabilitation of facilities
 - * routine O&M, improvement and investment financing
 - * administrative function
 - * fee payment for government-provided service (by individuals or by WSE)

6. Outline possible role of the private sector:
 - * maintenance/rehab work
 - * technical assistance
7. Describe appropriate form of WSE to be adopted:
 - * customer-owned
 - * local government sub-unit
 - * federation of WSE

8. Prepare a detailed schedule for execution.

Phase III Tasks -- Implement Transfer Program

1. Establish WSE:
 - * conduct public education/orientation on transfer program
 - * structure the tentative WSE
 - * vote to establish WSE
 - * legalize the WSE
 - * conduct formal organizational meeting
 - * confirm initial financing
 - * establish initial service charge mechanism and rates
 - * identify management and support staff
 - * formulate WSE's operational rules, regulations and procedures
 - * conduct membership training
 - * prepare Plan for Operation and Maintenance
 - * conduct staff training
 - * conduct farmer O&M training
2. Complete facilities rehabilitation as appropriate:
 - * planning and design
 - * construction
3. Provide ongoing active regulatory and oversight:
 - * water rights
 - * service quality
 - * financial prudence
 - * administration
 - * technical advice

The basic message of this paper is -- formulate transfer programs founded on what has been proven in practice. Much can be learned by examining existing programs for the transfer of service responsibilities, successful and unsuccessful, and by observing long-established WSEs. As mentioned earlier, any government or organization contemplating such programs should invest substantial time to obtain a solid background in these matters -- it will be the best investment for government and customers alike. IIMI has developed a library of materials compiled under their programs. Many old and successful WSEs providing every type of service have prepared informative materials on their evolution and present operations. Numerous investigators have written about government programs. But one should examine what evolved, not just what was envisioned. Unfortunately, this paper can only note example references on the subject, but hopefully that will lead to further exploration by those considering transfer programs.

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