Participation in Irrigation

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## Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>ha</td>
<td>Hectares</td>
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<tr>
<td>NGO</td>
<td>Nongovernmental Organization</td>
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<tr>
<td>O&amp;M</td>
<td>Operation and Maintenance</td>
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<tr>
<td>TM</td>
<td>Task Manager</td>
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<td>WUA</td>
<td>Water Users' Association</td>
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Executive Summary

The irrigation sector provides a rich source of experience and lessons in user participation. Participation by farmers in system design and management helps to ensure sustainability of the system, reduces the public expenditure burden, and improves efficiency, equity and standards of service. Mobilizing support at all levels and establishing the participatory process, however, involves costs; it also demands knowledge of the incentives facing each group of stakeholders, and of the essential elements in building effective users' organizations.

Benefits

Attempts to increase user participation have been spurred by the poor performance—in terms of efficiency, equity, cost recovery and accountability—of many large scale irrigation systems managed by government agencies. Greater participation by farmers, through water users' associations, has helped to overcome many of these problems and produced substantial benefits.

Improved Performance of Systems

The overriding reason for increasing participation is to develop better projects. Clear gains in efficiency and in the standard of service are achieved when design and management of the irrigation system are transferred to farmers. Design of the system benefits from local knowledge. Farmers have a direct incentive, and the means, to minimize costs as well as improve the service: users' associations can reduce labor costs by paying lower wages than government agencies; local farmers provide closer supervision of staff than distant agency supervisors; breakages are reduced because farmers feel a greater sense of ownership. As a result of more timely water delivery and repairs, farmers' yields are higher.

Reduced Government Expenditure

One of the most noted effects (although this has nothing to do with farmers' motives for participation) is the reduction in government staff and expenditure requirements, due to farmer management and contributions of cash, labor and materials. Farmers' associations have proved more effective collectors of user fees than government agencies. It is not unusual for farmers to be willing to pay more than the original user rates after transfer of the system to their control. However, increased collection of fees does not motivate farmer participation. Participation must also result in direct benefits to participants.

Sustainability

Building irrigation systems which are wanted, supported and owned by users themselves provides the best assurance of sustainability. Physical and fiscal sustainability of the irrigation system beyond the project is enhanced when operation and maintenance costs are met from user fees rather than high levels of government subsidy.

Equity

More equitable organizational arrangements and water delivery have been noted when participatory approaches are followed. A contributing factor is the socioeconomic status
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of the leadership, which tends to be closer to that of the ordinary member, involving more tenants and small farmers than in non-participatory systems.

Spillover Effects
The transformation of water users from beneficiaries to partners in irrigation development can have a widespread impact, as farmers become trained and organized. It can increase local capacity to coordinate input supplies, for example, and to deal with other government agencies involved in rural development.

Costs and Risks
Efforts to introduce participation are not without costs for mobilizing field staff, training and organizing farmers and carrying out socioeconomic research. Nevertheless, these additional costs are usually offset by subsequent savings in construction costs and higher loan repayment rates.

A bigger problem can be the additional time needed to establish a participatory approach and get the project off the ground, especially in the absence of existing local democratic institutions. Developing farmer organizations is often a slow process, less under the project’s control than constructing dams or delivery structures. Once the participatory approach has been established, however, it is not unusual for participation actually to reduce the implementation period. The typical causes of delay in implementing non-participatory projects—difficulties in negotiating rights of way, and obstruction by farmers or local politicians—are eliminated by effective participatory processes.

Conditions for Success
Mobilizing Support among Policymakers and Agency Staff
User participation changes but does not eliminate the role of government agencies in irrigation development. Building support from policy-makers and agency staff as well as farmers and other water users is essential for successful participatory projects and involves paying close attention to the incentives relevant to each group. The greatest receptivity to participation is often found in crisis situations, when management problems or revenue drains are most apparent.

In building the confidence of policymakers and senior agency staff, pilot projects have been used effectively to demonstrate the capacity for farmer management, potential improvement in system performance, potential saving in government expenditure and improvement in cost recovery rates. Building alliances with supportive individuals in government has also been effective and has been facilitated by participatory economic and sector work, by enabling task managers to spend several years working in a country, and supporting them with good social analysis.

Project implementation rests ultimately with agency staff. Internalizing support for participation within irrigation agencies often involves structural changes, to link agency budgets firmly to farmer contributions instead of government allocations, and to promote a more service oriented approach. Since agency staff typically come from engineering backgrounds and are not oriented toward dealing with farmers, incentives for them to support farmer participation need to be backed up by training programs. Study tours to farmer managed irrigation districts can be particularly useful, not only for their demonstration effect but also in raising the prestige of participation, exposing staff to new possibilities and creating a bond amongst participants.

The strongest opposition to farmer participation is often encountered at the field technical level, especially where civil service unions are strong. When field staff perceive the proposed changes as a threat to their jobs and livelihood, these vested interests can retard or even sabotage participatory projects. Clear directives are needed from policymakers, supported by
performance measures linked to bonuses and promotions, to encourage greater accountability to the farmers. The new ethos can only develop gradually. Sudden cuts into the status quo should be avoided and the composition of staff allowed to change gradually.

**Building Effective Farmers' Organizations**

Teams of trained specialists acting as community organizers have proved to be the most successful catalysts in participatory irrigation projects. Wherever possible, existing organizational capacity should be built upon. In cases of very hierarchical social structure and inequitable distribution of assets, it may be unrealistic to expect fully democratic local organizations. To control vested interests, the varying incentives of different categories of farmers should be identified and accounted for in project design (for example, in defining water rights), along with the resulting problems of achieving collective action.

Appropriate incentives are needed if farmers are actively to support the users' associations which are essential channels for participation, and to assume the additional costs in time, materials and fees. The most important of these incentives are improved irrigation services, and a voice in management decisions through a users' organization which is fully accountable to its members. The support of farmers is most likely to be sustained, and organizational capacity developed, when they are involved from the beginning in decisions on system design, and when their organization has full ownership and management control of the system. It is essential, for example, that specialized staff be selected by and accountable to the farmers’ organization, even if they have been trained by government agencies.

To be successful, farmer organizations must interact constructively with government agencies and technical experts. This relationship works best when uniform rules are established, and supported by government regulation, for the turnover of responsibility throughout the project. Building the necessary organizational capacity for this turnover involves training farmers for a variety of new functions, from basic literacy, accounting, how to hold meetings, how to deal with agencies, to legal regulations, and even computer applications, as well as water management and operation of equipment.

Fundamental in meeting all these conditions, a strong and transparent legal framework for the organization is needed from the outset, providing farmers with rights and benefits as well as duties and responsibilities. This framework should also be flexible enough to allow farmers to evolve their own organizational structure, and to permit the organization's responsibilities to grow in line with its capacity.
1. Benefits and Costs of Participation

Benefits of Participation

Types of Benefits
The overriding reason for increasing participation in irrigation is to develop better projects. Popular participation is a way to increase the probability of building projects people want, in ways that people can and will manage. Sustainability of the irrigation system beyond the project is enhanced if payment for operation and maintenance (O&M) expenditures is collected from the users rather than being dependent on high levels of government subsidy which cannot be provided over the long run. Sustainability also is enhanced if farmers and stakeholders participate in the project and see it as their own, rather than as something externally imposed.

Evidence of Benefits
Many of the benefits of participation are quite real but difficult to quantify. However, there are a number of studies that document the benefits of participatory irrigation operations. One of the most noted effects (although this has nothing to do with farmers' motives for participation) is the reduction in government expenditure due to farmer management and contributions. For example, in Nepal, contributions by Farmers' Irrigation Associations saved 15 percent of capital costs on projects. In Pakistan, more than 17,000 WUAs were organized under the On-Farm Water Management Projects and they agreed to contribute labor, materials, and cash worth 10 to 25 percent of the costs of watercourse lining. Recovery rates were 90 percent in the first year, and more than 70 percent the second year, though sustaining such resource mobilization proved problematic (Byrnes, 1992:52). In the Philippines, efforts to strengthen farmers' organizations and turn irrigation systems over to farmer management resulted in reductions of staff and other costs in the National Irrigation Authority, in higher farmer equity contributions, and in enhanced fee collection. As a result, when subsidies to the Authority were eliminated, the agency was able to meet full operating expenses, including salaries (Svendsen, 1992).

Reductions in costs to government have significant advantages, and may be explicit objectives of Bank-assisted operations. However, they do not tell the full story, particularly from the standpoint of irrigation performance and social costs and benefits. If government expenditures are reduced by eliminating essential functions which are not taken up by others, then the performance of irrigation systems will deteriorate and the value of investments will be lost. Alternatively, if government expenditure is replaced by farmers' contributions without any change in total

Participation of users in managing and maintaining water facilities and operations brings many benefits. Participation in planning, operating, and maintaining irrigation... increases the likelihood that these will be well maintained and contribute to community cohesion and empowerment in ways that can spread to other development activities.... Depending on the social context and local conditions, such participation can progressively increase in intensity over the project cycle from consultation at the design stage to actual O&M of some parts of the system.

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Box 1
Cost Savings and Increased Performance through Participation

The Philippines
Both cost savings and efficiency related to participation have been documented in the Philippines. Svendsen (1992) shows that, in five major irrigation systems, equity of water deliveries increased, particularly in the dry season, so that available water was spread over more of the service area while yields increased. Bagadion and Korten (1991: 90) report that mean equity contributions on participatory systems were 357 pesos/ha compared to 54 pesos/ha on non-participatory systems. A study by NIACONSULT (1993a) found that, in 1991, National Irrigation Systems which adopted farmer participation had significantly higher collection efficiencies for irrigation service fees (74 percent vs. 45 percent for non-participatory systems); lower recurrent maintenance costs (1.8 vs. 4.6 pesos/ha); lower personnel costs (260 vs. 463 pesos/ha); higher dry season benefitted area (77 percent vs. 65 percent); and higher dry season rice yields (4650 vs. 4150 kilograms/ha). Taking costs and labor contributions into account, farmers' net income per month increased from 764 to 1,149 pesos after participation was introduced on three systems. These gains were most dramatic for tail end farmers who saw major improvements in the equity of water deliveries with participation.

Senegal
Further evidence of the effectiveness of farmer participation comes from Senegal. Before devolution of responsibilities from the government agency to farmer organizations, farmers paid little if anything toward O&M, and the irrigation agency (SAED) conducted maintenance and paid for electricity on an irregular basis. This created unreliable irrigation services, system breakdowns, and overpumping that led to salinization. After taking over the systems, farmers began to pay two to four times the former irrigation rates to cover full O&M, including electricity costs and a fund for replacement of equipment. Increases in performance of water deliveries resulted. At the same time, electricity costs were reduced by half through more careful monitoring of pumping because farmers had both the incentive and the ability to control the amount of overpumping (Nguyen, personal communication).

costs or performance of the system, there may be no impact on net social benefits. However, gains in net social benefits are possible, when participation leads to improved output of the system, or when farmers deliver the same level of service at lower cost than government agencies.

Both cost savings and performance increases have been documented when system management is transferred to farmers. Lower costs derive from the farmers' ability to hire labor at lower salaries, on a temporary basis, or without the full benefits packages often required for civil service employees. For example, Svendsen and Vermillion (1994) show that after the Columbia River Basin Project in the United States was transferred from the Bureau of Reclamation to farmer management, real per acre irrigation assessments were 78 percent of the level under Bureau management, in part because the farmers' associations sought other sources of revenue to meet expenses. Although there is some question of underfunding of O&M, the system has performed adequately for more than twenty years since turnover.

Another source of benefits is that local farmers can provide greater supervision of staff and contractors than distant agency supervisors. This was seen as a major reason for the reduction in pumping costs in Senegal where irrigation agency employees often turned the pumps on and left for other activities, while the farmers' pump operators would be fired for not staying with the pumps. In the Philippines, after farmer associations agreed to pay back a portion of construction costs, they monitored the use of materials and contractor activities much more closely, and even contracted some activities themselves to save money. In participatory systems, farmers have a sense of ownership of facilities and are therefore likely to be more careful about not damaging the structures, thus incurring lower O&M costs (NIACONSULT, 1993a; Merrey and Murray-Rust, 1991).
Other Benefits

In addition to the quantifiable gains from farmer participation, numerous less tangible advantages have also been identified. These include the use of local knowledge to improve system design and operation. According to Korten (1993:2), one of the key lessons of participatory approaches in the Philippines is that "involving farmers in the planning, design, and construction of irrigation system promotes farmer satisfaction with the physical facilities and is a useful way to strengthen irrigation organizations, which then can become the managers of the new or improved systems."

More equitable organizational arrangements, as well as more equitable water delivery, have been noted when participatory approaches are followed. In the Philippines, organizational leadership in participatory systems included more tenants and small farmers, whereas in non-participatory systems the leaders tended to be wealthier. According to Bagadion and Korten (1991:95) "these differences indicated that in the associations of participatory systems, the socioeconomic status of the leadership was closer to that of the ordinary member than was the case for non-participatory systems." This may be a contributory factor to the more equitable water distribution in participatory systems noted above.

Spillover Effects

Participatory irrigation operations can have positive spin-off effects into other sectors. As farmers become trained and organized, they may assume responsibility for other activities such as coordination of input supplies. The exposure to external agencies in the project often increases local capacity to deal with agencies involved in other rural development activities, such as education, health, or marketing. In Nepal, some Farmers' Irrigation Associations for tubewells have taken steps to provide clean drinking water for village schools. It is clear that these associations have given the people a feeling of empowerment with respect to the government. The empowerment of water users, and their transformation from beneficiaries to partners in irrigation development can have a widespread impact, including greater accountability and development of a service orientation within government agencies.

Costs of Participation

Resource Requirements

Serious, effective commitment to increasing participation in irrigation operations is not without cost, both for the projects and for the Bank. Resources need to be made available for training and organizing. It can require millions of dollars to mobilize the field staff of institutional organizers, train farmers, agency staff, and consultants to design appropriate participatory approaches, and conduct research to document learning processes. Extra vehicles may be needed to ensure that staff can meet with farmers on a regular basis. However, these costs are a relatively small fraction of total lending in an irrigation project (see Table 1). In the Philippines, institutional development costs for preparing socioeconomic profiles, fielding and supervising community organizers, and providing training to organizations, totalled $25 per ha, approximately 3 percent of construction costs. Savings in construction costs on participatory projects made up 90 percent of this institutional outlay; equity contributions, plus higher loan repay-

<table>
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<th>Year</th>
<th>Country</th>
<th>Project</th>
<th>US$ million</th>
<th>% Total Project</th>
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<tr>
<td>1991</td>
<td>Mexico</td>
<td>Irrigation and Drainage Sector</td>
<td>24.0</td>
<td>1.9</td>
</tr>
<tr>
<td>1994</td>
<td>Mexico</td>
<td>On-Farm and Minor Irrigation Networks Improvement</td>
<td>37.0</td>
<td>6.0</td>
</tr>
<tr>
<td>1994</td>
<td>India</td>
<td>Tamil Nadu Water Resources Consolidation (estimated)</td>
<td>1.6</td>
<td>0.4</td>
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ment rates, provided a positive rate of return on institutional investments in participatory projects from the perspective of the National Irrigation Authority (Bagadion and Korten, 1991).

**Time Requirements**

A resource constraint more serious than funding is the time required to establish a participatory approach. If the country is not familiar with or receptive to user participation, the first time cost is the lead time TMs need to gain support for the approach. This is made particularly difficult when performance is judged on how rapidly and smoothly a project proceeds from identification through appraisal to signing. Successful TMs who have increased the level of participation in their operations have learned to exhibit a great deal of patience, persistence, and personal commitment to this approach.

Within the project's life, it also takes time for participation to take hold, spread, and show effects. Developing farmer organizations is often a slower process, less under the project's control than constructing dams or delivery structures. To deal with this issue, the Tamil Nadu Water Resources Consolidation Project planned for a seven-year project rather than a more typical five year process. While in most economic calculations "time is money," the increased emphasis on sustainability of irrigation projects has shown the value of a longer-term approach. Indeed, once the participatory approach has been established, participation actually may reduce the implementation period. In the Philippines, for example, participatory projects were extended an average of two years, compared to five years in non-participatory projects. The latter were attributed to "many delays in project construction due to interference of farmers who were not informed or consulted on what was constructed, difficulty in the right-of-way negotiations, and the meddling of local politicians. The problems were almost nil in projects with participatory elements." (NIACONSULT, 1994b:14)

**Expertise**

Preparation, appraisal, and supervision missions must include expertise on water users' associations (WUAs) and participation. Funds for such expertise may be difficult to obtain, especially for the critical up-front costs in project preparation (though potential sources are discussed below). These costs can, however, pay off with better project implementation and performance. For example, the Nepal Irrigation Line of Credit obtained $2.5 million in Technical Assistance from the United Nations Development Programme (UNDP). This infusion of expertise enabled the project to show substantial results within two years despite major economic and political upheavals.

**Costs of Non-Participation**

There are also significant costs to excluding farmer participation in operations. In the 1975 Philippines Tarlac Irrigation Project, for example, existing communal irrigation systems already irrigated more than 2,600 ha within the area of the new project. The project made no provisions for involving these existing communal irrigation societies. A few years later, the project completion report found that because of the neglect of their societies, farmers within the communal irrigation systems had refused to join the project. This led to a shortfall of almost 10 percent of the area the Tarlac project intended to cover, as well as to a loss of potential benefits.

Even when farmers are willing to accept an irrigation project, they are much less likely to pay fees to cover full O&M if they have not been involved in planning the project, are not satisfied with service, or do not have some understanding of how project and O&M funds are spent. Thus, non-participatory projects usually have difficulty in meeting cost recovery objectives. This can lead to subsidies for irrigation, which place a strain on government revenues, and underfunding of O&M, which is recognized as one of the most widespread causes of poor irrigation system performance.
The Philippines: Developing a Service Orientation through Participation

The first and best documented nationwide program to build participation in as a cornerstone of irrigation policy occurred in the Philippines. Beginning in 1976, a Ford Foundation supported pilot project worked with the National Irrigation Authority (NIA) to formally turn over responsibility, ownership, and management of small-scale communal irrigation systems to organized farmer associations. This approach was expanded to cover all communal systems in 1980, and even extended to large-scale national irrigation systems.

Among other factors, legislation passed in 1974 to make NIA financially autonomous was crucial to the authority’s active support for farmer organizations. As a financially independent agency, NIA’s subsidies were phased out, and all expenditures, including staff salaries, had to be met from irrigation service fees. This created powerful incentives for the agency to devolve recurrent O&M to farmers and increase collection of irrigation fees. The latter, in turn, required improving irrigation service so that farmers would be willing to pay.

Korten and Siy (1989) point out that although the concepts behind farmer participation were simple, establishing them in a large technical bureaucracy involved a major effort. The primary factor in this success was the decision on the part of policymakers to support the participatory approach fully and make the institutional and legal changes necessary to apply it. This decision was supported by workshops, training programs, and materials dissemination to develop widespread understanding and support at the policy level for the lessons that were emerging from these pilot activities. The gradual “learn by doing” approach to methodology development and the movement of this methodology by NIA toward national acceptance are two features of its strategy.

Given modifications for differences in culture and terrain, many aspects of the NIA strategy have been borrowed by other countries, including:

- the requirement of legal recognition of user groups prior to their active collaboration with government;
- the use of in-house community organizers;
- performance measures for irrigation personnel which encourage greater accountability to the farmers they served;
- increased participation of farmers in key decisions and in up-front planning and development of the physical systems;
- development of cost recovery mechanisms which made farmers more responsible and instilled a sense of collective ownership of systems;
- development of budget systems which can be adjusted to be responsive to clients; and
- development of mechanisms for systems which allow the gradual refinement of their methods and procedures.

Through these changes, NIA has evolved from an agency primarily concerned with construction to one committed to developing farmer irrigation associations and supporting their management capacities once projects are completed. NIA’s success is an example of what can be accomplished when the government has the will to empower farmers and carries out policies accordingly.
Limits to Participation

Trade-Offs

Participation is not a panacea. Nor are participating farmers selfless. On occasion, there are conflicts and trade-offs between increasing participation and other project objectives. Building active participation can interfere with timely execution of projects (although it also can have the opposite effect), and conflict with project components such as rotational water supply (for example, in the Haryana III project in India).

Participation may also be at odds with equity objectives if some groups have more influence than others. Issues arise because powerful farmers are likely to have a more influential voice than other participants within irrigation associations, and because agencies and other organizations are often more effective if they can draw upon the contacts and resources of the wealthier members. While inequities cannot be eliminated, efforts can be made to structure organizations to include all users and build transparency within WUAs, especially in resource management. Defining organizational membership to include marginal groups such as resettled farmers, female headed households, and tenant farmers can also improve equity. Resource mobilization, particularly to pay for long-term capital investments, may be more equitable if assessed based on land ownership, rather than cultivation of the land.

In cases of very hierarchical social structure and inequitable distribution of assets (for example, Sindh in Pakistan) it may be unrealistic to expect fully equitable and democratic local organizations. Therefore, the Bank and government need to recognize their role in controlling vested interests and acting as advocates for the poor. The differential incentives of different categories of farmers ("head"/"tail", small/large) should be recognized and dealt with in program design (for instance, in defining water rights), along with the resulting problems of achieving collective action.

Scale

It is often claimed that farmers can manage small schemes but not large ones. But there are many examples of farmer managed systems, each covering thousands of hectares in Colombia, Argentina, Mexico, and even Nepal, which demonstrate that farmers can hire their own engineering expertise and operate large areas themselves. In Nepal, traditional farmer managed schemes frequently cover several thousand hectares, without government involvement in construction, maintenance or management. In Mexico, for example, economies of scale have even been found that make farmer managed irrigation districts more viable financially if they cover more than 5,000 ha. The size now considered ideal in Mexico is 8,000 ha. Similarly, the merger of traditional irrigation associations in Mendoza, Argentina, into organizations covering 5,000 to 10,000 ha increased their financial viability.

In these cases, the government agency continues to operate the dams and regulate river flows, and some irrigation systems have not been found suitable for transfer because of technical, economic, or political problems. Establishing and enforcing water rights, constructing and operating major facilities and river basin systems, and mediating allocation among irrigation systems and between irrigation and other sectoral water uses remains a crucial role for governments. Finally, there will continue to be a key role for technical expertise and for government agencies to ensure the water supply, particularly in the main system of larger irrigation networks.

Role of Government

As earlier examples illustrate, user participation changes but does not eliminate the role of government in water resource management. Government policymakers and agency staff must actively support the participatory process if it is to take hold. Active user participation can be perceived as a threat to some governments, and may be difficult or impossible to establish if there are few democratic institutions. There also may be important regional differences within the country, as in Colombia or Mexico. Well designed operations seek to identify the appropriate balance between agencies and farmers, and to engage a wide ranging set of actors in developing a participatory approach to irrigation.
The issue of whose participation is to be sought is central to all participatory operations. The World Bank’s policy on Water Resources Management emphasizes participation by water users, which in irrigation projects generally means farmers. However, there are other important stakeholders, such as government policymakers, agency staff, other water users, people adversely affected by projects, and the Bank itself. To be successful in increasing farmer participation, projects need to ensure that these other actors are involved in and supportive of participatory processes. The following section highlights the roles of each of these key actors and their incentives for increasing participation.

World Bank Task Managers

While support for participation in the water resources sector has been growing and the number of TMs actively supporting participation in irrigation has increased since the 1970s, it is still far from universal. TMs opposed to participation are free to ignore it, and those who support participation may not receive full support from their management. This results in implementation strategies such as settling for "participation on paper" or allowing governments to establish participation programs which are focused too narrowly to have much benefit. Neither of these approaches has much sustainability once the project has ended.

Successful participatory activities require a serious commitment of time and effort on the part of TMs and senior Bank management in order to show government staff and farmers that this is an important issue that will be followed up. The support of higher levels of management for participation is critical to provide resources for participatory project development, negotiate with borrowers to ensure participation, and ensure continuity in approach when TMs change. With the many demands of project and sector work, it is difficult for TMs to add one more priority activity. Management support is one incentive but there are others. Those who have placed emphasis on participation in their operations, whether to empower water users or develop more sustainable projects, have found that despite the frustrations this is one of the most satisfying areas of their work.

Policymakers

Convincing Policymakers

Experience has shown that the participatory approach will not work without a firm commitment from policymakers to user participation in planning, operating, and maintaining irrigation works. Policymakers must also be committed to empowering farmers and to adopting policies, institutional changes, and a legal framework to back them up.

Strong initial support from policymakers (such as that found in Mexico at the Presidential level) encourages quick application of enabling policies and regulations. Bank support for participation also has proven critical in legitimizing this approach among other donors, for example in irrigation projects in Nepal and the Philippines (NIACONSULT, 1993b). Unless the borrower has had prior experience with participation, in many cases support will be only lukewarm. In such cases, a pilot program can be used to build confidence among policymakers. The Philippines experience
Participation in Irrigation (Korten and Siy, 1989) shows that proper education through seminars, frequent interim reports to policymakers, and pilot programs all can be used to build support.

Strategies to convince policymakers to support participatory approaches can come from cultivating a wide range of contacts and by building alliances among supportive policymakers. Political connections can pay off if appropriate questions are asked in parliament or statements are included in speeches. In Turkey, the executive summary of a Bank report calling for greater participation was translated into Turkish and made available to all members of parliament.

Invitations for the Bank to comment on national or provincial water policies have, in some cases, led to incorporation of participatory ideas. Higher-level discussions between Bank management and political leaders such as ministers also can be influential in promoting participation. Identifying and working with young "rising stars" can pay off as they move into positions of greater power. Participatory economic and sector work can be used to identify existing patterns of participation to build upon, and can lead to participatory projects. Many of these strategies require detailed knowledge of the country and people in government. This is facilitated when TMs are able to spend several years working in a country and are supported by good social analysis.

Crisis Opportunities

Many of the successes with participatory irrigation operations have arisen out of crisis situations, in which "business as usual" was untenable. During a period of expansion in irrigation, the availability of project funds and attention given to construction are likely to be great, and deficiencies in performance may not be apparent. But as funding for new construction becomes harder to obtain, government subsidies for recurrent O&M may also become more difficult to sustain. Where the level and collection rates of water charges are inadequate to cover O&M, necessary maintenance is not carried out, and systems deteriorate. Crises in debt repayment add to external pressures in such situations. Inadequate agency management also creates pressures for change from farmers.

Rehabilitation projects or irrigation sector loans which require some form of cost recovery have provided valuable opportunities to build a serious commitment to participation in irrigation. Raising irrigation fees high enough to meet full O&M costs (usually 2 percent of original infrastructure costs per year, in real terms) is often politically unpopular, and the higher fees may be impossible to collect unless irrigation service is improved dramatically. Devolving responsibility for O&M to farmers, at least of tertiary structures, is also a means of reducing government expenditures and increasing cost recovery rates and the quality of irrigation service.

Policymakers in finance departments are often more conscious of the unsustainable revenue drain of O&M subsidies than those in irrigation departments who generally have little if any role in collecting fees and whose budgets are not affected by levels of cost recovery. Building support for participatory approaches among finance officials can be valuable, but this is still "external" pressure from the standpoint of those in irrigation departments who will need to implement the policies. Structural changes to curtail subsidies and link irrigation budgets to fee collection (through financially autonomous irrigation agencies, as was done in the Philippines) are often necessary for irrigation agencies to internalize support for participation (Small and Carruthers, 1991). When agency budgets are linked to farmer contributions rather than government allocations, the agency is more likely to develop a service orientation and value farmer participation. Without such structural changes in the implementing agencies, participation becomes an extra responsibility, which will not receive attention beyond project completion, if at all.
Box 3
Mexico: Rapid Change in a Crisis Situation

Mexico experienced rapid and widespread incorporation of user participation in the irrigation sector. The objective was to make the national irrigation system financially self-sufficient as well as to obtain full cost recovery over time for major works already constructed. The cornerstone of this policy was the transfer of irrigation management to Water User Organizations.

Crisis situations in irrigation system financing and management provided the impetus for sweeping changes. By the end of the 1980s, an estimated 1.5 million ha (out of 6.1 million) of irrigated land went out of irrigated production because of lack of funding for completion of infrastructure and O&M. Bank management was influential in pointing out the need and direction for change, and the Bank provided a loan (co-financed by the Inter-American Development Bank) for the Irrigation and Drainage Sector Project. The three pillars of this project were decentralization and transfer of irrigation districts to Water User Organizations, self-sufficiency in fee collection to cover full O&M costs, and efficiency in budget allocation.

The transfer has been done in two stages. The first gives producers, organized in Water User Organizations (covering 5,000 to 18,000 ha), responsibility for operation and maintenance of large lateral canals and drains. In the second, these organizations take responsibility for the main irrigation and drainage canals and the machinery and equipment required for O&M through the creation of an enterprise or Sociedad. Farmer groups are set up as organizations, rather than less formal associations, so that, under Mexican law, they can operate as legal entities and obtain loans. These organizations are meant to become financially self-sufficient through collection of water charges. Each organization hires a professional team to carry out O&M, including a manager and a group of water masters (one for approximately 3,000 ha) and a chief of maintenance (all graduate engineers) as well as their support staff.

The process of transferring management to farmers already has exceeded targets. Since 1991, thirty-three irrigation districts covering 2.3 million ha have been transferred, and an additional eleven are in process. O&M cost recovery rates have increased from 18 to 78 percent. Many irrigation districts have increased their fees 400 to 600 percent since farmers took over management.

The main reason for the success in Mexico is the strong commitment by the central government. This translates not only into pressure on the National Water Commission to carry out the program (to the extent of firing powerful individuals who opposed the changes) but also into reforms of the Agrarian and Water Laws. These give holders more security and encourage them to make investments for long-term improvements in the field level delivery systems. They also separate land and water rights, and provide for water rights to users through their associations, thus creating an incentive to use water efficiently.

To educate farmers to the changes and convince them to support the program, Mexico relied heavily on mass media campaigns prepared by communications specialists from FAO, along with universities and industry. These were followed by detailed training of the staff of farmer organizations in, among other subjects, computer applications and use of maintenance machinery. Districts in the best financial condition were transferred first (after deferred maintenance was done) to ensure a successful start and build confidence. "Citizenship participation" was a theme, with transparent management and farmers assessing fees through their organizations. On the agency side, building a service concept was stressed so that the remaining functions would be carried out dependably.

The Mexican example shows how rapidly change can be made when there is a clear plan and vigorous government support. It also shows the relative importance of creating the proper environment for participation at the policy level.
**Participation in Irrigation**

**Agency Staff**

However supportive Bank staff and national policymakers may be of farmer participation, project implementation ultimately rests with agency staff. It is crucial to ensure that staff at all levels work to strengthen farmer participation. Moreover, because irrigation agencies are likely to continue to have roles in water resource management which require interaction with farmer associations, their ongoing support of participation should be secured beyond the life of any single project. In many cases, this requires bureaucratic reorientation toward a more service oriented approach within the agency (Uphoff, Ramamurthy, and Steiner, 1991). Securing this support requires structure of incentives for agency staff, training programs, and the personal involvement of TMs.

**Identifying Allies**

Irrigation agency staff (who typically come from engineering backgrounds favoring design, construction, and technical standards over operation, maintenance, and adaptability to local conditions) often are disinterested initially in farmer participation. They may even see it as "interference" in "proper" management of systems. Nevertheless, through wide ranging discussions within the agency, TMs can identify individuals who are receptive or supportive of participatory approaches. These champions of participation are important because they convince others and provide ongoing support for necessary changes between visits from Bank staff.

Receptivity to farmer participation is often more prevalent in agriculture, rural development, or on-farm development agencies than it is in irrigation departments because the former are more accustomed to dealing with farmers. Thus, building farmer organizations and supporting other types of participatory activities through such agencies may seem an attractive option, particularly when irrigation agencies are unresponsive. The problem with such an approach is that it does not build experience with participation within the irrigation agency. In Pakistan, the On-Farm Water Management projects originally gave responsibility for organizing WUAs for watercourse improvement to the Agriculture Department because the Provincial Irrigation Departments were unwilling to become involved. However, subsequent efforts to expand the involvement of WUAs into O&M of lower level irrigation systems faced problems in coordination between the Irrigation and Agriculture Departments. Efforts to ensure that the agencies involved in implementing irrigation projects take part in participatory operations are likely to pay off in the long run.

**Study Tours**

Tours to areas with active participatory irrigation projects have been found to be effective in convincing agency staff of the value and feasibility of participatory approaches. In Turkey, for example, the World Bank supported study tours to Spain and Mexico for the provincial governors and staff of the two agencies involved in irrigation. In Ecuador, study tours were arranged to farmer managed irrigation districts in Colombia. Lower level staff can be taken to visit farmer managed systems within the country to see how they operate. Farmer-to-farmer study tours also have been very successful in training and capacity building among WUAs in Nepal and elsewhere.

In addition to their demonstration effect, tours raise the prestige of participation, expose staff to new ideas and possibilities, and create a bond of common experience among the participants. However, to be effective, study tours must be planned carefully and tailored to the experience of the participants. Selecting sites with similar agro-ecological environments, cropping patterns, irrigation technology, and cultural backgrounds will make it easier for the agency staff to identify with the experience.

**Support from Field Staff**

The strongest opposition to participatory approaches is usually encountered at the field technical level, from the heads of large irrigation districts to local overseers, ditchriders, and
gatemen. This is especially likely where civil service unions are strong. Initially, field staff may feel that participation makes the job more difficult and decreases their authority. They may also believe that the transparency of participatory management will reduce their rents from a project. Lower level field staff, such as ditchriders, pump operators, and gatemen, see farmer participation as a threat to their jobs and their livelihoods. Without clear directives from supervisors and policymakers, vested interests at the field level can retard or even sabotage participatory projects. Directives should be supported by performance measures linked to bonuses, raises, and promotions which encourage irrigation personnel to have greater accountability to the farmers they serve.

Opposition from agency staff is minimized if increased farmer participation does not cut heavily into the current status quo. For example, if the absolute O&M budget is not diminished as a result of farmer participation in O&M, or if money is shifted from activities for which farmers are taking responsibility to activities which are not yet being conducted. Opposition also can be avoided by trying to ensure that staff made redundant by participation find employment elsewhere in the system, and slowly changing the composition of the staff to enable the agency to assume a new service role.

**Box 4**

**How to Foster Participation**

1. Help people reflect on their own conditions.
2. Speak their language.
3. Live (or at least spend time) with them.
4. Take their interests and values into account.
5. Respect them as individuals.
6. Find ways to get each individual to have a stake.
7. Train them.
8. Create appropriate reward structures.
9. Pay attention to detail.
10. Take adequate time.
11. Do your homework.

Thomas Dichter (1992)

**Advantages for Field Staff**

Rehabilitation or modernization of systems in preparation for transferring them to farmers may provide a more professionally satisfying task for staff than the lower-level O&M work being turned over to farmers. In many cases, as field level staff gain experience with participatory methods, they come to appreciate relief from constant individual demands of farmers as regular channels for communication develop (Merrey and Murray-Rust, 1991). Selecting areas with successful participatory approaches as training sites enhances the prestige of working with farmers. Over time, the vocabulary and approach of those working within the system unconsciously begins to change. Gradually a new ethos develops within the field level staff, one which will spread throughout the system both through participatory development training programs and as personnel are transferred to other projects.

**Farmers**

**Building Confidence**

Farmers generally respond positively to any system which they feel gives them a reasonable assurance of getting water while taking their interests and values into account. Although the main purpose of a participatory project is to establish such a system, the willingness of farmers to participate should not be taken for granted. A lack of confidence in the government and a fear that they will be handed more than they can manage physically or financially often makes farmers reluctant partners at first. Confidence grows once a system is developed that ensures their direct involvement and some degree of control while providing benefits that allow tasks to be carried out at reasonable cost. Special efforts to gain the support of community leaders can contribute to success, but these should not be at the expense of more widespread participation from all farmers.

**Danger of Exploitive Approaches**

Many participatory program failures grow out of a government’s view of farmers as a resource. In such an environment, farmers'
associations are viewed as providers of labor for construction and maintenance or for cash support which can be tapped as necessary to supplement tightening budgets. What the association looks like from the farmers' point of view is never asked, so organizations are formed which are quite beneficial to government but provide no long-term benefits for the farmers. These organizations are not sustainable and generally die soon after the short-term resources of a project disappear.

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**Box 5**  
**Senegal: Creating Incentives for Farmer Participation**

Irrigation systems in Senegal were plagued with problems of poor financing and O&M in SAED (the agency providing irrigation services), resulting in poor agricultural production and frequent need for system rehabilitation. As the government began to withdraw from provision of many agricultural services, transfer of irrigation system management to farmers was included in SAED’s terms of reference. However, early efforts to establish village units showed little success because of unclear plans, timetables, and provisions for the transfer, and a lack of control or incentives for the farmers. Economic Interest Groups set up as legal entities empowered to obtain credit, purchase inputs, and provide services were more successful but had little role in irrigation.

Recognizing these problems, the 1990 Bank-assisted Irrigation IV Project required total transfer of O&M to farmers as a precondition for financing rehabilitation works. Getting farmers to agree to take over these systems required considerable negotiation, particularly because they perceived existing irrigation fees as too high, let alone the additional costs and responsibilities of covering full O&M.

Increasing the control of farmers over irrigation services was the key factor which convinced them to agree to assume responsibility for system management. Farmers demanded the right to hire their own staff, choosing SAED operators only if they had performed well, and even then reducing their salaries from the full civil service package. The formal agreement with SAED specified that farmers would be responsible for full O&M, cost recovery, and compliance with cropping plans. SAED would transfer ownership of rehabilitated, operating systems with their infrastructure, and thereafter could enter the schemes only with farmers’ permission.

Manuals were prepared for each system which specified the technical requirements for O&M, requirements for administrative and financial management, and agroeconomic requirements of the cropping plan and agricultural intensification. These helped farmers to understand and become more confident of their abilities to manage the systems. In addition, training in basic literacy as well as technical and financial skills for organizational leaders was incorporated, with farmers willing to pay at least part of the costs.

Although the long-term sustainability of the project is difficult to assess, the accomplishments to date are impressive. Before the transfer, SAED assessed fees covered only 17 to 21 percent of maintenance and replacement costs, and collected less than a quarter of that (Nguyen, 1994). As a result, maintenance suffered, electricity often was not paid for, and system reliability was very poor. After the transfer, farmers paid fees four times as high, covering not only O&M (including full electricity) but a replacement fund for capital. The benefit to the farmers was greatly improved irrigation reliability. Moreover, because they were able to monitor the pump operators and had an incentive to save on energy costs, electricity requirements were reduced by half. Savings to the government were apparent, as SAED’s personnel were reduced enormously when farmers took over functions.

The government’s support for withdrawal of the state from direct provision of services, and the poor performance of systems which made officials and farmers willing to try new approaches, were clear factors in the success of this management transfer. However, the project also was able to build on the institutional capital of Village Units, Economic Interest Groups, and other organizations developed during the 1980s, and on a civic tradition of citizens asserting their rights.
Costs to Farmers

When seen from the farmers' side, participatory projects usually demand increasing contributions of cash and time. The "transaction costs" for farmers of calling and attending meetings, taking over management functions, and negotiating conflicts among themselves are often significant considerations in addition to the increased irrigation fees required. Farmers may be willing to assume these costs, particularly if service from the agency is very poor, but this may require a great deal of persuasion if existing irrigation service is minimally adequate. In the long run, to be successful, farmers have to perceive their organizations as being purposeful and worth the effort and cost it takes to maintain them. Systems must be structured in ways that allow both the government and the farmer to receive a good share of the benefits they require. The best systems establish a fair and stable balance.

Incentives for Farmers

Just as incentives for agency staff to involve farmers (such as financial autonomy and appropriate performance criteria) are critical to their participation, so too are incentives for farmers essential if they are to participate in desired ways. Farmers must see a return on their investment of time, materials and fees, though that return may be in the form of better irrigation facilities, services, or voice in system management. The particular incentives which will be valued most by farmers vary among locations and types of farmers. The most appropriate set of incentives for each project can be identified best by asking farmers which changes in their systems are most important to them.

Better water supply is a strong incentive for farmers. However, using this as the only incentive is risky because the project may not deliver improved water supply or be enough of an improvement to satisfy farmers. In addition, the link between farmer participation and improved delivery may not be clear.

Another farmer incentive is more rapid response to system breakdowns. If breakdowns are a critical problem, this may be easier to establish if farmers, rather than a distant agency, are respon-
Establishing appropriate incentives for pilot projects is particularly difficult. On the one hand, special subsidies or enhanced services to the first groups to organize usually are not sustainable when the pilot is replicated and participation spreads over a large area. On the other hand, if farmers are asked to pay full O&M and take over irrigation functions, and they see other irrigated areas continue to receive the same benefits without assuming the extra costs, there is no incentive to participate. Appropriate combinations of incentives which can be replicated over the entire irrigation system or the sector must be identified. These include improved performance and benefits, cost sharing of investments and matching grants, reductions in fees paid to the government, and other resources for active farmers’ organizations.

Ownership of the irrigation system has been found to be a powerful incentive for farmers to participate in its management and upkeep. People take care of what they own because they know the benefits or losses will come to them, not to an external agency. Thus, many projects (for example, in the Philippines, Indonesia, and Nepal) have included formal "turnover" ceremonies, in which farmer ownership and responsibility for managing the systems are formally acknowledged. Whether or not there is a formal ceremony or certificate of ownership, farmers will not develop a sense of ownership over an irrigation system (or part of it) unless they have some degree of actual control. This, in turn, requires that farmers actively be involved in decisionmaking about their systems. Related to this is the incentive of greater influence over water allocation. In areas of water scarcity or competition between uses, farmers are often anxious to have a say in the amount of water they receive. In other contexts, greater influence over the timing of water deliveries (within or between seasons) is important.

Finally, cultural values can provide an inducement for participation. Traditional patterns of cooperation have been used for collective action in system O&M in Sri Lanka and Indonesia. The Mexican campaign for system turnover is built on existing concepts of citizenship participation.

Other Stakeholders

While farmer participation is becoming more common in irrigation operations, participation of other stakeholders at the local level rarely is solicited. These include non-agricultural users of water (particularly for domestic and livestock purposes) and those adversely affected by the project (particularly those who are to be resettled). Participation of these other stakeholders is called for increasingly as the Bank’s policies on water resources and resettlement are applied. The former advocates integrated planning of water resources, including all sectors, while the latter pays attention to involving those adversely affected by projects to ensure that their needs are met.

Diversity of Interests

Involving other local stakeholders is complicated because they often are from different social groups than the irrigated farmers. Women, including those from landless and non-farm households, are the primary non-farmer group affected by domestic water supply. Those with strong interests in water for livestock also may include women as well as members of ethnic groups other than those in the farming community. Households to be resettled frequently are from different ethnic groups or areas and may lack traditions of irrigated agriculture. Irrigation agency staff have even less experience with such groups than they do with irrigated farmers. To increase participation by these stakeholders may require work with other government agencies or NGOs with more background on domestic water supply, livestock services, or general social services, and more experience and contact with the local people most concerned. Stakeholder workshops and other structured discussions should be more regularly included, but most Bank-assisted irrigation projects have had relatively little experience with such approaches.
Experience has shown that participation tends to be more effective through organized groups and that local organizations are crucial factors in development efforts (Esman and Uphoff, 1984). Particularly in contexts with many smallholders, organizations are vital intermediaries between irrigation agencies and the thousands of farmers in a system. Farmers participate as individuals in privately owned and operated irrigation systems, such as tubewells in India and Pakistan. However, when systems serve multiple farmers, organizations are needed to coordinate the many users. Even in the case of private tubewells, the lack of a coordinating institution has allowed unregulated use resulting in groundwater mining and other problems. Furthermore, without such organizations to channel participation and represent farmers, it becomes extremely difficult for officials to meet with all farmers, especially in a smallholder context. Too often, the result is that only influential farmers can effectively participate.

A number of key organizational elements have been identified in successful farmer participation in irrigation. In the following discussion, these are grouped under the headings Structured Organizations, Institutional Organizers, and Interaction with Agencies.

**Structured Organizations**

Organizations are a strategic resource for irrigation management; therefore, the act of organization is a capital formation activity (Cernea, 1987). Wherever possible, existing organizational capacity should be built upon. Failure to identify informal or indigenous WUAs leads to costly disinvestment in organizational capital and reduces the likelihood of success (Cernea and Meinzen-Dick, 1992). There may be situations in which existing organizations are inappropriate, either because they are not functioning adequately or are dominated by particular groups. However, even in these situations they should be examined to identify why they do not operate effectively so that the new WUAs will avoid those mistakes.

**Purpose**

Organizations require purpose to be sustainable. While consultation with farmers' organizations in designing physical systems or irrigation schedules can establish initial enthusiasm, experience in Pakistan indicates that organizations need continuing roles in system management if participation is to continue. The purposes of these organizations must be established by the organizing staff through consultations between farmers and technical staff. In developing these objectives, attention must be paid to the rights and the duties of the farmers, as well as to the issue of control over resources. However, how an organization's activities are to be carried out should be left to the farmers to decide, with the organizer's help. Korten (1993: 2) states: "It is when irrigation organizations are empowered to exercise management authority over such areas that local interest in, leadership for, and capacity of such organizations flourish."

Whether organizations for participation in irrigation systems should focus on irrigation activities alone or be multi-purpose in scope must be decided on a case-by-case basis. Often, non-irrigation activities (such as control over fishing rights) are important sources of
financing for the organization or offer members important benefits (for example, cooperative input supplies). Existing non-irrigation organizations may provide a basis for WUAs. However, assuming responsibility for too many non-irrigation activities can reduce the time and effort available for critical O&M. Perhaps the most appropriate rule on this issue is that farmers be allowed to take on additional functions themselves without extra activities being externally imposed (Cernea and Meinzen-Dick, 1992).

Specialized Staff

It is frequently assumed that farmers will, or should, carry out activities such as routine maintenance using cooperative labor. However, it is often more efficient for the association to hire specialists who can reduce the transaction costs of notifying farmers of what needs to be done and by when, monitor who attends meetings, and settle conflicts. These specialists may range from the common irrigators who clean channels and deliver water in South India, to pump operators in Senegal, to the engineers, accountants, and computer operators hired by farmers’ associations in Mexico. Farmers’ associations in Colombia even hire lawyers. WUAs in Mauritania offer farmers the option of doing manual work on maintenance; those who choose to do so are paid wages which they can use to offset their water charges. Professionalizing services is a natural part of organizational development and is particularly necessary as the management tasks become more complex and require specialized knowledge or equipment.

It is essential that these staff be selected by and accountable to the farmers’ association, even if they have been trained by government agencies. As part of irrigation management transfer in Mexico and Senegal, farmers’ organizations were given the option of hiring the lower level agency staff whose tasks the associations were taking over. Those staff who had been responsive to farmers and done their jobs well often were retained, but many others were replaced. In Colombia, farmer associations were required to retain agency staff within their irrigation districts, a requirement which gives these associations much less control. Accountability is best when farmers hire, fire, pay salaries, and determine raises or bonuses for the staff.

Training

Building organizational capacity requires training farmers for new functions. These include basic literacy, accounting, water management, how to hold meetings (in Senegal), operation of equipment, and even computer applications (in Mexico). Learning how to deal with agencies and legal regulations is particularly important to incorporate into training. In Senegal, for example, sample contracts were provided to show organizations how to get work from outside firms. Whether the training is provided by irrigation or other government agencies, NGOs, or other farmers, it must be practical and tailored to the needs of the farmers and WUAs.

Legal Recognition of Farmer Organizations

Creation of the legal structure should be part of the formation process of farmer organizations, particularly to enable them to operate bank accounts, obtain loans, or bid on contracts for irrigation activities. The legal structure should be designed to allow as much flexibility as possible in organizational structure.

Model organizations established by outsiders, however well meaning and carefully designed, never take into account all of the farmers’ own felt needs. As a consequence, they rarely work well, nor do farmers identify with them as they do with organizations of their own design. In Maharashtra, India, for example, the legal framework for WUAs was based on the regulation of formal Cooperative Societies and bylaws which were too difficult for farmers to understand and restricted the activities societies could undertake, even when those activities would enhance the financial viability of the organizations (Plusquellec, 1994; Moench, 1994). Farmers should be allowed to determine the structure of their own organizations given agreed upon purposes. But flexibility should be retained in case either structure or purposes need to be modified as experience is accumu-
tion of water fees serves to improve the usage and availability of water. Higher level organizations also have taken over regulation of some of the thornier issues of irrigation, including regulation of equity, participation in scheduling decisions, settlement of disputes, regulation of livestock, use and maintenance of canal roads, and specific maintenance activities at agreed upon levels. High expectations for the roles farmer organizations can play in system management as they continue to develop are appropriate.

**Institutional Organizers**

**Need for Catalysts**

Organizations do not form spontaneously. Experience has shown that organization building often requires outside individuals to act as catalysts to initiate the process and link it to agency activities. In participatory projects, teams of trained specialists acting as community or institutional organizers have proved to be the most successful catalysts.

The organizational development staff are responsible for brokering agreements over the initial purposes of the farmer organization and for explaining the terms of the project to farmers before construction or rehabilitation begin. They must help farmers collect their contributions and complete whatever paperwork is necessary to gain project approval and statutory or legal recognition. Should the project not operate as agreed, they must act as the farmers’ communication channel until higher level organizations are formed and can assume the role, or until the farmers are sufficiently familiar with the system to do this on their own. Organizers, in effect, act as low-tech interactive communications media, broadcasting a series of focused messages to individual farmers and groups.

If farmers are to participate effectively in the planning and execution of physical works, it is critical to have organizers and organizations in place before construction or rehabilitation begin. While the salaries, per diem, and working expenses for institutional organizers...
Box 6
Pakistan: Failure to Empower User Groups for Ongoing Participation

Pakistan’s irrigation program demonstrates what can happen when a government tries to use farmer associations to meet short-term goals without implementing policies which strengthen and empower them. Since independence, Pakistan has depended on large system irrigation. Although tradition and British law made farmers responsible for watercourse maintenance, there was, in fact, little cooperation among farmers for this task. As system deterioration cut water availability, farmers began depending more on tubewells to supplement and eventually replace much of the water they had been getting from the irrigation systems.

By the late 1970s, policy began to shift from construction to rehabilitation of systems and to improvement of water management on existing projects down to the farm level. This shift was influenced by the United States Agency for International Development (USAID)/Pakistan On-Farm Water Management Pilot Program (1976-81) in which farmers supplied all unskilled labor for watercourse improvement while the government supplied only materials and technical assistance. Even the systems restored under this project quickly deteriorated, however, because farmers were not organized to continue post-construction O&M. A similar situation developed in the Punjab government’s 1980 crash program for heavy cleaning of watercourses.

The Bank became involved at the termination of the USAID sponsored effort through the On-Farm Water Management Program. The program worked through WUAs to mobilize labor and funds for improvement of watercourses, with watercourse lining serving as the major inducement to farmers. Socioeconomic criteria for selection of projects were developed. These included the empowerment of registered user groups and an agreement among farmers to improve and maintain their watercourse branches. The Bank required that each of the four provinces implementing the program establish a legal ordinance providing for the organization and registration of user groups at the outlet command (chak) level.

The provincial Irrigation Departments showed little interest in working with farmer organizations, but an On-Farm Water Management Directorate was created in the Agriculture Department to provide training to user association leadership and field level assistance to help farmers organize. More than 17,000 user groups were registered. Although they performed well at the time of improvement, important questions have been raised about their sustained performance once the project was over (Byrnes, 1992). Since the user groups legally were organized and empowered only to support the improvement of the watercourses and provide ongoing maintenance, they had little purpose once the project was complete. While their agreement called for them to continue to maintain the watercourses, the farmers felt they were being used merely as a source of free labor. In their view, the benefit they received for maintaining the organizations and the watercourses was not worth the effort.

The recent Irrigation Sector Review has highlighted increasing problems of the Irrigation Departments in managing canal irrigation systems and the unsustainable revenue drain caused by low cost recovery. The government now is discussing options for transferring management responsibility for O&M up to the distributary level, to federated farmer organizations. Although a pilot project for federating WUAs and expanding their roles may be incorporated into the project’s next phase, the existing WUA structure does not provide much on which to build because these organizations have not had any ongoing role and most ceased to operate after watercourse lining.

The Pakistan experience achieved considerable progress, if measured in terms of a one-shot contribution from farmers. At the same time, it demonstrates that, to ensure sustainable farmer organizations, a working agreement and its legal framework must provide farmers with rights and benefits as well as duties and responsibilities. Organizations also require continued purposes which the members value; those created by projects only to provide cash and labor inputs will not continue to exist once the additional resources of the project have dried up.
generally do not require foreign exchange, experience in the Philippines has shown that it is risky to assign these costs to national counterpart funding in the projects. Shortages of counterpart funds due either to cash flow problems or lack of commitment in government agencies can hold up advance organizational work, and, in consequence, disbursement of loans for construction work. In the Philippines, this problem in the Communal Irrigation Development Project I resulted in 46 percent of the loan being canceled despite three extensions. Resolution came in the follow-on loan when $1.8 million for organizers’ costs were included in the loan amount (NIACONSULT, 1993b).

Selecting Organizers

One of the most important pre-project judgments is the choice of a group organizer for the project. Organizers are important since they act as the main line of communication between the project and the farmers until interaction has progressed far enough for more direct communication to take place regularly. Inducement to participate, explanations of project approaches, and arrangement of activities fall to the organization team. Generally the work is difficult, the conditions are hard, and the hours are long. Great care is needed to find a good source of individuals to carry out this demanding task. Many sources have been tried, including engineering staff, extension workers, irrigation department contracts, NGOs and community members.

Engineering Staff

One option that may appear attractive at first glance is to assign organizing work to the engineering staff and their assistants. However, this approach is limited because:

- engineering staff have very little spare time if they are doing their jobs properly;
- technical staff are relatively expensive and it is not cost-effective for them to spend the time necessary to get to know farmers well enough to carry out institutional organizing properly; and
- the interests of engineers and farmers are often in conflict, and the engineer could be viewed as too biased to approach problems with an open mind.

At the same time, the engineers’ technical understanding of irrigation systems and what they can deliver is valuable for involving farmers constructively in the project. If engineering staff are to conduct this critical task, an appropriate incentive structure and training program must be developed to facilitate the local organization, as was done in Mexico.

Extension Workers

Another potential source of organizers is the agriculture department of the national or local government. The advantages of using these extension workers are several: they are part of regular government staff; they have strong agricultural technical skills; and they generally have had close interaction with farmers. The disadvantage is tied to the difficulty of trying to fund and coordinate activities between agriculture and irrigation departments.

Irrigation Department Contracts

In Nepal, organizers were hired by the project on a contract basis. This enabled them to collect higher salaries in recognition of their long hours and difficult conditions. Gradually, the Nepalese government regularized the organizers and absorbed them into the Irrigation Department, but this put them into positions of dual loyalties, having to support their Department on the one hand and the farmers on the other. A satisfactory approach still has not been developed. However, it is clear that such a "cadre" of organizers is not the full solution, Department engineers, who have the real power and control in the farmers’ view, must be directly supportive, knowledgeable and involved.

NGOs

Hiring organizers from an NGO is another possible source of well educated and trained community organizers. Dichter (1992) suggests, however, that the Bank needs "to go
more slowly and do its homework carefully when it looks for institutional partners for participation. He advises not to take an NGO’s reputation for granted. Many NGOs have their own agendas or lack sufficient staff or technical ability in the field. Some NGOs only provide short-term solutions to the staffing problem, since they may be ephemeral and cannot be counted on for long-term support.

**Community Members**

Taking organizers from the community can provide a long-term solution for support to farmers’ organizations. Local participants should be selected carefully and trained well (NGOs can provide such short-term training). However, this approach has two serious drawbacks:

- the selection process may make it appear that the project is favoring some farmers over others (and sometimes those appearances are based in reality); and

- village level workers often do not have enough authority to warrant serious attention from technical staff, particularly in early phases of projects. The addition of a senior supervisor to the organization team, however, could provide the needed authority to locally hired field staff.

**Education**

The educational level of organizers in various projects has ranged from farmers with minimal literacy through secondary school graduates to university graduates. Experience has shown that each level has its own advantages. The secondary school graduates, for example, are seen by farmers as being closer to them because they are more like their sons and daughters. University graduates, on the other hand, are more confident, better speakers and better at process documentation.

**Skills Mix**

The value of utilizing one group in preference to another is difficult to determine since no single project has used several types of organizers or endeavored to compare them. Contrasts between projects and organizers may be more an expression of differences in the quality of projects than of suitability of the individuals involved in the work. Other cultural factors may be at play (for example, one social or educational group may be more suitable to an area than another), something which should be looked into at the time of appraisal. Experience has shown that a confident person with good leadership ability, communications skills, ability to listen, and grasp of at least basic technical aspects of irrigation can carry out this type of work satisfactorily with training. However, like any other project or agency staff, organizers need appropriate incentives, particularly to keep them accountable to the farmers. Mechanisms for this include having local communities evaluate the performance of the organizers and allowing local communities to hire the organizers directly if they prove useful. A pitfall is that organizers may have an incentive to keep farmers dependent on them rather than working themselves out of their jobs.

**Mass Media**

In some settings, such as in Mexico, the individual community organizer can be supplemented through the use of radio or television to provide farmers with information about irrigation organizations. Even when mass media are available, it is still likely that the field worker would be needed to help catalyze organization of the user groups and other institutions, and to help farmers file proper documents. However, their roles as providers of information can be diminished greatly if a strong communications program is developed.

**Value of Organizers**

The cost of providing institutional organizers is substantial, but it has proved to be low relative to total investment costs and the benefits of farmer participation in the performance and ongoing maintenance of projects. It is even lower compared to the cost of the potential failure of projects when participation does not materialize or cannot be sustained.
Box 7

The United States: Lessons about Scale and Sustainability of Farmer Management

The U.S. Bureau of Reclamation’s transfer of irrigation system management to irrigation districts provides valuable lessons on the potential scale and sustainability of farmer management. Svendsen and Vermillion’s (1994) study of the Columbia River Basin Project documents the experience and performance of a major system (230,000 ha) transferred to farmer management.

Because the Bureau of Reclamation required repayment guarantees from farmers, irrigation districts were established in 1939 and contracts for water sales and payments were signed between the Districts and the Bureau during the construction of the system. The Bureau continued to operate the system until 1969, when, after complex negotiations with the farmers, system management responsibilities were transferred.

Irrigation service was of high quality both before and after the transfer. (The first few years after transfer showed some evidence of technical efficiency loss, ascribable to a learning period for the new management. This should be kept in mind when judging performance within a few years of management transfer.) O&M expenditures held constant, in real terms, although farmers’ fees to the districts averaged only 78 percent of the fees paid to the Bureau. The difference was met by supplementary sources of income developed by the Districts and some reduction of operating expenses. While performance levels have been maintained for over thirty years, there are some indications that maintenance has not kept pace with system aging.

The lessons Svendsen and Vermillion draw from this experience for developing countries relate both to enabling conditions and to the process of transfer. Enabling conditions they identify include:

- a clear and consistent policy mandating irrigation management transfer;
- financial autonomy for the managing agency;
- a strong legal basis for farmer organizations;
- secure and well specified water rights;
- investment to bring physical systems up to standard before transfer;
- a professional accounting and auditing system for transparency in financial management; and
- a “partnership culture” between the agency and farmer organizations.

Features of the process of transfer which they identify as contributing to the success include:

- involving farmers from the earliest stages;
- not expecting full cost recovery of capital and O&M, particularly in initial stages;
- empowering farmers to negotiate with the agency;
- using agency and farmer contracts to specify rights and obligations of each side;
- training agency personnel to improve management and human relations skills; and
- continuing agency activities in which they have a comparative advantage.

To construct or rehabilitate a project without commitment of time and resources from farmers forgoes a valuable opportunity to build a participation partnership with those people most directly interested in the success of the project. To proceed with physical works in advance of farmer involvement may appear to keep projects proceeding smoothly, but it is likely to yield less sustainable projects over time.
**Agency Interaction**

To be successful, farmer organizations must interact with government agencies at some level. An open, constructive relationship on both sides is a hallmark of successful participatory programs, but it often requires considerable time and effort to build.

**Stages of Interaction**

The organizational plan should allow for farmer organizations to shoulder responsibility commensurate with the level of organization already achieved. Technical training and supervision should be provided to the organization and its leadership until the project is satisfied that the farmers have the capacity to carry out tasks. Turnover of responsibility should be the result of mutual satisfaction and should allow for a commissioning period during which design or construction problems are identified and corrected. Uniform rules for turnover should be established throughout the project and supported by government regulation. "Special deals," such as engineers performing services for individuals, should be replaced by operations through normal communications channels.

Fixed "patterns of action" are means of establishing communications between the farmers and government staff. They provide a meeting ground and an area of mutual interest in which the goals of each group can be established and activities can be carried out jointly. These patterns serve to forward group activities and to mark the attainment of certain goals, permitting groups to build confidence in each other while minimizing the anxiety caused by prior interactions.

Joint activities, such as tertiary design or maintenance assessments, should be carried out at agreed upon times with representatives from both sides utilizing set activities already established as part of the project design. A good example of a joint activity is the "walk through" in which representatives of both the farmers and the technical services physically go through a system together to determine whether rehabilitation or maintenance must be carried out and, if so, who will take responsibility for completing the work. Another example is participatory design, in which members of farmer groups and technical staff walk together over a previously determined layout to decide on modifications. Such systems can be modified as necessary with agreement from both parties. Farmer organizers should be present at these meetings. Great attention should be paid to the details of agreements and designs and to making written records of these activities.
Growing experience with farmer participation in irrigation systems has taught experienced practitioners that the only hard and fast rule is that there are no fixed formulas for participation. Participatory operations must be treated as a learning process, constantly monitored and adapted to local conditions and changing circumstances. In what follows, strategies and lessons on how to adapt and increase user participation are organized according to the project cycle.

Project Identification

Building participation into operations from the beginning is desirable because it allows more time for the approach to take hold and for other aspects of the project (from policy reforms to system design) to be made consistent with user participation (Brown and Nooter, 1992:43). This means engaging policymakers and agency staff in discussion of participation at the earliest stages and identifying the most receptive individuals as discussed above. As one task manager has noted, "participation is not a paragraph add on, nor a last minute injection. It has to be thought through carefully with the agency. If not, it means nothing."

Preparation

Participation should be integrated fully into project preparation from the beginning if at all possible. Indeed, if agency and user participation are not incorporated into priority selection and design, but only in later phases of implementation, a project is not truly a "participatory project" but a "project with participatory components" (NIACONSULT, 1993b).

Pilot Project

Unless a government is familiar with participatory methods and has implemented such programs before, it is useful to initiate participatory projects in pilot form or to start in one area and expand as the techniques prove themselves and government becomes confident of the approach. Because less is at stake in pilot projects than in main projects (even of equivalent size), building participatory approaches as pilot efforts in larger projects may make governments and the Bank more willing to try the approach. Completion of the pilot can be set up to trigger expanded efforts automatically. Fine tuning the expanded project plan should be the result of these "real life experiments" (Cernea, 1992). However, it is not always necessary to start new pilot projects. Before launching new programs, efforts should be made to look for participatory irrigation experiences sponsored by other donors, NGOs, or indigenous farmer organizations involved in irrigation management. Such programs also may be good sources of personnel with experience in participatory irrigation.

Working with Small-Scale Systems

Pilot projects, while valuable for demonstrating the possibilities of participation, are often marginalized because they are seen as too small or because they operate under specialized conditions. A stronger alternative in many countries is to develop participatory projects working with larger numbers of small-scale or community managed systems. These can be separate projects or components of larger projects, such as the Irrigation Line of Credit pilot project under the Mahakali II and
Bhairahawa-Lumbini III Irrigation Projects in Nepal. Although it cost nearly $20 million, this officially was termed a pilot project attached to another major project, because less would be at stake in a pilot than in a full project of equivalent size. In fact, the success of the participatory pilot program made the main Bhairahawa-Lumbini III project look more successful. Advantages of this approach are that:

- it builds on the experience small-scale systems usually have in farmer management;

- irrigation agencies generally have less involvement in small-scale systems and are therefore not as threatened by strengthened farmer organizations associated with them than they might be in large-scale systems; and

- it can cover a large irrigated area and test the participatory approach under varying conditions (though many conditions facilitating cooperation in small-scale and traditional systems may not apply in

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**Box 8**

**Nepal: Generating Demand from Farmers**

In Nepal, the Bank has applied participatory methods to assist private, farmer managed schemes directly as a vehicle to improve irrigation performance and reduce the financial burden of irrigation development and operation by government. A system using farmers associations to construct, rehabilitate, and improve small- and medium-scale hill irrigation and shallow tubewell subprojects is being carried out with funding under Mahakali II and Bhairahawa-Lumbini III through the Irrigation Line of Credit (ILC) pilot program. Technical assistance has been initially funded by UNDP through two closely linked Irrigation Sector Support Projects, one executed by the Bank and the other through the Asian Development Bank. ILC was large by pilot project standards, nearly $20 million in total, but as a pilot project it was flexible and could be modified to meet changing needs. It was designed as the first stage of a full-scale irrigation sector program based on farmer participation.

Considerable attention was given to developing processes and procedures for participation along with technical designs for systems. To participate in ILC, farmer groups were required to form a legal farmer irrigation association, contribute cash and labor for construction costs, and assume full O&M responsibility. In return, the associations received assistance in construction and provisional water rights. The organizations were structured to provide as much active participation and internal equity as possible by restricting membership and leadership to irrigators, requiring that the members appear in person before the district magistrate to enroll, and having the association president and project officer as signatories on the association bank account for capital expenditures.

ILC provided substantial benefits in both crop production and government budget savings, and resulted in substantial behavior changes in farmers and the department, as well as related legal, organizational and political reforms. The subprojects were demand driven, and farmers were given an opportunity to determine the upgrading of irrigation systems in return for sharing costs of rehabilitation and taking responsibility for O&M. The project resulted in better service to farmers at lower cost and showed the importance of Bank timing in the creation of alliances with key government officials to initiate and implement policy and institutional shifts through popular participation (Gautam and Reidinger, 1993).

Project developers recognized the need to demonstrate strong positive results within two years. This was achieved even though the first years of the project coincided with a period of political unrest and severe trade restrictions that made critical supplies unavailable. Even after the technical assistance ended and Bank involvement was reduced, the procedures and processes which were developed remained. Farmer participation is now difficult to “turn off” because its success has been demonstrated and there is demand for the project from the farmers’ side.
systems normally managed by agencies). Coordinating larger projects in many, often remote, locations presents difficulties, but it often forces the agency to rely more on local input in developing each subcomponent.

Sweeping Changes
As mentioned above, because government is more receptive to new approaches during crisis situations such as occurred in Mexico in the late 1980s, these may offer greater opportunities for building participatory operations provided adequate stability exists. In these situations, it may be possible to incorporate more sweeping changes, such as devolution of irrigation management on a larger scale, without a multiyear pilot project.

Enabling Conditions
The project preparation phase is also the appropriate time to begin discussing legislative reforms or other enabling conditions needed to legitimize and strengthen the incentives for user participation. In this regard, legal recognition of farmer organizations and reform of irrigation fees are most often the focus of attention. In Mexico, however, reforms of land and water laws to provide secure water rights and appropriate incentives for farmer investment, including ownership of the systems themselves and water conservation, are receiving more attention. Other enabling provisions to facilitate effective participation within WUAs include ensuring accountability to members and restructuring agencies to become financially autonomous. Legal requirements that the government transfer management of irrigation systems to farmers have been passed in Colombia and Mexico. In addition to new laws, the implementing regulations are critical to the effectiveness of these provisions.

Provisions for Participation
Whether a TM is developing pilot projects or changes in irrigation sector policy, assistance is needed to flesh out the nature and provisions for user participation and organization. These include:

- determining the nature of actual existing irrigation practices;
- eliciting participation by farmers in the identification and design of the project; and
- helping the borrower to develop a strategy for organizing and training farmers and establishing communications between farmers and the technical staff.

The experience of specialists is important, but circumstances in one country may dictate substantially what can be borrowed from experience gained in another. It is useful to combine international specialists who can bring ideas from a number of contexts with local experts and social scientists from universities or other institutions who can provide more intimate knowledge of the local situation. Good field level social research is essential. Unless there is sufficient time and money for longer-term research, rapid appraisal techniques should be used for assessment of current institutional practices, attitudes, women’s roles, and willingness to participate in O&M. However, institutional specialists must not work in a vacuum. They must link plans to the engineering, financing, and broader institutional structure of the project. All disciplines involved must have a core commitment to participation. As Cernea (1992) says, “The elaboration of a social methodology for bottom-up planning requires the joint effort and integrated skills of professional researchers and development practitioners; they must design the ‘software’ together.”

Consultancy Funds
Funds available to TMs in project preparation are usually scarce and need to be spread among engineering, environmental, economic, and other areas of expertise. This may leave little money for anthropological, sociological, organizational, or legal consultants to design participatory programs. Tapping UNDP, Population and Human Resources Development, trust funds, or other sources of technical assistance can make available the necessary funds (often as grants, which governments accept more readily). In the
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Philippines, a $20,000 grant from the Swedish International Development Agency allowed a local institutional consultant to work with the National Irrigation Authority Project Preparation Team to ensure farmer input in identifying priorities. In Nepal, $2.5 million in technical assistance from UNDP for the Irrigation Line of Credit proved extremely valuable not only in technical feasibility studies for component subprojects, but in direct technical assistance to fill gaps, promote “learning by doing,” and develop a program for training agency and farmer organization staff to implement the approach. The TM coordinated the technical assistance directly, which led to greater involvement between the Bank and the Irrigation Department and a more concerted effort to involve farmers. Unfortunately, procedures and schedules for such applications are time consuming and often discourage TMs from pursuing these resources. Another possibility is to use funds from a previous sectoral or project loan for preparation of follow-on participatory projects (for example, in the Philippines Irrigation Operation Support Project I and II).

**Appraisal**

One of the most important elements of success in a project is working with government to generate a clear policy on participation, a strategy for its introduction, and a detailed program for interaction as the project is implemented. In the appraisal phase, task managers need to ensure that all of these elements are adequate and workable, that the borrower is committed to the approach, and that necessary preconditions are in place.

**Conditionality**

While the scope for shaping the approach of the project is great during project preparation, formal leverage in specifying conditionality is greatest during the appraisal phase. If judiciously applied, such leverage can facilitate the development of an appropriate enabling environment for the success of the participatory approach, for example through changes in legislation, pricing structure, and agency reforms. Pressure from the Bank may be useful if governments are to implement politically unpopular but necessary reforms. However, conditions for signing, loan effectiveness, or disbursement will not in themselves lead to participatory projects without strong commitment from the policymakers and agency staff, as discussed above.

**Design for Participation**

The Bank has recognized the importance of physical design for project hardware in irrigation. Before a project can be approved, the detailed design of all major structures must be complete. A similar requirement would be valuable for the design of a project’s social components. This approach would require beginning social planning, selection, training, and fielding of organizers, consultations with farmers, and even the early phases of organization before the project was approved officially. A detailed plan of action for organization would be presented before the project was submitted, specifying the plans and schedules for establishment of user groups, structures, rights and obligations of farmer organizations, cost sharing and cost recovery mechanisms, support to communities in managing funds, and patterns of action to carry the program through its developmental stages.

In Nepal, early emphasis on developing clear procedures for participation paid important dividends. Not only did these processes produce better results in the project, once they were established within the irrigation agency and known to the farmers they became the standard operating procedure and continued beyond the phase of project technical assistance and heavy Bank involvement.

Hard questions should be asked about how each aspect will be implemented. If these are not answered, appraisal is not complete. However, this initial plan should be taken as tentative and modified as the project gains experience and dialogue with the farmers progresses.
**Farmer Input in Project Design**

For sustainability in irrigation projects, systems must be built that people want and are able to use. To do this, people must be consulted from the beginning of the project cycle. Interaction with farmers can come at many levels and in many forms, including information sharing, consultation, decisionmaking, and taking action. Normally, only the simplest forms of interaction (information sharing and consultation) are involved in these initial contacts. Since farmer irrigation organizations may not be available at this stage, it should be the task of the institutions specialist to hold some of these early consultations and ensure that farmer inputs come from a cross section of potential users. The litmus test for farmers is their willingness to pay at least part of the capital cost. This should be ascertained during appraisal and, where feasible, the principle of "no pay, no project" should be built in. To construct or rehabilitate a project without commitment of time and resources from farmers forgoes a valuable opportunity to build participation. To proceed with physical works in advance of farmer involvement may appear to keep projects proceeding smoothly, but it is likely to yield less sustainable projects over time.

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**Box 9**

**Nepal: Bank and Government Partnership for Participation**

The Bank has been integral to the development of the government’s participatory approach to irrigation in Nepal. Although Nepal has a long tradition of user participation in irrigation, the use of these concepts for formal irrigation development was introduced through the pilot USAID sponsored Irrigation Management Program. The first full-scale implementation of this approach was through the Bank sponsored Mahakali Irrigation II Project which utilized user groups for participatory design and layout of tertiaries as well as many phases of O&M within the system. In Mahakali, outlet groups and tertiary committees were formed through the use of association organizers and, by 1992, farmers had organized secondary and system wide apex level associations that were involved in water fee collection and other aspects of system regulation.

A version of this approach, modified for groundwater, was used in Bhairahawa-Lumbini III Project to promote the construction and operation of deep tubewells and to manage them after turnover. This project developed socioeconomic criteria for selection of projects including the formation of user groups, payments of shares of construction costs, and agreements to pay operating costs and to operate and maintain projects. Earlier phases of the project lacked the demand for farmer organization and turnover which is now being carried out, *de facto*, using canal lining as a *quid pro quo*. Not surprisingly, a marked improvement in water use and maintenance was evident soon after turnover took place. Legal recognition has been established for user groups and the registration process will soon be underway.

The Nepalese projects adopted many of the features of projects in the Philippines, including:

- increased participation of farmers in key decisions and in planning and development of the physical systems;
- development of cost recovery mechanisms which instilled in farmers more responsibility and a sense of collective ownership of systems;
- a well trained organization development unit able to live in the field and work intensively with farmers to help them form strong organizations; and
- the development of mechanisms for a learning process which allow for gradual refinement of methods and procedures.

The success of the participatory approach in these two projects has led the Nepalese to adapt the approach to two additional agency managed Bank projects, Narayani III and Sunsari-Morang II, although unfortunately this took place quite late in their project cycle.
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Supervision

Continued Involvement

To be sustainable, participatory projects must be treated as a continuous learning process by Bank TMs, agency staff, and farmers. One-shot efforts, no matter how well designed, will not ensure sustainable institutions. The supervision phase is necessary to adapt plans to changing conditions, and often requires intensive guidance and dealing with practical problems.

A plan for organizational development must be flexible should changes be required in the chosen strategy. This requires follow-up refresher training for organizers and hiring of a coordinator who can determine when program changes are necessary, make appropriate modifications, and retrain and reassign field level staff. Carefully written records always should be kept of organization development activities and results at all levels.

Where to Start

From a pragmatic standpoint, it is useful to begin implementing participatory approaches where they have the greatest likelihood of success. On one hand, this may mean transferring management to farmers of the systems in the best financial condition rather than in the poorest areas, where the additional costs to farmers may be too great. On the other hand, farmers’ interest in taking over management may be greatest in systems where problems with agency management are most apparent.

Adding Participation During Implementation

Though participation should be built into projects from the beginning, the supervision phase is not too late to introduce participation. In Turkey, for example, project difficulties involved slow disbursements and failure to meet conditions for adequate O&M cost recovery. These provided an opportunity to restructure the project to include more farmer management. As previously noted, crisis situations provide opportunities to build participation at a time when the government is often relatively receptive to new approaches. Once participatory approaches are established in a country, other irrigation projects may be retrofitted to make them more participatory, as was done in the Mahakali project in Nepal.

Enforcing Conditionality

This is more difficult once the loan has been signed and the project is underway. Suspending disbursements is very difficult because of internal Bank pressures for smooth project execution and political repercussions from the borrower. Task managers therefore must depend on the commitment of policymakers and agency staff to the participatory program.

Using Leverage

There is one type of conditionality that, if built into the project at appraisal, can be applied during the supervision period and has proved very useful in demonstrating the importance of a commitment to participatory approaches. This involves a requirement that disbursements for particular project components (such as individual irrigation districts or systems) be conditional upon meeting agreed targets (such as for certain levels of O&M cost recovery or progress toward farmer management). Payments or suspension are triggered automatically by achievement or failure to achieve these targets. An advantage of this approach is that it binds both Bank and borrower to a commitment to follow through on agreed upon objectives, even if the TM changes. Because suspensions affect only portions of the project, the political repercussions are not as great. At the same time, suspension of one component shows the importance of meeting objectives for others. This was found in Colombia where suspension of payments on one irrigation district for failure to turn management over to farmers led to redoubled efforts in other districts.
Following up on Participation

The attention TMs pay to the progress in user participation is crucial to demonstrate the seriousness of the Bank's commitment to participation. Otherwise, if only procurement, technical standards, or economic returns receive attention during supervision missions, borrowers will assume that participation is less important.

Personal Approaches of Task Managers

The approach taken by TMs in project preparation, appraisal, and supervision also sets important examples for participation. This includes spending time in the field. For example, Bank staff may meet with farmers alone, rather than only with agency staff, and in joint meetings they may at times sit with farmers. Members of the mission who listen to and involve policymakers, agency staff, and other stakeholders can similarly demonstrate commitment to participation throughout the project. The key words for TMs engaged in participatory projects are "collegial" and "catalytic," not "coercive" or "confrontive."

Evaluation

Appropriate Evaluation Methodologies

These are needed if the objective of increasing user participation is to receive the same weight as technical performance, economic rate of return, and cost recovery objectives. Without these appropriate methods, while the effort that has gone into building participation may improve technical performance, it will not appear directly in the evaluation of the project.

Indicators of Participation

Participation objectives and indicators of success are often not clearly specified. While those involved may have a good sense of whether or not projects are truly participatory, this can be difficult to translate into data which external evaluators can use. Specifying clear indicators and ensuring that the necessary information is collected on a regular basis can prove useful in focusing attention on participation during project evaluation. Indicators also provide useful information on progress during project implementation.

The indicators of farmer participation that have been most commonly used are:

- number of organizations registered;
- farmers' contributions or fee collection rates; and
- number of systems transferred to farmer management.

These indicators are quantifiable and the data they require are not too great. How well they capture real participation depends on the context. While the registration of "paper organizations" may mean little in some situations (for example, in Pakistan's WUAs), in Nepal the registration of an association and signing of an agreement to take over full O&M could only happen after a substantial commitment of time and money on the part of the farmers and the agency. Similarly, fee collection rates by farmer associations may be a good indicator of organizational strength and satisfaction, but government fee collection rates may reflect either farmer satisfaction with the system or strength of government enforcement.

Transfer of management to farmers is one of the strongest indicators of increased user participation (as, for example, in Mexico).

Detailed Indicators

More detailed and process oriented indicators include whether farmer organizations have met, who attended meetings (among farmers and with agency staff), whether records of meetings and financial transactions are kept, the frequency and quality of maintenance work, and the proportion of farmers who can identify association leaders or representatives. These require more information and time to collect, and therefore may only be feasible on a
subsampel of project areas. It is therefore critical that the sample of subsystems and farmers be truly random and not influenced by project authorities. Contracting local universities or research organizations for such work is appropriate, especially where Bank staff cannot move independently nor speak with farmers without a translator.

**Indicators for Agencies**

Indicators can be used to evaluate whether agencies are becoming more service oriented and receptive to user participation. Logs of farmers' complaints are probably not a good indicator, for farmers may complain more as they become more involved in management and their expectations are raised. Tracking the number of meetings with farmers has similar shortcomings, but staff familiarity with the names and problems of the farmers is a useful indicator. Farmers' formal evaluations of agency staff, indeed even the existence of mechanisms for such evaluations, are signs of participatory agencies. If agency revenues, farmers' payments, and service levels are linked structurally (as in financially autonomous agencies), fee collection rates are useful indicators. Without such a linkage, the Bank's traditional preoccupation with cost recovery linked levels as an indicator of sustainability will not capture the real sustainability of projects which meet the real needs of users.
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