How can participation contribute to the sustainable management of irrigation and drainage systems for agriculture?

The Asian Development Bank (ADB) has recognized the importance of irrigation systems for increasing agricultural productivity and food security, alleviating poverty, and promoting inclusive economic growth among its developing member countries. It has also identified infrastructure as one of its core areas of operations; specifically, it will continue to support rural infrastructure development, particularly in irrigation and water management. ADB’s support to irrigation and water management is also guided and strengthened by its Water for All Policy, which calls for an integrated, cross-sectoral, and participatory approach to water management. This policy highlights participation as the centerpiece of any water service endeavors—excluding people who consume water from participation has tended to make solutions to sustainability elusive.

Participation is defined as a process through which stakeholders influence and share control of development initiatives and of decisions and resources that affect them. Thus, participation requires more than just disseminating information and giving farmers government-specified roles in projects. Participation in irrigation management involves a larger role for farmers, water groups, and other stakeholders. It may range from offering information and opinions during consultations, to fully enabling farmers to act as principal decision makers in all or most project activities. There have been increasing efforts to use participation in various forms to improve the quality, effectiveness, and sustainability of irrigation systems. This makes it important to learn what has and has not been achieved in efforts to improve participation in irrigation management.

This synthesis highlights lessons from evaluations of ADB-supported irrigation and drainage projects, with a focus on participatory irrigation management.

Asia’s population is expected to reach 5 billion by 2050, with an estimated 1.5 billion more people to share its land, water, and food resources. Meeting the region’s food demands will therefore require more efficient use of resources, including irrigation systems, to boost agricultural productivity. Looming climate change effects and declining water resources only complicate the task.

Policies promote participation. Many countries have aimed to establish appropriate and requisite policy frameworks for enhancing agricultural productivity through participatory irrigation management. In Viet Nam, for example, the 1998 decree on grassroots democratization provides strong underpinning for participatory planning and development, while in the Lao People’s Democratic Republic (Lao PDR), the transfer of irrigation management to farmers is prescribed by a national policy. In India, the government in Gujarat State declared a policy on participatory irrigation management calling for the participation of farmers in the planning, implementation, and management of medium and minor irrigation projects. Many other countries, such as Indonesia, Nepal and the Philippines, have national water policies adopting the same or similar principles of participatory irrigation management. Satisfactory outcomes are more likely to be attained when an implementing agency has a well-established participatory culture and when the agency’s general policy and legal environment support participation.

Participation is central to good governance. Good governance of community organizations is important in ensuring the participation of beneficiaries and affected groups and in preventing any dominant authority from taking
control of water resources. For example, situations where large landowners and certain ethnic groups dominate water users associations (WUA) to their advantage may not be conducive to participation. In the Second Irrigation Sector Project in Nepal, higher caste Brahmins and Chetri and landlords dominated WUA executive committees, such that the functioning of the WUAs resulted in uneven access to information and resources and disproportionate benefits in favor of large landholders and ethnic groups. The transparency and accountability that participation requires are likely to suffer in this situation. A democratically functioning WUA is necessary in socio-political environments characterized by caste and ethnic divisions and hierarchy.

**Stakeholder identification and assessment are a key foundation for participation.** Stakeholder analysis is fundamental to participation work at any level and provides an understanding of the interests of individuals, groups, and institutions that have something to win or lose from a project. When stakeholder interests are not addressed before making a commitment to a development project, problematic issues can surface during implementation, compromising implementation and operation. In Viet Nam’s Central Region Water Resources Sector Project, stakeholder analysis was done using a participatory rural appraisal method. It covered identification of all social groups (included or excluded) from planning, implementation, and maintenance of water resources management projects. The interests, needs, advantages, and constraints of all stakeholder groups were identified and assessed and information from the community profiling ensured that project design was fully inclusive, because the appraisal identified both potential direct and indirect beneficiaries.

**Participation enhances careful and appropriate planning.** Stakeholders have to be involved as early as possible, rather than in a residual activity after physical facilities are completed. The expected outputs of each stakeholder should be clearly identified and linked to the outputs of other stakeholders, which will facilitate participatory monitoring and meeting project targets. In the irrigation component of the Earthquake and Tsunami Emergency Support Project in Indonesia, joint walkthroughs and field inspections with the affected communities formed the basis for identification and selection of the main rehabilitation and reconstruction options. The continuous involvement and participation of local communities resulted in agreement on scheme rehabilitation and reconstruction requirements. In addition, farmers’ existing structures and traditional practices must be closely studied while designing irrigation facilities, and projects should consider such practices as much as possible. The Rajapur Irrigation Rehabilitation Project in Nepal successfully demonstrated that farmers’ participation can be easily solicited and augmented if the project and its components are planned and designed in response to farmers’ needs.

**Participation promotes ownership and responsibility.** Stakeholder ownership is one of the factors that spell the difference between project success and failure. During implementation, ownership is enhanced when farmers provide in-kind and voluntary labor support and co-share the cost of irrigation improvements, as in the case of the Farmers Managed Irrigation Systems Project in Indonesia. The quality of construction work undertaken by the farmers is considered better than works built by contractors, possibly because farmers better appreciate the value of the properly constructed works and participation in construction gives the farmers a sense of pride and ownership. Key lessons from the Farmers Managed Irrigation Systems Project in Indonesia identified that, as a matter of principle, farmers should be required to contribute to construction costs and that this requirement should be clearly stated at the outset and applied as a precondition for the selection of subprojects.

**The participatory process takes time.** Irrigation development through farmers’ participation is demanding and time-consuming. Yet implementation delays are sometimes attributed to a lack of participation, as in the Decentralized Irrigation Development and Management Sector Project in the Lao PDR. Although the project met its first-year targets, it did not achieve the desired level of participatory development due to the late mobilization of community development consultants. In the Community Managed Irrigation Project, also in the Lao PDR, although detailed design of the project was participatory, the level of participation was constrained by farmers’ low education and inability to read plans.

**The participatory approach to operations and maintenance (O&M) is a viable and effective option for sustaining irrigation projects.** With the recent emphasis on small- and medium-scale irrigation systems, a participatory
approach to O&M through farmer-managed irrigation schemes has been considered a viable and effective option in countries such as the Philippines and Nepal. Farmer managed irrigation schemes are considered more sustainable because they are generally small and they can have cohesive links with farmer beneficiaries. This approach to O&M should be considered in the project design and appropriate resources provided to enhance and promote participation.

WUAs can play a significant role in the effective project implementation and sustainability of irrigation projects. Aside from collecting water user fees for routine O&M, WUA roles can be broadened for social mobilization, repair and maintenance, and village-level agriculture extension services. In the Irrigation Management Transfer Project in Nepal, for example, farmers managed procurement, installation, and management of shallow tubewells on their own. After being given orientation on and exposure to service providers and suppliers, farmer groups were able to contact drillers and shallow tubewell suppliers, install shallow tubewells under their own direct supervision, and continue relationships for follow-up services.

Before WUAs take over responsibility for O&M, systems should be functional and able to deliver irrigation water to farmer's fields, with key structures rehabilitated and the canal network intact. This would also ensure the collection of irrigation service fees and the undertaking of routine O&M through local resource mobilization. Irrigation leaders and ordinary farmers both need training on the O&M of newly built structures, but improving the skills and awareness of ordinary farmers is even more important because they are directly involved in O&M of the canal systems. In the Rajapur Irrigation Rehabilitation Project in Nepal, this need was not realized and only the irrigation leaders were offered training. This appears to have caused the misuse and mishandling of the constructed facilities by ordinary farmers.

Private sector participation can help improve water delivery. One alternative to participatory irrigation management is to involve the private sector in publicly managed irrigation and drainage schemes. Often called public-private partnerships (PPP), these involve finding a viable ‘third party’ between farmers and governments. It could be a contracting firm or WUA turned into a private corporation, a farmers’ company, or a nongovernment organization. A part of the PPP, for example, could involve unbundling management of large irrigation canal systems into reservoirs, main canals, and distribution networks. PPPs could also be useful in mobilizing financing, implementing investment programs, and improving the water delivery service. In the Community Groundwater Irrigation Sector Project in Nepal, the private sector was involved in agricultural extension services, which included technology transfer and advisory work on farming and irrigation best practices. In Indonesia’s Central Java Groundwater Irrigation Development Project, the private sector was involved in the repair and maintenance of irrigation equipment. Country experiences in Mali and New Zealand also support the idea that the private sector can efficiently manage irrigation systems and collect water charges, even in the absence of formal WUAs.

Conclusion

Successful irrigation and drainage projects require participation by all stakeholders in planning, implementation, and O&M to create a sense of ownership of and consequent commitment to the project. This requires that project planning allows time for beneficiaries to participate in planning and influence decisions affecting their future. Policies that promote participation in irrigation projects are likely to have satisfactory outcomes. Having clear and specific procedures for policy implementation and establishing effective enforcement mechanisms is fundamentally important. Good governance in the context of transparency and accountability within community organizations, project implementing agencies, and line department staff is essential to participation.

Participatory irrigation management may generate more benefits, perform better, or generate greater positive impacts than other approaches under certain conditions. Conditions vary across irrigation systems, such as land and water distribution structures, farmers’ dependence on agriculture for household income, commitment of the leadership, support to newly created water organizations, and so on. Understanding these conditions in the various contexts and identifying key features of successful participatory irrigation management is essential to the success of future irrigation and drainage projects.
Learning Lessons is a synthesis of key evaluative lessons drawn from the experience of ADB operations and non-ADB sources. Lessons presented in this brief are not prescriptive, and users are advised to carefully review these lessons in the context of country, sector, and thematic conditions.

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