

The Water and Poverty Initiative

What We Can Learn and What We Must Do



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Printed in February 2003 as a working paper for the 3rd World Water Forum in Kyoto, Japan 16–23 March 2003. First published by the Asian Development Bank (ADB) in January 2004, ISBN 971-561-517-1, Publication Stock No. 120603 as part of the "Water for All" publication series under the Water Awareness Program. This publication was prepared by consultants for ADB under RETA 6093: Promoting Effective Water Management Policies and Practices. The findings, interpretations, and conclusions expressed in it do not necessarily represent the views of ADB or those of its member governments. ADB does not guarantee the accuracy of the data included in the publication and accepts no responsibility whatsoever for any consequences of their use.

Abbreviations

ADB	Asian Development Bank
AWARD	Association for Water and Rural Development
CD	compact disk
DFID	Department for International Development (United Kingdom)
IWRM	integrated water resources management
MDGs	Millennium Development Goals
MTEF	medium-term expenditure framework
NGO	nongovernment organization
OECD-DAC	Organisation for Economic Co-operation and Development - Development Assistance Committee
O&M	operation and maintenance
PRS	poverty reduction strategy
PRSP	poverty reduction strategy paper
SEWA	Self-Employed Women's Association
UNDP	United Nations Development Programme
WFG	water facilitator group
WPI	Water and Poverty Initiative
WSSD	World Summit on Sustainable Development
WUA	water users association

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What We Can Learn and What We Must Do

Introduction

This paper draws together the lessons learned from 30 “best practice” case study papers produced for the Water and Poverty Initiative.¹ The focus of these case studies is the link between water and poverty reduction.

Each seeks to demonstrate real examples of practical ways that the role of water in poverty reduction can be improved. None are comprehensive or complete, all mix success with elements that could be improved and all demonstrate clearly that water management alone is not enough: the sustainable reduction of poverty relies on a wide range of factors of which water is only one. Despite these caveats, the overview presented here clearly demonstrates that there are many practical and cost-effective ways in which we can make a difference. Improving different aspects of water management can and does have a direct and material impact on poverty.

In many cases, the initiatives presented here were received with great enthusiasm by the poor communities in which they were implemented. This in itself is the best judge of what we should be doing. Poor people are the hardest critics and have little time for actions that do not meet their needs, capabilities, or priorities. That we are able to present such a wide range of effective actions is important and encouraging. The analysis presented here provides a basis to build on.

Of course, the limited space that we have in this synthesis means that a great deal of detail and richness on individual case studies has had to be sacrificed. This richness can be found in the individual case study reports. In first instance the case study papers were coded along basic questions such as whose water security is enhanced, what water security problems the poor faced, how they coped, how they were organized, how they made use of new opportunities, which outside actors were involved, what they did, what the impacts of interventions were, and how sustainable the benefits are. This information was then analyzed to see which general ideas about water and poverty reduction were confirmed or challenged by the case studies and which new ideas seem promising and which new ideas have been challenged. In the process, remaining

¹ The Water and Poverty Initiative is a partnership of many leading international organizations, coordinated by the Asian Development Bank, intended to create a greater awareness for advocacy and the development of strategies to achieve the potential of water as a key element in poverty reduction.

challenges for the water sector as well as issues that require future research were identified.

The next step of the analysis is a move toward *action*. Here the analysis seeks to draw on the case study papers taking a "helicopter view." The outcome has then been structured along the lines of the six key action areas that have earlier been defined to improve water security for the poor, namely: pro-poor water governance; improved access to quality water services; pro-poor economic growth and livelihood improvement; community capacity building and empowerment; disaster prevention and mitigation; and management of the environment.

The paper broadly follows the pattern described above. Section 2 summarizes the facts and figures of the 30 case studies. Section 3 deals with the lessons learned, the next section with the recommendations for action, and section 5 concludes with a brief description of what may be needed to ensure that talk about action results in tangible improvements in the water security of the world's poor.

Basic Facts

The 30 case studies on which this analysis is based cover 20 countries and regions in Africa, Asia, and Micronesia. The cases vary considerably in more than one way. For instance, the smallest case contributor is the Republic of Kiribati, an island state in Micronesia. Its size is only 20% bigger than that of Singapore, and Kiribati has less than 100,000 inhabitants. Another case is from the People's Republic of China, 10,000 times as big and with a population of 1.28 billion. The case study from Jiangxi Province in eastern China involved around 40 million people.

Only one of the cases, that of the treadle pump, is at the stage where it is being widely replicated. Half of the case studies are experimental and the remaining cases are at a more advanced stage of development. Most cases are well established in the sense that they have been operational for several years and have stood the test of time. However, a few cases have been initiated only relatively recently and highlight how agencies that have been generally conservative in the past are taking on board participatory, poverty-focused, and holistic approaches to water resource development.

In just under half the number of cases, one or more government agencies are the key actors from outside the local community. In just under 30%, an NGO took the lead while joint Government-NGO action was reported in 10% of the cases, as was international funding agency initiative and commercial sector leadership. More than two thirds of the cases involved both poor men and women, while 20% focused on only women and 7% on only men.

Water management in rural areas dominates the case studies (85%) while interventions in urban areas are much fewer (15%). While the number of the poor is much higher in rural areas, the spread of the cases reflects the fact that poverty-focused water sector interventions in urban areas are fairly new phenomena.

Theme-wise, improved access to quality water services makes up the majority of cases (almost two out of five) followed by pro-poor economic growth and livelihood improvement (one in three). Fewer cases focus on the remaining themes,

namely management of the environment (11%), pro-poor water governance (9%), and community capacity building and empowerment (7%). Only one case focused on disaster prevention and mitigation. The above classification pertains to the main focus of the case study papers, but many of the case studies relate to more than one theme, albeit other themes are covered less extensively.

Lessons Learned

The WPI case studies papers refer to many lessons that have been learned from preceding interventions as well as from the cases themselves. In almost all of the cases, the information presented contextualizes the specifics of the case study to wider experiences in the field, meaning that the synthesis presented here reflects a much wider experience than just that of the 30 specific case studies. This section draws together the main lessons learned.

Conventional Wisdom Confirmed

Numerous case studies confirm that in schemes that do not specifically aim at reaching the poor, the relatively more prosperous sections of the community reap most of the benefits from water resources. In such schemes, the poor often only get what happens to trickle down or may be excluded from benefits altogether. In other words, a blanket, unfocused approach to enhanced water security is likely to benefit mostly those who need it least. For instance, the earlier watersheds conservation schemes in Andhra Pradesh, India, were generally effective at harvesting more rainwater, but the main beneficiaries of this were too often larger farmers on better land who were able to benefit from the subsequent improvements to the availability of groundwater irrigation. Any attempts to improve the water security of the poor must consequently focus on them and their needs in a more direct and effective manner. This is widely reflected in several case studies that were themselves intended to be more poverty-focused. That there was mixed success in this reflects the challenges that doing so presents. Again, the Andhra Pradesh experience illustrates this, with several iterations of changes to the watersheds development approach reflecting learning experiences that sought to be increasingly poverty-focused.

Abundant water resources do not automatically mean people have access. Nepal, for instance, has 2.3% of the world's freshwater resources, but only 0.4 % of the world's population. In spite of this, only 40% of Nepalese rural poor have access to safe drinking water and less than 20% to basic sanitation. The shift in development thinking away from the availability of natural resources in general toward the question who does, and who does not, have access to these resources is widely reflected in the case studies, but there are generally recognized problems with putting this principle into practice.

Analysis of the Poverty Reduction Strategy Papers (PRSPs) produced by a number of African countries suggests that in only a few of those PRSPs, water has been included as a key to poverty reduction. Furthermore, there is much emphasis on infrastructure, but relatively little on the necessary social and organizational support systems. This reflects the general idea that action on the ground lags years, if not decades, behind international developmental thinking and talk.

Conventional Wisdoms Challenged

In general, government agencies have a poor reputation when it comes to service delivery, particularly when it comes to ensuring that those services reach the poor. In some circles, it is fashionable to bemoan the chances of transforming such agencies. Several of these case studies indicate that government agencies can deliver expected outputs and are even able to reach the poor in an efficient and effective manner. One example is from the Municipality of Manila. Another is the Department of Water Supply and Sanitation in Nepal, where major changes to approaching service delivery has led to substantial improvements in the services reaching the poor. Thus, in spite of all the rhetoric against government agencies, there is hope!

This is increasingly recognized in project design, with several case studies that have not yet reached a stage where full evaluation would be possible, nevertheless containing capacity building of government agencies as a central element. For instance, the ADB program to provide improved water supply and sanitation services to six provincial towns in Papua New Guinea was redesigned to include institutional reform as a central element. Similarly, the watersheds program in Andhra Pradesh includes the restructuring of the role and capacities of district-level government agencies and the enhancement of the links between government and nongovernment institutions as core goals.

Many see natural disasters as just that—natural and therefore to some extent, unavoidable. Although there are few case studies that deal exclusively with natural disasters and their mitigation, many more refer to them in one way or another. What is clear is that the impact of natural trends and disasters on people and their livelihoods is determined to a large extent by man-made factors, with the poor hit first and hardest in all too many cases. Examples of these are social and infrastructural factors, as well as the relevance, efficiency, and timeliness of pre- and post disaster interventions by governments, NGOs, and the private sector. The capacity of people to cope is also of crucial importance. Interventions to reduce the vulnerability of poor people to natural hazards must target the poor more effectively and take into account all factors that create their vulnerability to these hazards.

There is a general perception that participatory projects require more time than top-down interventions and that they lead to lower levels of output. The case studies do not confirm these perceptions. While participation may initially take more time, this is usually more than made up for during construction because there are fewer conflicts and obstructions. As far as actual output is concerned, the initial number of units constructed may be less, but once those are established demand usually increases, ultimately resulting in a higher total output.

New Ideas Confirmed

The single most obvious idea confirmed in most, if not all the case study papers, is that water is a necessary, but on its own, insufficient precondition for poverty reduction. Poverty reduction is only possible if the poor have secure access to safe and sufficient water for domestic and productive purposes. However, the full poverty reduction impact of water will only be realized if the voice and

organizational capacity of local people and organizations is enhanced alongside increased access to appropriate technologies, credit, markets, etc. Poverty reduction also requires macroeconomic stability, security, and political backing to focus developments on the poor.

The water sector is as dynamic as the lives of people in development. Water management should therefore not be seen as static, but as an ongoing process in which changing people interact with water—itsself transient in nature—and an otherwise rapidly changing world. There are consequently no “final” solutions, but only step-wise improvements on the present situation. In due course, these improvements will turn out to be insufficient, requiring further enhancements. This observation confirms two trends in water sector projects. The first trend is to give people choices, such as in the type of water supply system or latrine they want to install, rather than go for the “one size fits all” approach. Secondly, this observation justifies the current stress on building capacity at all levels to manage water in an ongoing way. Technologies and infrastructure come and go, but water management capacity that is institutionalized is likely to stay and help tackle tomorrow’s challenges. The adaptive and incremental approach seen in several case studies shows that these characteristics can and are integrated into pro-poor water management. For instance, in Gujarat, India, Self-Employed Women’s Association (a local NGO) has developed an adaptive and demand-led approach to community-based water management through trial and error, where lessons learned by the community and the NGO were integrated into subsequent activities. Similarly, WaterAid has worked closely with local partners and communities to develop a demand-responsive approach for water supply provision in Niassa Province, Mozambique. In this case, the use of a range of media has catalyzed a dramatic growth of demand for water supply points, demand that is being met in a more flexible and locally appropriate manner.

In some cases, water resource problems are caused by gaps in the institutional framework or failings in governance conditions. An example is the lack of law and order and institutional weaknesses in the coastal zone in Bangladesh that has allowed the development of environmentally damaging and socially unacceptable exploitation of shrimp by a few powerful interests. While much more benign ways of producing shrimp are available, ways that have a major poverty reduction potential, these have in the past had no chance, due to these governance and institutional weaknesses. Similarly, the historical extreme vulnerability of coastal communities to natural disasters has reflected the weakness of mitigation and relief programs. Much of the dynamics behind the present process of coastal policy development is a response to these acknowledged weaknesses. That the WPI case study papers confirm the relevance of the wider institutional context of water and of poverty cannot be overstated.

The case studies also confirm that interventions in the water regime that benefit some, often have negative environmental and social impacts on others, often just as poor, living elsewhere. The most obvious case is of those living downstream from water sources held back for upstream use. The emphasis in environmental impact assessments to take into account upstream and downstream areas as well as people, and the wider calls for integrated river basin management are consequently well taken.

Lack of access and control over water resources is the major bottleneck for the poor in their efforts to improve their water security. Often, the local power structure prevents the poor from getting a better deal. In such cases, external assistance should not only support people in their coping strategies, but should also assist them in challenging the power structure. Lobbying on behalf of the poor at all levels is rightly included in more and more programs.

There is a growing understanding that privatization, if done according to the pro-poor criteria, can improve the water security of the poor. A number of case studies confirm that this is the case. In those cases, the government stipulated a pro-poor success criteria and relaxed stringent technical, institutional, and legal requirements. In some case studies, private commercial firms were able to deliver water services to the urban poor on a scale unseen under public management.

People have their own logic for doing or not doing things. Unless direct stakeholders get a chance to make up their own mind, and unless outside actors understand what they think and feel, external assistance may not be of much help. This is confirmed in many cases, (e.g., in some sanitation programs where people choose options not recommended by outside agencies and in irrigation where in parts of South Asia, many low income households have opted for the less expensive, lower quality but reliable treadle pump). Shah et al's (2003) characterization of the treadle pump as being "self-selected" by the poor is an important concept with wider applicability. People often need to start with something that is currently relevant, useful, and maintainable. Over time they can then move toward more capital and management intensive options. In other words, real decision-making power in the hands of the direct stakeholders is not a luxury, but a precondition, if water is to reduce poverty.

Quite a number of case studies confirm the general understanding that quick-fix solutions are unlikely to be sustainable. Ongoing involvement as well as participatory monitoring and evaluation is needed to identify problems that arise along the way in maintaining new approaches and solving unexpected problems. This inherent need favors linking water sector interventions to other, ongoing institutional arrangements, which in any case is necessary if water is to have a lasting impact on poverty reduction.

Contributions by direct stakeholders are now a common feature of water sector interventions. The case studies confirm that this is very useful to identify whether direct stakeholders are really interested in a particular intervention. However, the case studies also indicate that the level of contributions should be linked to the actual cost of operating and maintaining the particular scheme or technological option. Furthermore, it is helpful not to use the contribution for the actual investment, but to set the money aside in an operation and maintenance fund, under the control of the direct stakeholders. They can then annually top-up the amount spent that year and observe a direct link between their efforts and the continuation of the water services.

Case studies point out another issue related to contributions by direct stakeholders. For at least two reasons, there is a real danger that poorer communities will be unable to access such arrangements. First of all, the poor have limited skills in getting organized to deal with outside agencies. Secondly, the poorer strata of society are least able to pay the required contribution upfront.

Several case studies show ways to tackle these problems. The first is a strategic decision to give poverty reduction top priority and to measure project success in part by the number of poorer communities covered. Similarly, time and funds should be made available to assist the poor in becoming organized. The second bottleneck can be overcome by making arrangements for the initial contribution to be made in installments.

Some cases studies suggest that rehabilitating traditional systems, such as the Karez systems in Baluchistan, can go hand in hand with modern systems such as drip irrigation. While there are relatively few examples of such a marriage of the old and the new being planned beforehand, there are many examples worldwide of direct stakeholders happily combining the old and the new in innovative ways. Projects that recognize the major contribution that local knowledge can play tend to be more sustainable and have far greater “ownership” among local people.

Technical facilities, awareness and organization have to go hand-in-hand and be appropriately synchronized. One without the other is of little use. The current stress on the software side of water resources development runs the risk of the hardware side being given less importance or even forgotten. This is as bad, if not worse, than the previous single-minded focus on hardware. This is clearly a perspective that local communities share, among whom the objective is to gain improved access to water resources and services, which is often not possible without investments in infrastructure. Poor people in particular are willing to spend precious time in organizing and participating if they clearly see the benefits, which generally includes investments in hardware.

Changes in government agencies that lead to improvements in implementation are crucial to successful water resources development. The case studies suggest that poor implementation is the real bottleneck in most interventions by government agencies. Quite often the national policies, strategies, and plans are not that bad, but what actually happens at the grassroots level is a totally different story. Therefore, the current stress of government agencies on capacity building for being able to implement more bottom-up and participatory approaches, is well taken.

When designing water management or water supply facilities, it is necessary to look forward and include options that allow for change and growing use. The case studies suggest that there is a fine balance between doing what people need now and can afford to maintain, and ensuring that infrastructure has a reasonable life span. The solution seems to be designs that allow expansion and additional service provision by building on existing facilities.

Case studies confirm the usefulness of learning-by-doing and seeing for oneself. Both direct and indirect stakeholders, such as staff of government agencies, can be made enthusiastic by exposure visits to schemes that show what can be done. The use of direct stakeholders as “experience-experts” is a powerful way to change behavior.

The cases confirm that women are often more committed to local development than men, particularly concerning matters that have a direct impact on households and homesteads. Women are also well able to handle water-related matters including technical issues, O&M, collecting contributions, and conflict

resolution. The experiences of SEWA in Gujarat, India, where social restrictions on women have traditionally been very strong, demonstrate that placing women at the center of the planning and management of water investments is both effective in producing good investments and significant in creating a wider process of empowerment, confidence building, and organization among women that can lead to major changes to their standing in local society.

Most of these “best practice” case studies involve a number of actors as well as financial input from abroad. This should not come as a surprise as the various actors all have their own strengths and weaknesses. NGOs may have bright ideas and good contact at grassroots level, but often their coverage and financial capacity is limited. Government agencies have national coverage and may be able to influence policies, strategies, and even laws, but often have little idea of what would really benefit the poor. Even if they do, their lack of funds often constrains government agencies severely. By definition, the strength of funding agencies is that they have the capital that is necessary to improve human and physical capital. They can also fund top-level advice, but lack both the authority to decide on what a nation should do and the direct connection with the stakeholders. Internal donor procedures and political pressures are not always conducive to what is needed on the ground. Finally, research and other specialized institutions may have cutting-edge insights and theories, but are not equipped to put any of that into practice. The case studies strongly confirm the need for partnerships that marry the strengths of the various actors.

Where this does happen, the potential for major impacts upon poverty is enormous. Although many of the case studies that attempted this balanced partnership on a large scale were still in progress or too recent to categorically assess impacts, the available evidence provides the grounds for great optimism. For instance, the Rural Water Supply and Sanitation Project has already brought benefits in terms of health, time savings, community organization, and other ways to over 600,000 people in remote hill communities in Nepal. The Andhra Pradesh watersheds program is benefiting many hundreds of thousands of poor people in the drought prone areas of the state. The Soozhal Initiative in Tamil Nadu, India is bringing improved sanitation to tens of thousands of poor people. The IWMI paper on agricultural water and poverty linkages documents benefits in terms of improved income and food security in a number of major irrigation schemes where innovative and participatory approaches had been adopted. In these and other cases, the case studies demonstrate that substantial poverty impacts can and are being made through water management where the poor are empowered, investments are made in a sustainable manner, different stakeholders join together in effective partnerships, and representative as well as effective institutional framework is developed.

New Ideas Challenged

Some case study papers refer to the fact that improved water management normally also has a downside in that those who used to depend upon the resources to make a living through fishing or other forms of harvesting, or through supplying water, food, or other services, before the improvement, may lose out. This is particularly true where such groups are minority groups or where the livelihood activities are a sideline that more powerful sections of society do not

participate in. This is something not normally taken into account in the feasibility stage of projects. This should be done as all project affected persons (PAPs) have the right to be treated as such. Specific mitigation measures would be needed to help such PAPs diversify their livelihoods, but these are too often not included in project design.

Several cases suggest that both men and women must be involved in planning and design. Given the traditional involvement of men, many interventions now focus on women, some to the exclusion of men. Indications are that excluding men altogether is not the solution. Indeed doing so may be fatal to the chances of project success. Men will generally have a useful contribution to make. Furthermore, if excluded against their will and interest, they usually have ways and means to stay out of the picture but stay in control. Such behind the scenes arrangements are not helpful, nor transparent. In schemes wherein only women or only men are involved, success is less and sustainability, reduced. Projects should carefully consider the interests of both women and men, and involve them accordingly, ensuring active steps to improve equality, but not adopting an exclusionary approach that marginalizes any section of the local community.

Participation of direct stakeholders in design, planning implementation, or management is sometimes presented as a panacea to all problems. Such involvement is then assumed to automatically result in sustainability. The cases studies suggest that life is not as simple as that. Fifty years of government-led development have ingrained the widespread expectation in all strata of society that the government will take care of the necessary investments and also do the O&M. It is unlikely that half a century of top-down development can be changed overnight and therefore a long term, comprehensive, and consistent step-by-step approach is required to move toward sustainable water resources management. This is particularly true where, as is often the case, the original decision to make an investment is not made by the local community or where participation is introduced for the management and maintenance of existing infrastructure. In such cases, assigning responsibility to local people is seen (often rightly) as no more than government divesting itself of its responsibilities and “dumping” them on local people.

Normally, political stability is a prerequisite for development. Many case studies confirm that this is indeed needed. However, the ADB supported project in Mindanao suggests that even in a politically unstable situation, development can take place. As yet, there are too few case studies available to identify what the key factors for success were, but the case itself challenges the new idea that little can be done in a situation of instability. This is, of course, profoundly important, as such situations are where many poor people are found (including those impoverished by the instability) and where water security is at its worst. It may not be appropriate to apply “normal” criteria for judging success or failure in such cases, as any improvements and whatever questions raised about cost, sustainability, or participation, can be of great importance in helping people survive and sustain their livelihoods until more stable conditions emerge.

Research Questions Raised

In some countries, particularly in Africa, there is a lack of basic data on the water sector, in general, and the allocation of government and other funds, in particular.

Such data must be consistently collected on a national level to facilitate strategic decision-making concerning investments.

Research by WaterAid has highlighted the fact that in the PRSPs of many African nations, the potential role of water in poverty reduction is poorly represented. There is currently no overview of how much room the PRSPs of Asian nations give to the role of water in poverty reduction. This requires further research including follow-up as PRSPs are revised and updated. There is also a wider need to understand how water relates to national development strategies outside of the PRSP framework, including the need to revise such strategies where appropriate. For instance, in many countries, the concentration of agricultural policies on increasing output and achieving national food self-sufficiency has been a major factor behind the unsustainable exploitation of water resources for irrigation, with too often a negative impact upon the poor.

Even if water does get a more prominent role in PRSPs, that will not automatically lead to changes on the ground through new programs or investments that target improving the water security of the poor. The question is to what extent water-related goals in PRSPs are translated into budget allocations in the medium term expenditure frameworks (MTEFs) and the actual provision of those funds. Relatively little is known about this and research is needed to ensure transparency of the crucial links among policy, and plan.

At present, most water management interventions require direct stakeholders to organize so that they can be involved in all stages of the project cycle—from problem identification all the way through to O&M. In some communities, one finds a water supply and sanitation committee, an irrigation committee, and a body that looks after flood control and drainage issues. It is not clear whether this intervention-driven fragmentation of water management is the most appropriate or sustainable. It certainly runs against the principle of integrated water resources management that is widely accepted as the basis for more effective approaches to water management. Those convinced of the need for integrated water resource management would prefer institutional arrangements that cater to all water-related, or even natural resources related issues. Others object that there is insufficient local organizational capacity to move to such a broad-based organization. Also, some prefer giving new responsibilities to existing community based institutions, while others avoid such institutions because they believe such arrangements will not give the poor an adequate voice. Research is needed to identify the circumstances that favor one approach over the other.

One case study raises the question regarding what the key factors that make water resource development possible in situations of extreme vulnerability or instability are. There is no doubt that some of the poorest people, such as internally displaced people, refugees and people in areas of civil war, live in very unstable situations. Similarly, many poor communities have high exposure to the threat of natural disasters such as floods, droughts, or cyclones. Research should shed light on how the water security of these people can best be enhanced.

Research need to be put into the design and implementation of appropriate allocation mechanisms from the technical, institutional, and economic perspective, so as to ensure sustainable access to domestic water, both for the present and future generations. As part of this, there is a need to think about

new, more decentralized, systems for water collection and supply appropriate for the diverse range of uses found in communities. For instance, hundreds of thousands of new houses are being built for poor families in South Africa, in itself a major achievement, but not one of these has a system for collecting rainwater.

Research on affordable and environmentally sound methods of disposing sewage residue and industrial water from arsenic and fluoride removal equipment and plants is needed. The high concentration of biologically and chemically dangerous substances in such residues make them a much bigger threat than in their previously diluted state. There is increasing evidence on the extent and severity of the exposure of poor people in particular to these toxins, but as yet, few practical, affordable, or sustainable remedial systems have been developed.

Finally, cross-country research is needed to find out what the poverty reduction and environmental impacts of de-linking water rights from land rights are. Some research from India and South Africa suggest there is much to be gained from such a move, and indeed recent proposals for the reform of national watershed management guidelines in India include a proposal to delink land and groundwater rights. On the other hand, this would imply a change in long-standing and well-established rights, the implications of which are not well-understood.

Remaining Challenges

The lessons learned indicate many remaining challenges. However, three of these challenges stand out as being of particular importance for improving the water security of the poor and enhancing the contribution that water management can make to poverty reduction. The first challenge is the need for coordination and cooperation among key actors in the water sector. Among them, key actors have a wealth of experience, knowledge, and potential, but the fragmentation of their efforts means that the contribution of the water sector to poverty reduction is much below its potential. Key actors need to act together for water to have its maximum impact on the reduction of poverty. Integrated Water Resources Management is a potential framework for achieving this, but building partnerships must not be contingent upon such an approach being adopted and new action-oriented partnership arrangements are critical for improving the access of poor people to water.

The second remaining challenge is the scaling up of successful approaches. Here, more often than not, the bottleneck is the limited capacity of implementing agencies (be they governmental, nongovernmental or from the private sector) to understand and execute the new approaches. Ad hoc arrangements focusing on training a limited number of staff directly related to specific projects or programs has not been effective, let alone lead to sustainable change. A systematic, coherent, and longer-term capacity-building strategy is needed.

The third challenge is to ensure that the ongoing reforms of water sector institutions in many countries is focused on making sure that the water sector contributes its full potential to poverty reduction. Without ensuring this vital link between talk and action, the poor will see little or no benefit from the growing international consensus on water issues. A key to this is to place poverty

reduction at the heart of the reform process, and from this, to ensure that reforms lead to actions that are more directly targeted to the specific needs of the poor even where this is at the cost of other objectives.

Taken together, actions to address these challenges would provide a strong platform for building on the lessons learned from the case studies, disseminating the many aspects of water management that were successfully contributing to poverty reduction and mitigating the factors that acted against success in different places.

Recommendations for Action

This section takes the lessons learned from the field forward, relating them to the framework for action developed in the water and poverty initiative. The poor need more action, not talk. A two-track approach is needed to ensure that water becomes a major facilitator of poverty reduction. First of all, there must be action that will lead to quick improvements in the water security of the world's poorest people. Secondly, there must be longer term, comprehensive action that will lead to a more enabling environment for sustainable water resources development. Below are some practical suggestions as to how to develop such an approach in relation to the six key action areas for improving the water security of the poor identified in the water and poverty initiative thematic framework.²

Pro-Poor Water Governance

The single most important pro-poor water governance intervention is for governments, nongovernment organizations (NGOs), and funding agencies to put poverty reduction, in all its multidimensional aspects, at the top of the development agenda. Good governance requires accurate data on water availability, the nature of poverty, and relevant water-related government, NGO, and private sector interventions. In many countries, such information is unavailable, but it is crucial if interventions are to be focused on the poor. Governments should identify minimum data requirements and they should ensure that it is consistently collected, analyzed, and made public. The case studies clearly illustrate the need to effectively target the poor and to establish levels of service appropriate for their needs. For instance, the work of AWARD, an NGO, in the Bushbuckridge area of South Africa, demonstrates the clear livelihood benefits that the use of domestic water for productive activities creates. However, existing domestic water allocations often do not cater to such activities as they are based on norms for consumption only. A better picture of the levels of water needed for these productive uses is essential, if adequate allocations for them are to be made.

Actions to ensure greater equity through the inclusion of a strong gender perspective are increasingly recognized as essential, if good governance is to develop in the water sector. This is challenging, but several positive experiences were identified in the case studies, including Gujarat in India, Pakistani Punjab, and Nepal (Box 1). The need to approach gender as a core element of water management, rather than as something that is added on to existing approaches is a lesson that these case studies illustrate. This is particularly important for the effective targeting of water management to the specific needs and capabilities of

² See Soussan, J. 2003. *Poverty and Water Security*. Manila: ADB.

Box 1. Building Gender Responsive Water User Associations in Nepal

In Nepal, 80% of the population depends on agriculture, with women contributing 40% more labor than men. To improve irrigated agriculture, The Government, in 1992, initiated farmer participation in all projects. The level of success, however, has varied, mainly because of unequal participation among the users, particularly women. However, involving women in Water User Associations (WUAs) has been a challenge.

In the Irrigation Management Transfer Project, funded by ADB, a pilot project tested how gender concerns could be effectively addressed. At the start of the pilot project, women comprised 25% of the WUA and most felt they had been included simply to meet The Government's quota for women. The WUA created a Women's Facilitator Group (WFG) comprising mainly women leaders representing the various outlet canals. The WFG identified its own training needs, after which the WFG motivates women and men to work toward a more equitable distribution of water.

The pilot project was highly successful. The WFG assisted the WUA in

- amending the WUA constitution, allowing membership of wives, adult men, and female children;
- incorporating the WFG as an organ within the WUA hierarchies;
- increasing women's representation in the WUA to 60% within a year; and
- constructing an additional canal that increased the irrigated area by 50 ha.

From this pilot project the following main lessons can be learned.

- Efforts to improve gender responsiveness must be part of an overall process of institutional development so that men understand and support the changes taking place;
- Projects that advocate participatory processes need to plan with women, not around them.

the poor, as women make up a disproportionate amount of the poor and generally have needs, capabilities, and priorities that differ from those of men.

Legal and policy provisions as well as institutional reform are needed to ensure that the rights of poor people to access water resources are protected. This is true in all circumstances, but is particularly important where actions taken affect multiple stakeholders over a larger area, as this opens up the potential for conflict that are unlikely to be resolved by existing community regulatory systems. In such circumstances, any infrastructure development or changes to water accessibility must be accompanied by steps to ensure that the poor are properly represented. For instance, the paper by Hussein et al (2003) that examines agricultural water-poverty links in several Asian sites, establishes the importance of effective governance conditions for ensuring good poverty impacts in cases where this was found, such as in the Walawe River Basin in Sri Lanka, that have had positive and sustainable benefits for the poor in large irrigation schemes.

Cost recovery of water supply is necessary if that supply is to be sustainable, but needs to be based on fair, transparent, and legitimate cost recovery systems that recognize and protect the interests of the poor. Cost recovery has proven to be possible if water services are appropriate and reliable. The cost recovery process should start with poor communities deciding the level of services that they need and can afford to pay for. Secondly, tariffs should be staggered so that everyone has free access to the absolute minimum amount of water to maintain a healthy life, but additional use is progressively charged. The tariff should go up to the point where the richer users in fact pay in excess of the operational cost as well as the recovery of at least part of the investment in infrastructure. The excess income can then be used to subsidize the supply of water for basic needs.

There is a need to link and form alliances between the various sub-sectors in the water sector, such as irrigation, drinking water supply and sanitation, flood control

and drainage improvement, water retention, etc., so that a coherent approach can be taken. Institutional fragmentation, with different agencies having jurisdiction over these different aspects of water management and little or no coordination among them, is extremely common. There are a number of cases where active steps are being taken to address such problems and ensure that all aspects of water management for the poor are included in initiatives. These should cover all aspects of water resources and their relationship to poverty in forms that reflect the specifics of local circumstances. For instance, the development of coastal policies in Bangladesh is focused on the multiple vulnerabilities that coastal communities face, including the threat of natural disasters, the need to maintain the resource base, and the intention to support and extend livelihood opportunities that benefit the poor. The establishment of more effective governance conditions in the coastal areas is seen as a precondition for success.

The causal connection between different ways of improving access to water and poverty reduction and how these relate to the key issue of governance must be better researched and explained. An example is the impact of the privatization of water supply compared to the more common public provision. This attracts much attention, but little effective analysis. The case studies of private sector participation in major urban areas such as Manila, however, suggest that the poor can benefit substantially where effective regulatory regimes exist and both the private companies and the government agree on effective strategies to extend reliable supplies to the poor. The issue of private sector involvement illustrates the importance of not prejudging what good governance conditions are, but also of the importance of ensuring that good governance exists.

Improved Access to Quality Water Services

In many situations, the ultimate test of how effectively water management targets the poor can be measured in the improvements made to the water services that the poor receive. This is not just how many people are connected to water supplies or how much land is irrigated. The quality of the water provided, the reliability and cost of the services, and the extent to which all aspects of water needs are taken into account are of equal importance. Improved sanitation is also increasingly recognized as an essential, if much neglected service that has major poverty impacts.

The multiple benefits that improved services create even where they were not specifically designed as objectives has been dramatically demonstrated by WaterAid, who undertook an impact assessment of older water supply and sanitation projects in Ethiopia, Ghana, India, and Tanzania. The results were remarkable.

Even though these were mainly straightforward supply-oriented projects, they were based on strong community mobilization and empowerment at all stages. This was a key to the success and sustainability of the projects. Women and children in particular were the main beneficiaries. Although the initial justification was usually based on health objectives, the assessment identified a wide range of positive impacts that affected many dimensions of life.

- The most important benefit was often the time saved and reduction in fatigue from not having to travel to collect water, on average, 6 km away. This was

often translated into an increased number of working days, with direct income benefits.

- Many health benefits, including reduced medical costs, were identified, resulting in obviously reduced diarrhea and dysentery, but also in fewer worm infestations and less bilharzia, scabies, and other conditions.
- A wide range of income opportunities around the house emerged, including vegetable production, brewing, brick and pot making, and food stalls.
- There were multiplier effects throughout the local economy from the increased income and new economic activities as well as benefits that came from establishing supply and service points for water supply.
- Many new skills were learned, such as masonry and mechanics, management skills, negotiation skills, and leadership skills (including among poor women in traditionally male preserves).
- The local organizations set up for the water supply programs formed a basis for wider local mobilization, provided greater community coherence, and developed far greater levels of confidence among women and poorer marginalized households.
- Savings and credit groups provided a basis for the development of accessible credit facilities among the communities and assisted with the development of financial management skills.
- The new skills and confidence, better local organizations, and increased economic momentum all had impacts on the wider political and governance systems, including government policies.

AWARD found a similar story in the Bushbuckridge area of South Africa (Box 2), with water-dependent activities vital to the livelihoods of many poor people and improvements in access to reliable water services having the potential

Box 2. Allocating Water for Home-Based Productive Activities in Bushbuckridge, South Africa

The case study, based on in-depth surveys, highlights how water-dependent productive activities are vital to the livelihoods of many poor people, including female-headed households. Improvements in access to reliable water services therefore have the potential to make a major contribution to poverty reduction. The institutional context in South Africa is one of dynamic changes to water laws, policies, and institutional responsibilities, most of them pro-poor. Productive uses of domestic water are recognized in the water use category known as Schedule 1.³ While no license is required for this use, water-dependent productive activities that take place in the household have yet to be recognized in the planning and allocation processes. The importance of water for productive activities leads to a reassessment of the concept of water for basic needs. This has traditionally been seen as being about health and hygiene only. However, for many in South Africa and across the developing world, the definition should be extended to include water needs for livelihoods activities. The two key implications of this case are:

- Levels of domestic water needs are likely to be far higher than those assumed by conventional approaches to basic needs.
- Different households will have different needs, as the scale and nature of use of domestic water for productive activities varies greatly within any community. This means that current norms-based allocation systems (so many liters per capita per day) are a hindrance to poor households trying to work their way out of poverty.

³ In South Africa, under the National Water Act, Schedule 1 refers to the permissible use of water.

to make a major contribution to poverty reduction. This was in part due to the time-savings that improved supplies for all, allowing more time for other productive activities. Where water supplies were above the basic minimum, some families, and especially poor (often female-headed) households also benefited through the ability to operate small-scale enterprises such as hair salons, beer brewing, brick making, bakeries, or vegetable gardens. Communities with good water supplies made twice the income communities with limited water supplies did from such home-based productive activities.

In Andhra Pradesh, the successful implementation of watersheds management in some drought prone areas has led to substantial improvements in income, better health, reduced out-migration, and stronger social organizations, an experience mirrored by that of the communities in Gujarat where the NGO, SEWA has introduced similar schemes linked to income-generating activities and social organization for women.

The focus on meeting drinking and domestic water needs must consequently be expanded to cover homestead-based income generating activities that are crucial for poverty reduction (vegetable gardens, livestock rearing, mini fish ponds, etc.). The current minimal per capita water consumption needs must be increased to cover these productive uses of water without which there is little scope for livelihood improvements of the poor. At the same time, the actual supply should reflect the fact that the specific livelihood activities of some households justify a higher than standard supply. At the same time, care should be taken that productive use of water does not crowd out domestic water, as may be the case when ground water use for irrigation runs traditional water sources dry.

Most water sector interventions are implemented by government agencies. A major improvement in the quality of water services is possible if those agencies could ensure implementation of the existing plans up to the agreed standard. Capacity building in those agencies as well as increased supervision and demand for better facilities from organized direct stakeholders are necessary for better quality services to materialize in situations where government agencies are to continue to play a leading role in service provision. The story of the Punjab Rural Water Supply and Sanitation Project illustrates this vividly (see box 3), with the development of strong community organizations in which women play a leading role linked to effective reform in government institutions, dramatically improving service provision and leading to substantial benefits in health, production, and the empowerment of women who were often marginalized in traditional society. Similarly, the on-going program to improve water supply, sanitation, and environmental health in Kiribati is based on a process of capacity building and institutional reform in a small island community where the need for such change is clear.

Water services should not aim at a “final solution”, but instead at a step by step approach. Starting with the needs and existing capacity of the poor, the services should allow the expansion and upgrading toward internationally accepted standards of water and sanitation services. This again emphasizes the importance of empowering poor people and building their capacities as an integral part of the development of improved services. Many of the case studies demonstrate that this is both possible, and where it does happen, effective in improving the position of the poor in the long term. This, of course, places a burden upon

Box 3. Ladies First: Accessible Water for Entrepreneurial Women in the State of Punjab, Pakistan

In Punjab, about 60% of the 84 million residents live in some rural settlements where only 53% of the population has adequate water supply. Women and children bear the brunt of the lack of access to water. The Government of Pakistan has implemented the Punjab Rural Water Supply and Sanitation Project, funded by ADB. The project, using a community-based approach, has provided safe drinking water and drainage facilities to about 800,000 people.

The project used a community-based, demand-driven approach wherein the local people participated from planning through construction and eventually became responsible for 100% of O&M. Men and women formed community-based organizations to implement the water-related activities and promote other development and livelihood activities. Members of these organizations were trained in supervision of construction, as well as in O&M and fee collection. Community pressure and prompt disconnection of services for nonpayment made tariff collection easy.

The primary impact of the project has been to free up women and children from hard labor, carrying water for 2-6 hours per day. Also, people's income has gone up, as 45% of the time saved is spent on income generating activities. A survey found a more than 90% reduction in water-related diseases, an average increased household income of 24%, and as much as an 80% increase in the enrolment of school children.

The following main lessons can be learned from the Punjab Project:

- For sustainability, male and female community groups must be involved in all project stages;
- Subproject selection criteria should be disseminated to ensure transparency and application;
- Community willingness to pay for services is often considerably higher than expected;
- The local private sector can efficiently and cost-effectively respond to rural WATSAN schemes;
- More attention must be given to gender considerations, sanitation and hygiene as well as education;
- To ensure quality work and timely completion, all payment must be conditional on verification.

governments, funding agencies, and others to accept the need to avoid quick fix solutions and unrealistic targets and to engage with the poor as a long-term process. The results may be less dramatic in the immediate term, but are far ultimately more effective in producing real improvements to service provision.

The poor are almost always willing and able to pay for water services, as long as the services are relevant and secure. Such payments are necessary to improve supply and reduce misuse. Special arrangements, such as payment in weekly or monthly installments and at different rates for different types of usage, are necessary to allow the poor to access services. The Punjab Water Supply and Sanitation Project demonstrates that: poor communities are both willing and able to pay for both the initial investments and the running costs of improved water supply and sanitation where the costs are kept to reasonable levels; and where they are involved in all aspects of developing improved supplies, the services are reliable and provide good quality water.

Governments should create an institutional and regulatory environment in which water sector implementers are encouraged to be innovative. In many countries, this requires a rather different approach than the present one, which is more prescriptive than enabling. For instance, targets for quality water services have to shift from inputs to outcomes that specify the impact on poor households. This will stimulate innovation in the ways these outputs can be achieved.

Water quality, particularly of domestic water, must receive much more attention. The geological pollution of ground water with arsenic and fluorides in India, Bangladesh, and other countries, is an example of how a focus on quantities alone is insufficient, as is the widespread pollution from industry and other

Box 4. Gender and Economic Benefits from Domestic Water Supply in Semiarid Areas: A Case Study in Banaskantha District, Gujarat, Western India

Combining improved water-supply with micro-enterprise development has much potential to reduce poverty in semiarid areas. This case study, implemented by the Self-Employed Women's Association (SEWA) in Gujarat, India, combines the rehabilitation of the piped water supply and traditional water sources with a micro-enterprise development program for female entrepreneurs. Research revealed that the time released by improved water supply enables women entrepreneurs to make a substantial contribution to the household income. This income was especially useful at times of limited employment, such as during droughts. In addition, gender relations have changed in favor of these women.

The success of this case justifies multiplying the approach as well as the following policy changes:

- An integrated, holistic approach to rural development in which women influence the design and operation of the service so that it meets their domestic and economic requirements;
- Involving CBOs, NGOs, and other institutions with experience in improving water supply and supporting micro-enterprise development in the reformulation of current policies;
- Using the development of women's enterprises combined with the improvement of domestic water supply as a major entry point for rural poverty reduction programs;
- De-linking water and poverty by providing income-generating opportunities that depend less, or not at all on water, and are demand-driven;
- The government, SEWA, and other institutions to provide drought relief work in the form of craftwork at times when other economic opportunities are at their lowest;
- Gender programs to start addressing women's immediate gender needs and link these with the improvement of gender equality between, but also among the sexes (e.g., for women of different ages and positions in the family).

sources found in many low-income urban areas in particular. Improving service provision in the poorest urban areas, especially where many settlements are themselves illegal, is particularly challenging. The examples from Manila, where a large utility is extending services with private sector involvement, and Dhaka, where an NGO is actively and effectively working with poor communities to improve water supply and sanitation, show that there are different routes to achieving this goal with a significant level of success.

Pro-Poor Economic Growth and Livelihood Improvements

As detailed above, water is a necessary but on its own an insufficient precondition for poverty reduction. For instance, as many case studies have shown, adequate access to water supply and sanitation are essential to any form of sustainable development and can, as in the different WaterAid projects, create conditions where wider development can happen. However, if water is to be used for productive purposes and lead to poverty reduction, supporting facilities are needed such as credit, skills-training, and market linkages. Such increased production itself is necessary to make cost recovery viable. Overall national development strategies such as the PRSPs and the related MTEFs seem to be the most obvious instruments to ensure pro-poor economic growth and livelihood improvements, but there are concerns that the poor representation of water and other natural resource sectors may lead to missed opportunities from improvements to these sectors.

The scope for sustainable livelihoods improvement and economic development is illustrated by several case studies. The importance of the productive use of domestic water has already been referred to in connection with the AWARD case study in South Africa and the benefits accruing from successful watersheds development in Andhra Pradesh. If local level water management, linked to

Box 5. Livelihood Impacts of Small-Scale Irrigation: Treadle Pumps in the Indian Subcontinent

This case study draws lessons from International Development Enterprises' (IDE) 20-year experience with micro-irrigation, mainly through the treadle pump. Micro-irrigation is a simple, practical, and widely applicable technology to utilize the agricultural potential and enhance the income generating capacity of smallholders. Since the 1980's, over a million pumps were sold in Bangladesh while since the 1990's, in eastern India and the Nepal Terai, sales were over 200,000.

Treadle pumps and other forms of micro-irrigation contribute to achieving the Millennium Development Goal of halving the number of people surviving on less than \$1 a day. Micro-irrigation technologies have had a widespread poverty reduction impact. Smallholder families can increase their annual net income by an average of \$100 for an initial investment of about \$30. The innovative distribution of treadle pumps through the private sector at affordable and unsubsidized prices has resulted in widespread poverty reduction with minimal donor resources.

Micro-irrigation could potentially benefit up to 30 million smallholder households in the next 15 years. To achieve this, a focus on pro-poor economic growth and poverty reduction as a distinct goal is required. To fulfill this potential, IDE needs to broaden its approach in three areas. The first is to offer smallholders more choice than a single high-quality, high-price product. The second move needed is to loosen up IDE's tightly controlled marketing organization in India. Finally, IDE must also proactively devise a strategy to deal with the threat posed by subsidy schemes for mechanical pumps and to make best use of opportunities offered by persistent increases in the prices of fossil fuels and electricity.

specific income generation and growth activities takes place then the results can be spectacular, as illustrated by the experiences of communities in Gujarat involved with SEWA's programs (Box 4). Scaling up such successful local experiences is perhaps one of the main challenges to be faced if such successful experiences are to be built on and replicated.

Most of the poor buy their food, as they do not have enough land to produce food for all of their needs. Many poor people do grow some of their food on small plots of land or around their homestead, and many also gather foodstuff from common property resources, including fishing and fruit or other plants gathered from common lands. Low-cost and appropriate improvements to water provision for food production by the poor can yield spectacular results. For instance, IDE demonstrates that innovations such as the treadle pump and low-cost drip irrigation can yield an annual income of \$100 from a small plot of land for an initial investment of around \$30 (see box 5). As this case study argues: *"the distribution of micro-irrigation technologies through the private sector at affordable, sustainable, and unsubsidized prices has proven to be an effective and efficient means of achieving widespread impact with minimal donor resources"* (IDE 2002, page 1).

The poor also spend a very high proportion of their income on food. Stable and low food prices are therefore of crucial importance to the poor, which is in turn often contingent upon effective and reliable irrigation supplies. The studies by IWMI demonstrate that this is possible where the right combination of access to land, efficient infrastructure, and effective governance conditions are found. In such cases, yields can increase significantly and benefits can reach the poor who have too often been marginalized by major infrastructure developed without their needs in mind.

Community Capacity Building and Empowerment

A strong theme that ran through most of the case studies was the recognition of the importance of empowerment and capacity development at the community level. In most cases, this was something that was a central element to the approach

Box 6. Demand Response Approach in Practice: Why Sustainability Remains Elusive

WaterAid's experience with water supply policies suggests that the policy of Mozambique inspired by the Demand Response Approach (DRA) offers considerable advantages over the previous supply-driven approaches. Projects are being maintained better and communities have a greater sense of ownership of their water points. District and Provincial capacity to monitor and promote The Government's policy has been secured through a funding arrangement that creates security and confidence. Health improvements are possible if not yet proven, and new community management models are being developed and tested that seem to enhance community control. In addition, costs have come down, meaning more communities can be served than in the past.

WaterAid's experience therefore suggests that the DRA can lead to more sustainable projects, but that it is far from perfect at the theoretical and practical levels. Proponents of the DRA might therefore need to reconsider or fine-tune aspects of the DRA, considering the following possible modifications

- Demand needs to be generated by enhancing community trust through effective responses
- Financial support to districts and provinces must be long-term and sustained
- Communities must be allowed to choose technologies that suit them financially and socially
- Link capital cost contributions to sustainability issues by calculating what is required in cash to sustain each particular system annually and ask communities to contribute at least that
- Expecting communities to pay all operation, maintenance, and replacements costs is unrealistic, so instead, clarify what repairs are beyond the responsibility of the community
- Invest in the state and be sure that government has the finances and resources necessary to actually promote, monitor, supervise construction, and highlight best practices in the sector.

adopted; something that represents a radical break from what would have been found in the past (Box 6). There were varying degrees of success with this challenging issue and many different approaches were adopted, but overall, the case studies demonstrate that this is possible and does lead to significant improvements in the water security of the poor.

Empowerment of direct stakeholders requires that the time and effort they invest are matched by increases to their decision-making power. This is usually where participation runs into problems as indirect actors, such as implementing and donor agencies will have to yield some of their power if they are really committed to empowering local communities. There has been some reluctance to do so in many cases, but there are also clear signs of success in this in situations such as in Pakistani Punjab, Mozambique, and Gujarat, Tamil Nadu, and Andhra Pradesh in India (Box 7). In all of these cases, the change has emerged gradually, with a series of incremental steps through which decision-making authority has been strengthened at the community level and responsibilities for planning, financial management, and maintenance has been devolved from government agencies.

Empowerment and enhanced participation of the poor in decision-making should not just be confined to actions at the immediate community level. Examples of the effective representation and consultation of the ultimate target beneficiaries at more macro levels were also found. In Bangladesh, this included the process of policy formation, with extensive consultations among coastal communities being an integral part of the process through which the new coastal development policy is being formulated.

The devolution of authority needs to be complemented by capacity building at the community level so that poor people, who often lack skills and organizational

Box 7. Watershed Development in Andhra Pradesh, India

This case study of a hill district typifies the potential and the challenges of poverty focused watershed development in a semiarid, low resource, and high-risk environment. Under these conditions, agricultural growth and poverty reduction in India will have to take place. In Andhra Pradesh, The Government enthusiastically implements the program, both through the government system (85%) and thorough NGOs (15%). The success of Andhra Pradesh in watershed development is due a number of factors, such as: relatively good governance, translating political intentions into action, an environment for innovation and reform, active support of funding agencies and the involvement of NGOs with experience in working with the poor and in watershed development.

This case study shows that watershed development is a necessary—though on its own insufficient—precondition for poverty reduction in resource poor areas. What is needed is a “watershed-plus” approach that targets the poor and includes pro-poor complementary activities. The main features are that: local laborers implement the construction activities without involving middlemen, development of common property resources is given priority, the poor are assisted to form self-help and saving group, and the poor are assisted with other income generating activities.

The study highlights that policy level interventions are crucial, and the paper recommends

- continuing and expanding the process of experimenting with watershed development at grassroots level and ensuring that lessons learned are taken on board in policy design,
- developing and testing interventions that particularly benefit poor men and women, both through watershed development and complementary development activities,
- building up the capacity of the government agencies, NGOs, and Panchayati Raj institutions involved in watershed development and management,
- developing a package of poverty reduction focused policies, including the watershed policy, that are mutually complementary and reinforcing and
- minimizing inequities through more egalitarian institutional arrangements and legislation.

structure, are able to effectively carry out their new responsibilities. The case studies demonstrate clearly that all water sector interventions must include sufficient time and financial resources to enable direct stakeholders to organize and to voice their opinion. Project design, including disbursement and other schedules, should be flexible enough to allow direct stakeholders to be involved at their own speed and in ways that are appropriate to their capacities. Numerous examples of success in this field were found in the case studies, including that of ADB’s Community Health Project in Viet Nam where the conditions for success were not immediately apparent. Indeed, the importance of this issue is now reflected in project design, with almost all recent projects containing specific objectives and activities related to the development of skills and institutional capacities at the community level.

Capacity building and change should not be limited to communities, but should also cover implementing agencies. If these indirect stakeholders are to support direct stakeholders in demand-driven development, new attitudes, skills, procedures, monitoring and evaluation criteria, etc. are needed. As far as attitudes and skills of the staff are concerned, these should not depend on project-related, ad-hoc arrangements, but should instead be incorporated into the core training facilities. This should also cover the curricula of relevant secondary and higher education institutions. Change is particularly needed at the field level where the interaction between agencies and direct stakeholders takes place. Without such change, community capacity building would only lead to the poor becoming more frustrated. Again, successful examples of such changes in implementing agencies were found in the case studies.

Donors, too, need to change if they want to support a demand-driven development. Loan conditions and understandings need to be compatible with the local culture and values. Allowing more time for personal discussions, negotiations, and restructuring in the beginning may minimize delays. Planning will have to allow for lead time in which the software components of programs are developed, ahead of investments in infrastructure. Technical options will have to be diversified, leaving the actual choice to the direct stakeholders. Furthermore, criteria of progress and ultimate success will have to move away from the traditional stress on loan disbursement toward participation of the direct stakeholders, impact on poverty reduction, and sustainability of benefits.

Such changes in design procedures and appraisal criteria are not easy to accomplish, but are possible as several more recent ADB project designs demonstrate. ADB projects such as those in Kiribati, The Philippines, Pakistani Punjab, Nepal, Timor-Leste, and Uzbekistan contain features as core elements that would have been marginal at best or absent until recent times. Such commitment to new approaches is found in the approach of many other funding agencies, such as DFID supporting watersheds development in Andhra Pradesh, and The Netherlands and DFID supporting coastal development in Bangladesh. There is no room for complacency and all donor agencies would recognize the need to push such changes further, but the experiences from the case studies do suggest that there is openness to more poverty-focused and community-based approaches among funding agencies that was perhaps absent in the past.

Disaster Prevention and Mitigation

The importance of vulnerability to disasters as a core issue in the water security of poor people has been increasingly recognized in recent years, but is as yet not as fully integrated into actions as needed. In particular, there is still too often a failure to integrate disaster prevention and mitigation as a central element of water policies and programs. This is a critical issue for poor people, who are the most vulnerable to such hazards. There are serious gaps in our understanding of: how such hazards relate to the livelihoods of the poor, the types of coping and adaptation strategies that the poor adopt, and the threats that long-term increases to vulnerabilities that stem from both climate change and increased exposure as poor people occupy hazardous environments. Further research and analysis is needed on all of these issues.

Examples of successful approaches to reducing the vulnerabilities of the poor were limited in the case studies, but some positive experiences were found. This was most apparent in relation to drought hazards. The watersheds management programs in Andhra Pradesh and the SEWA program in Gujarat, both in India, provide examples of where improvements to rainwater harvesting and water management have been successful in mitigating at least some of the worst impacts of droughts that have hit these semiarid areas in recent years. Similarly, the rehabilitation of traditional water harvesting structures in Baluchistan, Pakistan demonstrates the potential of approaches that build on long-established methods for water management and conservation at the community level (see box 8). Such approaches have significantly improved the water security of poor people in these drought-prone areas and have great potential for replication elsewhere.

Box 8. Pro-Poor Water Harvesting Systems in Drought Prone Areas: A Case Study of Karez in Balochistan, Pakistan

This case deals with the relationship between drought and poverty in Balochistan. This area has been severely affected by droughts, as have similar areas in eastern Iran and southwestern Afghanistan. The paper outlines the effects of the drought and deals with the “karez,” an ancient water system that made survival and even prosperity possible in these perennially arid areas.

The impacts of drought on communities that depend on “karez” irrigation are analyzed in terms of impacts on crop productivity, livestock productivity, incomes, health and nutritional effects, poverty and vulnerability, empowerment and participation, sustainability of groundwater resources, etc. The paper then examines community and government level responses to water scarcity as well as voices from the community and outlines a strategy for integrated water resource management.

The strategy should aim at doing more with less water, for which the following is suggested

- Integrated water conservation strategies must be devised to enhance the benefits of available water supplies and to optimize water use efficiency once the rainfall resumes.
- Water conservation, through awareness raising and supporting policies, is the key to a stable and sustainable effort to ensure that the effects of future droughts are less devastating.
- Use water more efficiently by the introduction of water delivery mechanisms including modern irrigation application techniques (e.g., trickle, sprinkle, etc.).
- Research is needed on growing crops that do not require large amounts of water, hold the soil in place, and would be appropriate for subsistence and marketing in southern Balochistan.

All of these desirable actions require integration of social, scientific, and technological research and action. Governmental commitment (*i.e.* “political will,” the commitment of resources, and good governance) is also critical. Furthermore, local, regional, provincial, and Federal policies must be integrated with—or at least congruent with—each other. Finally, accurate meteorological data must be collected as such data is critically important for understanding longitudinal climatic trends and for predicting normal and abnormal rainfall patterns.

The coastal policy development in Bangladesh is specifically focused on the reduction of the vulnerability of poor people in an area where the threat of cyclones, floods, and in some areas, droughts, along with hazards such as salination and arsenic in groundwater, and the decline of ecosystems such as mangroves and wetlands, are key issues for the poor. It is an innovative approach that seeks to integrate the existing and effective disaster relief system into the overall process of coastal development. Actions to increase the resilience of coastal communities are central to the approach, with many of these actions focused on enhancing water security. Overall, while still under development, this case study demonstrates that disaster management and mitigation can be an integral part of enhancing the water security of poor and vulnerable people.

Management of the Environment

Environmental management must continue on the poverty agenda, as many poor people are dependent upon the integrity of the local resource base for their livelihoods. Down and upstream impacts of local water management has to be more consistently investigated, while national and even international law should be developed to cater to growing conflicts in this area. There is no doubt that these issues impact the poor, but successful examples of actions to address them were not a prominent feature of the case studies.

There were several case studies that sought to improve environmental health through improved water supply and sanitation programs in both urban and rural areas. The effects of poor sanitation upon the local environment can be

severe, with this particularly a concern in urban areas that have far higher concentrations of people. The successful sanitation programs found in areas such as Dhaka and Niassa Province, Mozambique demonstrate that actions to disseminate improved sanitation are possible, contributing to the health of both people and the environment, and assisting countries to meet their new international obligations to halve the proportion of people without access to improved sanitation by 2015.

There were a few cases where environmental conservation objectives were an explicit goal in the actions taken. For instance, the Kiribati Sanitation, Public Health, and Environment Improvement Project contained specific activities to reduce solid waste pollution, encourage water conservation and protection, and improve environmental health. Similarly, the Mountain-River-Lake Integrated Water Resources Development Program in Jiangxi, PRC contains specific objectives and activities related to soil conservation, ecosystems protection, and the reduction of pollution through integrated water resources management. Both of these projects are at a significant scale that covers in one case a whole island nation and in the other, a large area in a major country. In these examples, as in many areas of the world with a degraded environment, strengthening the ecological resource base and improving the carrying capacity of fragile environments requires broad-based watershed development. The poor in particular would benefit from such initiatives as they, in particular, live in such degraded areas. These cases demonstrate that environmental conservation to improve water security is not just a local issue. This message is reinforced by the example of wetlands conservation in Uganda (Box 9), where a successful partnership between an NGO (IUCN) and government agencies has been scaled up to cover sensitive wetland ecosystems (on which many poor people depend) in the entire country.

Box 9. Policies for Ecosystems Integrity: The Wetlands Sector Strategic Plan in Uganda

The Wetland Sector Strategic Plan—a collaboration between The Government of Uganda and IUCN supported by The Netherlands—was launched in early 2001 to build on the experiences gained during twelve years of the National Wetlands Program. Wetlands cover 13% of Uganda's territory, and many are of international biodiversity significance. The program is innovative in that wetlands management and poverty reduction are integrated into the approach through the funding of local communities to develop sustainable management initiatives that improve their livelihoods and maintain the integrity of the wetlands. These are based on locally developed management plans that identify areas where all exploitation is prohibited and areas where specific types of management (e.g., cultivation, fishing, livestock, and papyrus collection) are allowed.

The experiences of successful local pilots convinced the sometimes skeptical authorities that local communities were interested in and capable of sustainable management within agreed boundaries. These pilots have formed the basis for “scaling up” the approach to the national level and the integration of the principles of sustainable management into the national policy framework for these critical habitats. The Ugandan Constitution contains a clause stating that “wetlands should be held on trust by the government for the benefit of all the people”. The introduction of the Wetlands Sector Strategic Plan shows that this constitutional aspiration can be turned into robust policy that includes effective means through which it can be implemented. The Uganda experience demonstrates the importance of a sustained effort, supported over many years—both financially and technically—by external development partners.

The Way Forward

The case studies reviewed here, along with a wealth of other international experiences, show us that there are many actions that can and do improve the water security of the poor, despite the formidable challenges that actions in this area must confront. The keys to success are to understand and effectively target these specific needs and opportunities, to empower and build capacities of the poor, and to ensure that all actions are based on a secure basis of rights and entitlements for the poor.

The overriding challenge facing the modern world if we are to enhance the water security of the poor is for more coordination and cooperation among the key actors in the water sector to achieve these goals. Only when the key actors combine their wealth of experience, knowledge, and financial resources can the water sector contribute fully to poverty reduction through more effectively targeting the specific needs and potentials of poor people. This means that long-term partnerships are needed between direct stakeholders and outside agents. At the international level, action-oriented partnerships are needed among government agencies, nongovernment agencies, research institutes as well as other specialized organizations, and funding agencies.

These international partnerships should avoid two potential pitfalls. First of all such partnerships should avoid lengthy procedures and bureaucratic delays, and be focused on improving the water security of specific groups of poor people. Secondly, these partnerships should not be “owned” by funding agencies as this could lead national governments to disregard the water sector because one or more funding agencies are “taking care of it.” National commitment and engagement is critical for these partnerships to be successful.

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