

Private Sector Engagement in Rural Water Supply in the Mekong Region

Tapping the Market

Paving the Way for Diverse Approaches

The growing number of small-scale private enterprises providing water to villagers throughout Vietnam and Cambodia demonstrates the critical role the local private sector is playing in supplying water to the region. This Field Note outlines the key features of this expanding private sector and provides lessons for other countries seeking to develop alternative approaches to rural water supply.



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Executive Summary

There are a number of small-scale private enterprises providing water services to rural villages throughout Vietnam and Cambodia. These include well drillers and pump installers, manufacturers and sellers of rainwater jars and water filters, individuals who collect and transport water for sale, and small companies that pipe water directly to individual households. These enterprises and their customers have invested in this rapidly expanding water market using a variety of financing arrangements with little external assistance from the public sector. They are able to leverage funds, offer good quality services and products, and maintain accountability for any problems or issues that arise. This has led to high customer satisfaction and increasing sustainability. However, these enterprises face several challenges, which include making the link between clean water and good health to create further demand. Additionally, if this emerging private sector is to expand, government and donors must address key policy issues, including appropriate regulation and subsidies. This Field Note outlines the key characteristics of this growing market and provides lessons for other countries seeking to expand the role of small-scale enterprises in rural water supply.

Introduction

Financial constraints present a major challenge in scaling up the supply of rural water in the developing world. The World Commission on Water estimates that in order to achieve the Millennium Development Goal (MDG) of halving the number of people without access to clean water and sanitation, an annual investment of US\$180 billion is required. The current expenditure at an estimated US\$75 billion per year falls far short of this.¹

This paper presents experiences in Vietnam and Cambodia, where the private sector, with or without external assistance, has stepped into the provision of rural water through investing its own funds and leveraging funds from fee-paying consumers. The growth in private sector investment in rural water supply in Vietnam and Cambodia has occurred in response to consumer demand that has not been met by the public sector to date.

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distinct categories—either enterprises that sell water directly to consumers or those that provide equipment and know-how to consumers so that they may access water on their own. However, the development of the private sector in rural water supply in these countries has evolved differently:

- In **Cambodia**, a lack of sector regulation has, to some extent, provided an enabling environment for the development of thousands of small-scale, informal water supply enterprises. Pilot projects are now underway to scale up these enterprises to serve whole villages. This experience provides interesting lessons about financing arrangements, user willingness to pay, and consumer water use.
- In the **Mekong Delta Region of Vietnam**, the private sector is very active. In the southern province of Tien Giang, non-state water companies are already serving about 65 percent of the 1.6 million inhabitants. These include private investors with borrowed capital, cooperatives investing in and managing their own systems, and user groups that have raised capital themselves.
- In **central Vietnam**, where water is plentiful and cheap, households are accessing their own water at a cost comparable to that of piped schemes elsewhere. Local private enterprises are developing affordable technologies for consumers to use at home to access their own water. These solutions are generally cheaper than the systems offered by local government suppliers.

The comparative advantages of the private sector over the public sector in supplying water in rural areas include the ability to leverage funds, produce cost effective solutions, and offer demand-driven services. The paper suggests there is a promising future for private investment in the rural water sector, especially given the experiences to date and the supportive attitude of governments toward these for-profit operators. The paper provides some guidance on how private investors can be encouraged to enter and expand rural water supply and how they will be best served by donors and governments in the future.

The Scope and Nature of Private Sector Involvement

A growing private sector made up of tens of thousands of small-scale enterprises is developing the rural water market in Cambodia and Vietnam. Such enterprises include self-employed individuals who drill wells and install pumps, manufacturers and sellers of rainwater jars and water filters, individuals who collect and transport water to sell, and small “utility” companies that pipe water to individual households.

In some form, the private sector has probably been supplying water in Cambodia and Vietnam for hundreds of years but over the last decade private enterprises have grown rapidly due to an increasingly investment-friendly environment. The role of the private sector varies from place to place

depending on local circumstances, such as the availability of water, population density, and consumers’ incomes.

While it is difficult to estimate accurately the total annual investment by these enterprises or by end users, it is likely that the investment generated in the rural water sector through these initiatives far exceeds public investment. There is a need to appreciate, foster, and capitalize on this substantial but largely unrecognized investment.

There are two types of enterprises operating in Cambodia and Vietnam:

- **Technology supply enterprises** manufacture, distribute, sell, and install water storage and purification technologies, such as tubewells, pumps, rainwater containers, and water purifiers. These suppliers (except in the case of large well-drilling operators) are therefore

generally providing households with technologies that enable their purchasers to obtain free water.

- **Water supply enterprises** sell water. These enterprises include individual sellers who collect water, transport it using a motorcycle or a truck, and sell it door-to-door, as well as piped water system operators that provide pressurized metered water directly into individual homes. The latter are essentially small companies whose coverage ranges from several to thousands of customers.

Often these two types of enterprises operate in parallel. Frequently they both serve the same market, with consumers taking advantage of each of their distinctive services to accomplish a variety of end uses (see Box 1). Despite their size, they are able to earn a reasonable profit by providing services at the market rate and

Box 1: COMPLEX AND MULTI-FACETED DEMAND

One of the characteristics of rural households in Vietnam and Cambodia affecting water supply is their reliance on more than one source of water. For example, even where small piped systems are in operation, most consumers also harvest rainwater. In Cambodia, for example, many of the people who purchase treated piped water for their homes are also purchasing untreated water from door-to-door water sellers and harvesting rainwater to offset the cost of these two purchases.

In communes in Cambodia, metered water from a piped scheme costs from US\$0.30 to 0.50 per cubic meter, while untreated surface water can cost as much as US\$2.50 per cubic meter. This water is purchased for drinking and cooking purposes by families who can afford it. As it is untreated, they boil it prior to consumption. While rainwater is harvested for free and used for the same domestic purposes, it has a value commensurate with the cost of this purchased water.

Collecting water from open water sources, community pumps, and open wells, individual water sellers in rural Cambodia generally transport water in 200-liter water tanks on trailers pulled by motorcycles.

have shown themselves to be sustainable operators that are capable of expanding as they tailor their businesses to the shifting demands and preferences of their consumer base.

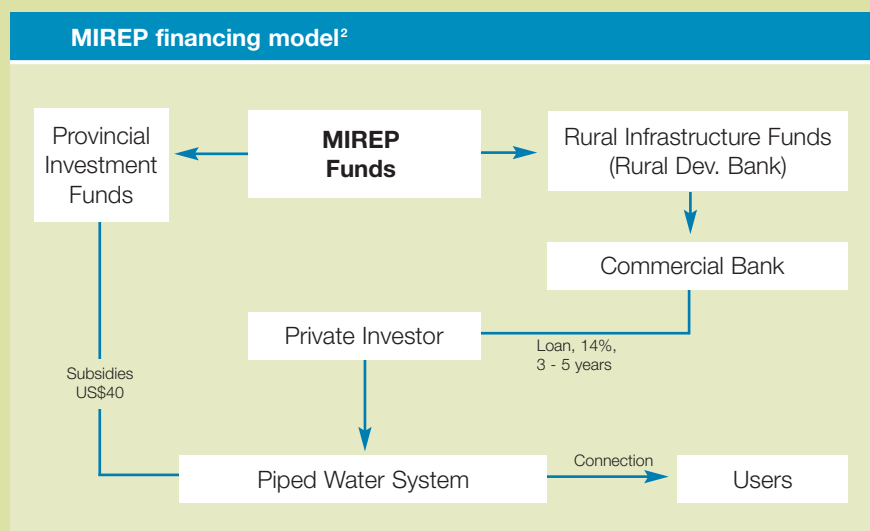
Private Water Suppliers in Rural Cambodia

In the unregulated rural water sector in Cambodia, the number of private sector water suppliers is expanding. They range from individual water collectors and sellers to family-run pump-and-pipe operators to larger enterprises that supply entire villages with water.

Collecting water from open water sources, community pumps, and open wells, individual water sellers in rural Cambodia generally transport water in 200-liter water tanks on trailers pulled by motorcycles. The cost of entry into this market is low, with the majority of these informal enterprises going into business using their own capital. Typically they sell water at about US\$2.50 per cubic meter (see Box 1).

Serving an identical market and operating alongside these individual water providers, small-scale pump-and-pipe operators serve densely populated areas in villages. They erect small water storage tanks of 2 to 6 cubic meters and supply untreated water through a piped network to individual households. The water may be drawn from rivers, wells, or ponds. Depending on the available water source and the cost to develop that source for extraction, a pump-and-pipe operator supplying water to 20 to 60 households might require between US\$1,000 and US\$8,000 of initial capital.

Box 2: THE MINI RESEAUX D'EAU POTABLE (MIREP) ASSISTANCE TO THE PRIVATE SECTOR IN CAMBODIA



The MIREP program provides three forms of assistance:

- **Institutional:** While there are currently no regulations governing the rural water supply in Cambodia, the MIREP program facilitates contracts between the local commune councils and private sector enterprises. As there is generally little trust in the commune councils, MIREP is able to arrange for the contract to be endorsed by the provincial governor, the most senior government official in the province, to promote investor confidence.
- **Technical:** The program provides technical support in the design and operational management of water supply stations.
- **Financial:** The program provides a subsidy that amounts to 30 percent of the total capital investment in the station, equivalent to an average of US\$40 per household. In addition it arranges for a subsidized credit through a commercial bank. The market interest rate is nearly 25 percent but the credit for these piped schemes is provided at 14 percent, achieved by guaranteeing some percentage of the loan risk for the borrowing bank. The program also negotiates with the bank to accept approximately 200 percent of the value of the loan as collateral rather than the 300 percent typical for rural investments.

The Mini Reseaux d'Eau Potable (MIREP) program³ has six ongoing projects in Cambodia to pilot village-level water supply systems financed and operated by local private sector enterprises. These projects aim to ensure that all of the 250 to 400 households in the target villages are able to access water. Total capital investment ranges from US\$17,000 to US\$66,000 for each village. In order to overcome the most critical constraints to private sector investment, MIREP provides institutional, financial, and technical support for the development of the piped water systems (see Box 2).

The MIREP program is working well. Investors are satisfied with the institutional arrangements, the balance of risks versus rewards, and their ongoing ability to collect water tariffs. The connection rates attained thus far are promising, and the unit cost for water is lower than that charged by the water sellers and informal pump-and-pipe operators that have been replaced.

Piped Water Systems in Tien Giang Province in Vietnam

In the Tien Giang Province of Vietnam access to ground water can be prohibitively expensive for individual households. As in Cambodia, nearly all households harvest rainwater and collect water from open water sources, such as ponds and canals and, to a lesser degree, rely on informal water sellers who collect, transport, and sell water door-to-door.

In the early 1990s private operators, in response to a demand and willingness to pay for water by households,

constructed a number of small piped water systems. Functioning in an unregulated environment and sourcing water mainly from tubewells, these private investors usually raised investment capital from consumers by charging a large up-front connection fee of US\$60 to US\$100. Consumers were not given a share in the ownership of the infrastructure but many were still willing to make this payment to connect into a piped system.

During this period alternative management arrangements also emerged, which included: (i) informal user groups supported by commune-level governments that managed and invested in their own systems; and (ii) cooperative-managed systems. In both arrangements, members invested approximately US\$60 each in a fund that was used to build the system. In 1998 a provincial government decree banned private investors from raising investment capital from their target consumer base but allowed user groups and cooperatives to continue doing so. Some private investors now raise capital by offering a reduced water tariff to users until their investment is repaid. This is an attractive proposition for private investors, as these businesses have inherently large up-front investments and relatively low operating expenditures (see Box 3).

The growth in systems managed by private investors, cooperatives, and user groups has resulted in a marked improvement in service coverage.⁴ Of the total population of 1.6 million people in the province, some 65 percent now have access to piped water. The current rate of development of new systems (70-80 per year) is so swift

Dan Salter



Piped water source and water tower in Cambodia

that it is now likely that the remaining 35 percent of the population will be served within the next three to four years.

Investment by private investors, user groups, and cooperatives now accounts for 61 percent of the total investment in rural water systems in the province (see Figure 1). The high level of investment by user groups (some 34 percent of the overall total) is due to a supportive socio-cultural and legislative context. In Vietnam, the social networks that extend to the village level provide users with confidence that group investments are secure. In addition, a system of monitoring the success of village leadership ensures that leaders are motivated and proactive in encouraging

³Mini Reseaux d'Eau Potable (MIREP) is a pilot program of the Ministry of Rural Development, implemented by Groupe de Recherche et d'Echanges Technologiques (GRET) and KOSAN Engineering, and financed by Syndicat des Eaux d'Ile de France (SEDIF) and the French Ministry of Foreign Affairs.

⁴Since the 1998 decree, the number of systems has grown significantly—user groups by 800 percent, cooperatives by 230 percent, and private investors by 13 percent. The government provides design support, offering systems that are tailored to the population and water source conditions. Of the current 415 systems in operation, 49 rely on public sector investment, 80 on private enterprises, 28 on cooperatives, and 258 on user groups.

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development (leaders are ranked on their achievements in relation to water supply coverage, latrine use, covered pathways, and other village-level improvements).

The successful development of piped water systems in the Tien Giang Province is an exception to the norm in the broader context of Vietnam. Furthermore, as with the Cambodian experience, there is evidence that consumers in Tien Giang Province are supplementing their piped water with rainwater that is often improperly stored. The absence of accompanying strategies to foster domestic hygiene (especially water handling and handwashing) means that the potential impact of improved water supply is seriously weakened.

Technology Supply Enterprises in Central Vietnam

In large areas of central Vietnam along the populated coastlines, acceptable quality groundwater is easily accessible in shallow

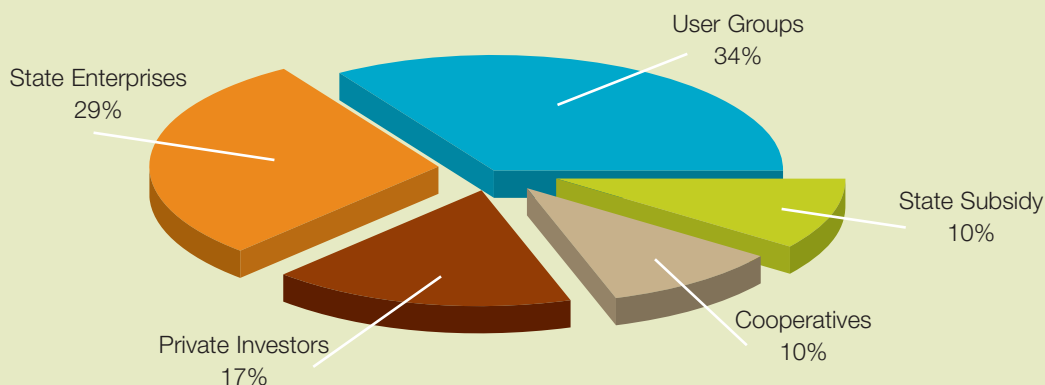
aquifers and replenished every year through runoff from the inland mountain ranges. In the early 1990s the government, with the support of UNICEF, developed the capacity at the provincial level to drill shallow tubewells and install pumps. These pumps were mostly donated to local communities through the project as upgrades to the uncovered open wells typically found in the area. These handpumps cost about US\$100 (to either donor or purchaser), and due to the fact that the project was managed at the provincial level, it often took five consecutive orders to get the pumps delivered to the countryside.

The UNICEF program set the performance standards for both the hardware and installation of the pumps and built capacity at the provincial level of those interested in establishing businesses developing water sources. In 1995 International Development Enterprises (IDE)⁵ launched a program to involve the private sector in rural water

supply by developing the capacity of private enterprises in three provinces to install pumps and provide after-sales service and maintenance. The program entailed building the capacity of providers to manufacture both handpumps and electric pumps, wholesale pump and pipe equipment, and drill wells and install pumps and pipework. In all, IDE supported the development of about 150 well drilling and pump installation enterprises, along with a corresponding manufacturer and product supply network.

The most critical intervention of this non-profit organization, however, was not capacity building but market development. Nearly 80 percent of the total program budget went to financing a targeted marketing campaign that stimulated demand for the services and technologies of these suppliers and promoted sanitary water handling, storage, and hand washing. Key to the success of this marketing strategy was that it spoke to the aspirations

Figure 1: Investment in piped schemes in Tien Giang Province, Vietnam



of different audiences—men, women, girls, and boys—for a better lifestyle.

The result was a rapid growth in the purchase of domestic handpumps and tubewells by consumers. As the project progressed, marketing support was gradually withdrawn and IDE supported the private sector enterprises to undertake their own promotional activities at a cost and level of effort appropriate to the scale of their businesses and profits.

The decentralization and privatization of the supply and drilling function reduced costs from approximately US\$100 to about US\$30. By the end of the program, a total of 64,000 pumps had been purchased in 26 districts of three provinces, enabling water access to some 320,000 people. The capital invested by users in these unsubsidized installations totaled US\$2.3 million.

The private sector enterprises quickly learned that their best promotional tool was consumer satisfaction, as most sales came through referrals. Unsurprisingly, installers and pump sellers greatly emphasized their efficient after-sales services and ongoing maintenance.

The Benefits of Private Sector Involvement in the Rural Water Supply

In the light of the cases studied, several advantages of private sector participation in the rural water sector have emerged:

Box 3: PRIVATE INVESTOR FINANCING OF A WATER SUPPLY SYSTEM IN TIEN GIANG PROVINCE, VIETNAM

A local water system owned and built by Mr. Nha supplies water to households in Long Vinh Commune, Tien Giang Province. Water is drawn from a canal and piped 1 kilometer to an 800-cubic-meter lined holding tank. From the tank, the water is pumped through a simple purification plant to a water tower.

Before constructing the tower, Mr. Nha designed and administered a household survey to establish the villagers' willingness to pay for purified piped water at the government ceiling (a rate of US\$0.25 per cubic meter for water extracted from open water sources). Having established the commercial viability with 120 households, he invested US\$14,000 of his own money toward the system. The demand grew rapidly once other households saw the benefits of the system but he did not have enough capital to extend the pipeline. He proposed to interested households that they pay him US\$20 to help finance the extension and in return he would provide them with water at a reduced rate (60 percent) until their US\$20 was paid off.

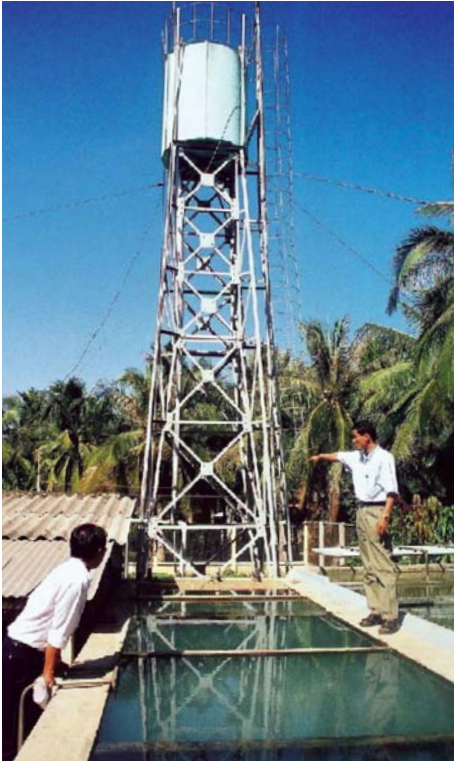
As a result, the number of household connections grew from 120 to 480. To further upgrade the system and install a larger pipeline to feed the station, Mr. Nha borrowed US\$9,000 from the bank at the rate of 0.85 percent per month. He anticipates that by the end of 2003 he will have 600 households connected, spread across an area of 6 square kilometers.

- **High ability to leverage funds:** It has been shown that a substantial part, if not all, of the funds required for infrastructure development can be raised through investments by enterprises and consumers' fees and contributions. In the case of the MIREP program in Cambodia, 70 percent of the funds for the development of the piped systems are raised jointly through investors and users (61 percent and 9 percent, respectively). In Tien Giang Province in southern Vietnam, the majority of schemes are now financed entirely by

the users while some private enterprises utilize a combination of private funds, bank loans, and advance payments that are discounted from customer water bills. The handpump network and well drilling services in central Vietnam also demonstrate the power of private sector and user investment in the water sector. There is no one formula for a successful model. Sustainability seems to depend on the local economy, the costs of borrowing capital, the water users' ability and willingness to pay, and the availability of investor capital.

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Mr. Nha's water tower

- **Demand-driven services:** Intrinsically focused on their customers, private enterprises are usually responsive and adaptable to consumers' needs. In contrast, centrally planned, subsidized programs often take decisions on behalf of their beneficiaries and provide what they deem best for them.
 - **Service quality:** The service quality of private enterprises is often superior to public entities, as such firms seek to ensure that their customers are satisfied. Even though they often operate as monopolies, piped water system operators, for example, still provide localized decision making, are less
- bureaucratic, and are more driven by the bottom line. This translates into better quality of service, as demonstrated in reduced waiting times for connections and better response times for leaks and repairs.
- **Greater accountability:** A high degree of accountability has been established through the financial involvement of users. In the MIREP program in Cambodia, user groups are made up of elected representatives, whereas in Vietnam users are often investors and operators are elected. These mechanisms drive a level of social and financial accountability that is likely to be higher than that found among salaried staff in state-run enterprises. Private capital is also likely to be invested with greater cost-consciousness than public sector funds, and thus the total capital investment made by the private sector in rural water supply is likely to be used more efficiently than the equivalent investment by the public sector. In the case of the supply enterprises developed in central Vietnam, cost reductions achieved by switching to competitive, decentralized distribution networks were dramatic—many falling to less than a third of the former price.
 - **Profitability leads to sustainability:** Interventions in rural water supply are clearly more sustainable when private entrepreneurs are making a profit and when end users are paying for services without any long-term external financial support.
- ## Limitations of Existing Private Sector Enterprises
- **Inability to reach the poor:** A key concern about the manner in which private enterprises are functioning is their apparent disinterest in reaching the poor. Driven by profit motives, many private sector enterprises implicitly marginalize the poor from accessing affordable water, raising the need for some form of regulation. In the urban context of Phnom Penh, Cambodia, for example, the privatized water utility is subject to government controls on pricing. The result is a socially designed, environmentally sound pricing structure to which the operating company must adhere—the less water households use, the less they have to pay, and the more water households use, the more they have to pay. Conversely, in Takeo Province in Vietnam, where there is no such regulatory control, some entities have set the pricing structure to create incentives for customers to consume more water in order to generate more profits. Thus, the less households use, the more they have to pay, and conversely, the more they use, the less they pay. This system inherently penalizes the poor for consuming less water. While regulation can be a good mechanism to achieve social goals, it must be cautiously administered so that the private entrepreneur can make a profit and stay in business.
 - **Low contribution to public health:** A second concern is that the private sector in Cambodia and Vietnam has



Handpumps are used for productive as well as domestic use in Vietnam

shown a limited capacity to serve broader public health goals. Rural water suppliers primarily respond to their customer's needs for cost and convenience. Most of their consumers are unaware of the health benefits associated with improved water quality. In an unregulated market and in situations where consumers do not demand water quality from suppliers, the private sector is not focused on providing it. Critical factors, such as how end users handle, store, and treat water, are therefore unlikely to be addressed within the existing market place. The cost of changing consumer habits to derive improvements in health cannot be borne by the private sector.

Facilitating the Growth of the Private Sector

Further in-depth research is required to assess how government, donors, and non-

governmental organizations can facilitate and enhance the development of the private sector, bearing in mind that there is not a one-size-fits-all approach. Circumstances vary greatly from place to place in relation to the demand and supply of water resources. Thus assessments need to look carefully at local conditions as well as the experiences of the small private service providers already in business.

Some of the crosscutting actions that should be considered in building a pro-private sector platform and in realizing optimal returns on public investments in the private sector provision of rural water are outlined below.

Support, Do Not Constrain Private Sector Activity

While government and donor agencies may be aware of the benefits of using the private sector to achieve better water access for the poor, they often constrain the way the sector develops and functions.

In Vietnam, for instance, donors gave away free or subsidized pumps, which resulted in market distortions. The provision of donated pumps temporarily halted demand as households waited to see if they would be given a pump for free or at a reduced price. Other negative consequences have resulted from the donor procedure of bulk purchasing. Purchasing centrally rather than through local networks has led to higher pump installation costs and little attention to ongoing maintenance and repair.

Clearly, the commitment and long-term success of a business has much to do with the risk an investor is willing to take. The MIREP program in Cambodia chose investors who had a demonstrated business track record and were willing to risk their personal funds. Enterprises that are spoon-fed by a supporting entity are often less committed, as they may have only decided to enter the water business because they can access public subsidies. In these instances, ownership is liable to be dictated by political connection rather than a demonstrated willingness or capability to enter a business. Where direct subsidies are deemed necessary, the challenge is to find mechanisms that still encourage the development of business.

Governments and donor agencies need to ensure their activities support rather than compete with or weaken private sector providers. While public, supply-driven interventions may result in increased supply of rural water in the short term, competition among such interventions may cause a net reduction in coverage in the long term.

Further in-depth research is required to assess how government, donors, and non-governmental organizations can facilitate and enhance the development of the private sector.

Develop the Demand for Clean Water

A handpump or pipe that provides safe water has limited health impact if users subsequently contaminate the water prior to consumption. Most users, however, are not aware of the linkages between good health and clean water. For example, less than 50 percent of the rural population of Cambodia is aware that unsafe water can transmit disease.⁶ In this context, the importance of creating demand for clean water cannot be overemphasized. If rural populations want to consume sanitized water, wash their hands after defecation, and build and use a sanitary latrine, critical steps in developing demand have been achieved. Creating demand among rural populations not only fuels growth in services to supply that demand, but also assists in developing consumer willingness to pay for those services. In creating demand, there is a clear rationale for linking marketing of the hardware and technical services with social marketing and health promotion strategies.

Promote Water for Wealth As Well As Health

Consumers purchase water or develop water resources because they attach to it some value (convenience, improved health, and taste, for instance). However, many service providers fail to realize that the greatest need for water is actually for productive purposes, such as irrigation or animal husbandry. Because these activities make money, water is not seen as an expense, but as a key contributor to household income. In Cambodia and

Vietnam, where families cultivate crops or keep animals at or near their homes, families need to have access to water both for drinking and other productive uses. There is an opportunity to capitalize on these accumulative and interlinked needs. The suppliers of handpumps in central Vietnam found sales to be much higher in areas where consumers used their water source for irrigation as well as household consumption. Other examples demonstrate that by linking water for drinking and irrigation needs it is possible to achieve 100 percent cost recovery of water source development even in areas where such development is comparatively more expensive.⁷

Understand the Impacts of Regulation

The lack of regulation in Cambodia and initially in Tien Giang Province in Vietnam likely aided the development of the small pump-and-pipe operator market. Without pricing and performance regulations, operators were able to function profitably and expand and invest. However, it is also likely that the growth of these enterprises would have ultimately diminished without the political support and licensing offered by a regulated environment.

After tighter regulations were introduced in Tien Giang Province, investments by cooperatives and user groups were favored over those made by private sector enterprises. This demonstrates the impact that regulation can have in determining the structure of the non-state sector. Better understanding of the

consequences of regulation—both positive and negative—is essential in order to develop an encouraging investment environment.

Support the Development of Private Sector Capacity

A key characteristic of private sector entrepreneurs is their technical knowledge, whether in the design and operation of piped water treatment systems or in the installation of pumps and drilling of wells. However this technical knowledge needs to be supplemented with the management skills and capacity needed to address water source development and effective water treatment.

The MIREP program in Cambodia and the IDE program in Vietnam provided capacity building to small-scale water suppliers. In Tien Giang Province in Vietnam, the government provides these services to piped scheme developers and operators at no official cost.

Conclusion: Critical Ingredients of Success

The overview of these three cases of private sector participation in the Mekong region suggests that there are a number of critical factors to success. These include:

- **A conducive and supportive policy environment.** Government support for the private sector is critical and forms



Rain water storage jars in a typical technology supply enterprise in Vietnam

the cornerstone of a pro-private sector platform. In both Cambodia and Vietnam there is formal recognition that the private sector can and will play a significant role in the supply of water in rural areas.

- **Carefully considered regulation.** Seen both as an opportunity and a constraint by private investors, government regulation has to protect investments while guarding against overregulation that inhibits profitability.

- **Pricing controls tailored to local contexts.** Issues of water pricing are critical though extremely complex to address. The costs of developing water resources, population density and distribution, and user ability to pay all vary from place to place and can have a dramatic effect on the break-even pricing of private interventions. Consequently, pricing controls need to be as decentralized as possible to attract investors to the rural water sector, especially in the more challenging markets in which there are higher costs of doing business.

- **Better access to long-term finance.**

Access to long-term credit is a critical factor in the creation and sustainability of private enterprises. Supplying water is inherently capital-intensive, and the borrowing costs are often prohibitive for small enterprises. Piped water supply businesses are especially sensitive to economies of scale, creating a difficult decision for investors that know that low investment means disproportionately higher operating costs and unit rates for water sold.

- **Skills development to enhance quality and sustainability.** While small-scale private enterprises have demonstrated their resourcefulness, they may be unlikely to meet standards regarding water resources or, in some cases, adequate water quality. They require support in this area but the cost of paying for such support services is likely to be prohibitive for small-scale providers.

- **The exploration of different operational models.** In the prevailing pro-private sector climate, a variety of operational models have emerged. These include:

- (i) Private investment and operation
- (ii) User-group investment and operation
- (iii) Cooperative investment and operation
- (iv) User investment with third party operation

It is too early to determine the relative effectiveness of these models, as they are relatively new and require further assessment. Clearly there is not an ideal model for application in all contexts.

- **Identification of essential government and donor functions.** In the final analysis, it is important to recall that the private sector is driven by a profit motive and its actions will reflect this in calculating the risks versus rewards of offering various services. Small-scale operators cannot afford nor are they skilled in social marketing or health promotion services. For improvements in water and sanitation services to become effective and sustainable, it may be necessary for the public sector to fund such functions that the private sector cannot provide. This will create demand while making investments more effective.

Vietnam and Cambodia offer instructive examples of the successful participation of the private sector in the supply of rural water to communities. The sooner governments and donors appreciate their role in enhancing the operating environment for private providers, the more effective the private sector will become in delivering water services to the poor.

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References

- World Bank. 2001. "Water—A Priority for Responsible Growth and Poverty Reduction: An Agenda for Investment and Policy Change." Washington, D.C.: The World Bank.
- Mahe, J.P. 2003. "MIREP." Presentation to the Ministry of Rural Development, Phnom Penh, January 29.
- Polak, P., Adhikari, D., Nanes, B., Salter, D., and Surywanshi, S. 2002. "Transforming Rural Water Access into Profitable Business Opportunities." Hanoi: International Development Enterprises.

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