

Water Pricing: Potential And Problems

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Abstract-

Water pricing policy has the potential to mitigate water scarcity. Because of its key role in managing water demand and augmenting water supply, water pricing is an important policy instrument for creating incentives to conserve and allocate water efficiently. By providing financial justification for developing additional supplies from conventional and unconventional sources, pricing policy can make more water available to users. Unfortunately, the water pricing policies being pursued in most countries fail to perform these vital roles due to faulty approaches and inappropriate institutions, both of which have their roots in political economy. The state provides many irrigation and domestic water supply systems at subsidized rates because doing so delivers public goods in the form of secure food supplies, public health, or legitimacy for the government. But low water charges and poor cost recovery lead to declining funds available for investment in water infrastructure, pool maintenance of existing systems, inefficient water allocation, and growing conflicts between those with and without access to water. Economic and political pressures stemming from these problems have promoted a renewed debate on water pricing policy.

Keywords: water pricing, marginal productivity, opportunity cost, externalities.

INTRODUCTION

ROLE OF WATER PRICING POLICY

Financially, water pricing is the main mechanism for cost recovery. Economically, it signals the scarcity value and opportunity cost of water and guides allocation decisions within and across water sub sectors. The financial function requires water

rates to cover the cost of supplying water to users. The supply cost is usually calculated by adding the operation and maintenance costs and the capital costs of constructing the system. But full cost recovery also requires water rates to reflect the long-term marginal cost (the cost of supplying an additional unit of water including the social cost of externalities).

The economic and allocative role of water pricing requires water rates to capture the scarcity value (or the marginal productivity/utility) and to equalize the opportunity costs (the value of water in its next best use) of the resource across uses. As water moves from least productive to most productive uses, places, and time points for efficient allocation, there will be a convergence of the scarcity value, opportunity cost, and long-term marginal cost of the resource. Unfortunately, such a convergence is rarely seen in practice. Unrealized opportunities still exist and water rates can be designed to capture at least a part of these opportunity costs. For this to occur, technology to store, transport, and deliver water is required, as are institutions to govern the development, allocation, and utilization of the resource.

MATERIAL AND METHODS

COST RECOVERY AND ECONOMIC INCENTIVES

The effectiveness of the financial and economic roles of water pricing policy depends on pricing methods, sectors, and countries. Water pricing may be either volumetric (based on the quantity of water used) or flat rate (based on area irrigated or households benefited). Volumetric pricing is conducive to creating incentives for efficient allocation and use, but the cost of establishing volumetric water delivery structures is often prohibitive, especially in large and spatially spread surface irrigation systems serving many smallholders. As a result, area-based fixed rates are dominant in most irrigation systems. However, volumetric water rates are widely used in many urban water supply systems.

Water rates are generally higher in countries with severe water scarcity (such as Algeria, Sudan, and Israel) and institutionally developed water economies (such as Australia and Israel). The industrial and power sectors within a country usually pay the highest water rates and receive a higher, more costly level of service throughout the year, as do domestic users. Agriculture pays the least, but also receives the lowest level of service. Within each sector and country, there can also be a wide variation in costs as domestic users buying water from private vendors pay much more than those connected to municipal systems and farmers receiving irrigation from public canals pay far less than those receiving irrigation from private wells.

Full cost recovery is legitimate both in economic and equity terms only if the users gain all the benefits from investment. On this account some argue that since food prices fall when irrigation increases food production. Consumers benefit, and that higher water rates for full cost recovery could adversely affect farmers' incomes. But this need not be the case because farmers benefit from irrigation partly from higher output and partly from increased land prices. In any case, the kind of full cost recovery being contemplated in many contexts does not cover even 10 percent of the additional income from irrigation, let alone the land value appreciation.

Water rates are still subsidized even in countries with a relatively mature water economy such as Australia, Israel, and the United States. This is rooted in the political economy of water, as powerful state and user interests often oppose charging the full cost of water. As a result, the gap is vast between the observed water rates and the ideal economic prices of water, as reflected by its scarcity value and opportunity cost. This illustrates the real magnitude of the task of designing pricing policies effective enough to play, simultaneously, to financial and economic roles.

RESULT AND DISCUSSION

THE INSTITUTIONAL DIMENSION

The policy debate has increasingly focused on the broader economic and allocative roles of water pricing. There is growing recognition that a realistic water pricing policy that ensures full cost recovery can be politically feasible only when it is designed to perform well in its economic and allocative roles. Also notable is the growing realization that institutional reforms to enhance the effectiveness of water pricing policy are indispensable. Pricing reform does not end with raising water rates. It also involves concurrent changes in pricing methods and approaches and the creation and strengthening of supportive institutions.

Volumetric pricing, though necessary, is not sufficient to ensure an effective economic role for water pricing. As long as the rates are below both supply cost and water productivity and there is no upper limit on individual water withdrawals, volumetric pricing per se can neither achieve full cost recovery nor solve the key incentive problem. For this purpose, volumetric pricing needs to be accompanied by price levels that are consistent with prevailing economic and resource realities. A system of transferable water quotas (rights) specifying upper limits for individual water withdrawals needs to be established for water markets to emerge that can, in turn, provide a basis for determining economically consistent water rates.

Pricing reform can be effective and practical only with the necessary institutional and technical conditions that enable cost recovery and allocative roles for water pricing policy. These institutions include an independent water pricing agency and regulatory body, financially autonomous agencies to supply water, clearly defined water rights, and transfers of management to user organizations or the private sector. Technical conditions include volumetric delivery, measurement structures, and infrastructure to move water over space, type of use, and time. These institutional and technical conditions can encourage the emergence of direct allocation mechanisms such as water markets and implement water pricing reforms.

It is true that the institutional and technical changes involve huge costs. But the present bureaucratic system of water administration is equally costly. International experience shows clearly that the promotion of intra- and inter sectoral water allocation through markets in tradable water rights can have financial, efficiency, and equity gains far higher than the costs of transacting the reforms.

CONCLUSION

Although water continues to be subsidized in most sectors and countries, there is growing recognition of water pricing as a key policy instrument for cost recovery and demand management. Given the seriousness of the informational, technical and political constraint, the technical and institutional conditions needed for full cost recovery or for efficient allocation cannot be created overnight. A realistic strategy for water pricing reform involves, therefore, an incremental approach that sequences reform components appropriately, focuses first on cost recovery, and gradually broadens to address the economic and allocative role of water pricing. Enhancing and sustaining the economic and welfare contributions of water resources depends ultimately on the ability to face the twin challenges of supply augmentation with the lowest ecological and social costs, and the development of institutional frameworks for an efficient use of existing and future supplies. The future of the market-based water economy in most countries rests on how quickly the institutional reforms are undertaken.

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