

Planning Public Water Projects

economic principles involved in construction and operation have important bearing on over-all value of public projects

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Economic facets of water project planning—of primary importance in themselves—have important bearing on questions turning on legal issues of water rights and engineering questions of design, capacity, and location.

Additional water can always be supplied to an area if the extra returns will cover the extra costs of the extra supply.

Water as a Commodity

By the same standards of supply of any commodity—electricity, natural gas, petroleum—the use of water at any time and place should be considered within the framework of the general economic principles of resource allocation.

Water as a resource, or a factor of production, has no unique qualities which should cause it to be treated differently from any other resource. An attempt to single out water resources for special economic consideration may result in error.

Public control and development of water resources are often necessary. However, the principles of economic efficiency should not be abandoned. It is not permissible to assume, for example, that any area has certain requirements or needs for water which must be satisfied by public projects without consideration of the relation between costs and returns. Economic demands always depend upon price, and price must be based upon the costs of the water at the point of delivery. Provision of water to users who can not cover the costs becomes subsidy and inevitably results in a redistribution of income and a reduction of total productive efficiency.

Utilization

Water is necessary to life but the same is true of many other resources. Although the first units of water consumed have very great values, the marginal utility or marginal productivity of succeeding units is always declining. When the issue of new water projects is being considered, it is always a question of a little more water or a little less water. The question is always a marginal one so the extra returns from extra water must be compared with the extra returns from all of the ways to use scarce resources.

The real cost of building a water project is the sacrificing of the value or returns the same resources could earn in alternative use. Not to insure that returns cover the costs is inefficient use of resources and real waste—in a meaningful sense—occurs.

Justification

Slogans and statements sometimes used to justify certain kinds of action in the public development and use of water resources have economic implications. The assertion that waters of the state belong to all of the people of the state must be examined as to its meaning within the context of a society based upon private property. The question as to whether water production—alone, among the many resources—should be socialized must be answered. Another common slogan states that water resources must be distributed fairly and equally with benefit to all but does not define what is fair nor whether distributing water resources equally means according to population, to area, to ability to pay or according to need.

Again, the contention that the State should participate in water resource decisions to effect a balanced use of water for all purposes does not specify who is to say what is balanced use or how water will be allocated. It ignores the relation between returns and cost.

The logic used to argue that the State has a moral obligation or duty to see that there is enough water provided at all times for all uses—apart from costs and prices—also could be used to justify public production and subsidy for any commodity.

Projects Expensive

Water projects are relatively expensive and—occasionally, on the grounds that the whole state benefits from increased water use—it is urged that water projects should be constructed and paid for out of tax funds.

All expenditure benefits somebody and it is true that project dollars are respent, creating additional income, but tax dollars used to pay for the project would be respent also, if left in the taxpayers' hands.

Money costs are always borne by someone and payment of water costs from tax proceeds does result in a redistribution of income—from the taxpayers to the water users—but as far as real costs are concerned, water projects that can not cover costs may mean that greater alternative production is sacrificed somewhere else, which causes a reduction in real income. The same logic applies with equal validity to all subsidies regardless of whether they are met by the use of general tax contributions or from oil revenues or from some other fund.

Benefits and Costs

The question of subsidy of water costs by taxpayers should be examined to determine the economic feasibility of a given project; whether total benefits will exceed total cost; whether there is no alternative project with higher net present values; and, that the form of repayment is clear to all parties concerned.

Water projects must be subjected to an extended cost-benefit analysis before the economic feasibility can be determined. A cautious examination should be made of reports which declare a water project to be financially feasible—as any project can be—if tax contributions or subsidies from other sources are included in the repayment plan.

Revenues

Revenues from the sale of water and power from some projects may not be sufficient to cover annual costs until some 30 or 40 years after original construction and during that time, millions of dollars from tax funds may be required to cover costs. Although total project revenues may—eventually—exceed total project costs, the bulk of the costs occur early and the bulk of the revenues occur later so that present values must be determined.

In addition to an over-all costs-benefit analysis, the specific returns and costs require scrutiny.

A sound economic analysis is always needed so costs and effects of public projects can be weighed.

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