A water bank is a tool for leasing water for a limited period of time on a voluntary basis between willing water rights holders and users. It provides temporary transfers of water entitlements based on how much water a user needs and when it is needed without a permanent change in water rights. The result is that an individual can decide to lease water, based upon a personal perception of:

- operational needs,
- current market value of the water,
- risk involved in the transaction,
- market value of the crop or product requiring water input, and
- cost of the transaction.

Saving or exchanging dollars through monetary banks is strictly a choice. Similarly, water banking is strictly a choice. Water banking transactions take place without the threat of outside coercion.

The basic idea of a water bank is that water is treated as an economic good or commodity. A market system, when allowed to operate efficiently and free of government intervention, balances the supply of and demand for a given commodity. The market provides a low-cost institution for facilitating exchange between buyers and sellers of commodities. These exchanges comprise the forces of supply and demand as expressed through price. Thus, similar to other privately produced commodities that can be bought or sold through a market, such as wheat or potatoes, water that is privately held can also be bought or sold through a market. A water bank, if properly structured, might facilitate ex-change of water at a lower cost than if private parties negotiated among themselves.
The unique aspect of treating water as a good or commodity, however, is that unlike most crops that can be grown in quantities to satisfy anticipated consumer demand, the supply of water in the west is relatively fixed. The development of additional water supplies for urban or industrial use have become increasingly expensive as well as socially unpopular. This leaves western water as a scarce commodity to be utilized through more efficient means of allocation.

Free enterprise or a market system is thought to efficiently allocate scarce resources. That is, it offers a natural mechanism for balancing producer supply with consumer demand through price. A market can facilitate the temporary exchange of water rights among those consumers who have the highest value for use and a willingness to pay for that use. In this way, a market system can facilitate more efficient use of scarce water.

Describing water markets in general terms is challenging. Markets for water are naturally diverse due to the particularities of a specific region. These include the needs of its water lessors and users and the hydrologic aspects of the water source itself—which are apt to change instantaneously and over time.

For a water market to develop, water right holders must formally agree or come to a consensus to lease their water to a bank. The water bank serves as a clearing house to rent water to temporary users. Other considerations include the physical capacity for the market to function efficiently. Thus, in order for a water market to exist, there must be:

- water rights holders who are willing to forego use of their entitlement for a limited period,
- users who are willing to rent water,
- adequate capacity for storing water,
- a system for monitoring release and delivery, and
- appropriate hydrologic capacity to allow for water to be stored and delivered to renters or users without significant water loss to users.

The price for water, as determined by market forces, is influenced by:

- quantity of water available,
- location of desired use,
- timing of desired use, and
- quantity of water desired.

A water bank may take the form of a private or public entity. Depending upon the social dynamics surrounding a particular water resource, a bank may be organized as a cooperative of local institutions and citizen groups. Administration may be comprised of an elected board of directors including private citizens who are water right holders.
Efficient transactions may be characterized by flexible and improved timing of water delivery and effective water storage and flood control.

Idaho water banks, for example, are administered by a combination of state rules, statutory provisions, and local procedures. Water is leased through a statewide bank, three local rental pools, and the Shoshone-Bannock Tribal Water Supply or tribal bank. Each bank establishes its own procedures subject to approval by the Idaho Water Resource Board. The board appoints local rental pool committees to operate storage rentals. An annual report of rental pool leases is submitted to the Board in order to approve an increase in fees.

What is the Bank's Purpose

A primary role for a water bank is to manage water supply to meet water demand with respect to existing water rights entitlements. The bank assumes responsibility for over-seeing and facilitating efficient water exchange transactions. These transactions include accounting of water entitlement leases, including recording of debts and payments, acquiring water storage, monitoring adjustments to storage, and authorizing water delivery to a requested destination for use.

Efficient transactions may be characterized by flexible and improved timing of water delivery and effective water storage and flood control. The bank manages water supplies from various available sources to meet user demand while balancing water right priorities. Methods of water management would follow changes in irrigation patterns and practices according to agricultural water needs, for example, while adjusting to reservoir fill periods to account for flood water.

Idaho's water bank has levels of administration which have various functions or roles in water bank operations. The State Board appointed local rental pool committees to oversee much of the day-to-day transactions. The committees are required, for example, to develop procedures for:

- managing rental pool funds
- prioritizing competing applications for banked water
- setting annual rental prices and administration fees
- preventing injury to other water rights holders and to the local public interest
- ensuring conservation of water resources within the state
- notifying the department and watermaster of rentals involving a change in place of use.

Water Banking and Agriculture

A simple model of water banking involving agricultural producers may enable a bank to offer temporary one-year or two-year leases, for example, between water rights holders and users. Water rights holders whose uses are for agricultural production may then strategize a pattern of land use to account for water that they lease for this limited period.
During water lease periods a grower's strategy, for example, might include:

- substituting less water intensive crops for water intensive crops,
- grazing livestock in previously irrigated fields to encourage biological activity,
- spot irrigating to reduce water use,
- integrating drip irrigation technology to reduce water use,
- timing irrigation to reduce water use,
- strategic management of riparian areas, and
- fallowing fields.

There are at least four economic incentives for agricultural users to participate in a water bank. These include:

1. receiving cash revenue for water
2. reducing operational risks
3. diversifying their investment portfolio, and
4. reducing transaction costs

First, receiving cash in exchange for water used in production might be used to improve and update production equipment or enhance the property. Any cash revenue that an agricultural producer realizes from leasing his/her water entitlement would increase naturally during drought years when water supply is reduced. In agricultural dependent communities, a water bank may even choose to guarantee water protection to agricultural users during drought years. That is, during drought years a percentage of water entitlements would automatically be set aside for agricultural users to maximize their water options for production purposes.

Secondly, by having an option to bank water for revenue, producers' operational risks are reduced. That is, when the market price for a given commodity or crop is significantly low, the producer may choose an alternative land use strategy and lease the water for revenue instead.

Thirdly, an option to bank water offers producers an opportunity to diversify their portfolio or spread of investments. In developing a strategy for land use during water lease years, producers may be more likely to consider producing alternative crops and integrating alternative farm management techniques.

Finally, when parties try to exchange water, they need information on who wants the water, what is the value of water, how to get it to the party that needs it and how to get the best price if you are a lessee and how to get the most return if you are leasor. The cost of information and implementing a water exchange is often called transactions cost. A water bank can serve to lower the transactions cost by providing service to potential water exchanges among parties.

Water right holders and other water users participate in water banking for various reasons. Farmers and ranchers may see water banking as an opportunity to sell irrigation water or buy supplemental irrigation water to grow certain crops. Utility companies may view water banking as the opportunity to buy water to insure water service to urban customers or for hydroelectric power generation.
Recreation groups may see water banking as the opportunity to buy water to maintain reservoir storage and in-stream flow to improve fishing and boating activities. Environmental groups may view water banking as the opportunity to buy water to either maintain wetland delivery and/or in-stream flow to improve water quality for waterfowl and fish habitat.

The University of Nevada, in concert with the Desert Research Institute, is conducting a study of the Walker River Basin sponsored by the Bureau of Reclamation. This study is examining the geography, hydrology, agronomy, economics, and demographics of the entire basin and the possibility of water banking. Providing the public with information on water issues and assessing public perception of water issues and water banking in the basin are important parts of this study.

While this publication (No. 6) of the Western Resource Issues Education series explains the basic idea and possible benefits of water banking, No. 7 in the series discusses common concerns about water banking. To maximize public information on water issues, results from the Walker River Basin case study specifically will be featured in future series publications.

References


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