

# Assessing the Financial and Economic Viability of Water User Associations and Canal Management Organizations in Ferghana Valley countries of Central Asia

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## 1. Abstract and Conceptual Framework

The financial viability of a water user association is fundamentally dependent on the financial viability of the irrigated agriculture it supports. The mission of a water user association might be described as securing a source of irrigation water for its members and delivering water to farmers in a timely and cost effective fashion. Within this general description, the activities of water user associations will vary with the degree of effort required to secure and maintain a water source and the number and size of farms that are served.

In concept, a water user association is a cooperative venture of its membership. Farmers belong to the water user association and they direct its activities, often through an oversight council or a board of directors. The board hires the manager of the water user association, who then hires staff members and manages the association's budget. Staff members report to the manager, who reports to the board. The manager creates the annual budget and a long-range business plan, and both documents become effective with board approval. In this model, the farmers, through their representation on the oversight board, approve the budget and review the financial status of the water user association and approve all expenditures at regular board meetings.

Within the conceptual model of farmer membership and oversight, it is easy to describe the role of farm-level payments in supporting and sustaining water user associations. Farmers create the association with the goal of obtaining a reliable supply of irrigation water. It is in the farmers' interest to determine how much they are willing and able to invest in that effort, and to ensure that the desired investments are maintained. It is also in their interest to ensure that all members provide their annual payments according to an agreed schedule. Incomplete recovery of payments from farmers can threaten the financial sustainability of a water user association, thus reducing the probability that farmers will receive timely supplies of irrigation water.

The value of establishing and maintaining a water user association is inherent in the farm-level values of irrigation water. Those values are determined by the differences in net revenues that are generated with and without irrigation. In arid regions, where supplemental irrigation is essential to support agriculture, the farm-level values can be substantial. The sum of the net revenues earned each year in an irrigated region, after the costs of all non-water inputs are considered, provides an upper-bound estimate of the value of establishing and maintaining a water user association.

Many of the water user associations in Central Asia have been created by state order, rather than by a group of farmers coming together to establish a cooperative unit that would secure their water supply and ensure timely water deliveries (Horinkova and Abdullaev, 2003; Yakubov and Ul Hassan, 2007; Johnson and Stoutjesdijk 2008; Kitamura 2008). As a result, the budgets of most water user associations have not been developed with farmer oversight or involvement. In addition, the budgets include some, but not all, of the components that need to be considered in establishing sustainable associations. For example, some budgets include funds for obtaining the water supply and for operation and maintenance, while not including a contingency fund or an allowance for the depreciation of physical assets.

In a sense, the budgets for most water user associations in Central Asia have been developed with three notable disconnects from the desired model: 1) Farmers have not been involved in budget discussions, 2) The willingness and ability of farmers to pay for water deliveries, which is a function of the returns they earn in irrigated agriculture, has not been considered adequately, and 3) Only a subset of the pertinent costs that water user associations should consider have been included in the budgets. Given this divergence from the desired approach, many associations have had difficulty obtaining full payment of farm-level water fees, and many are likely on a path that is not yet financially sustainable (Sehring 2007; Veldwisch 2007; Kitamura 2008).

The goal of this paper is to examine the potential financial and economic viability of water user associations and other institutions designed to enhance water management in Central Asia. In particular, this paper examines the following components of viability:

1. Financial and economic feasibility,
2. Farm-level ability to pay,
3. Flexible tariff systems, and
4. Asset management strategies.

The empirical focus is the Ferghana Valley, which includes portions of Kyrgyzstan, Tajikistan, and Uzbekistan. Analysis is based on a desk review of published and non-published information regarding financial viability, and information collected during field visits with water user association officials in Tajikistan, Kyrgyzstan and Uzbekistan. The article is concluded with recommendations for public officials to consider in their efforts to enhance the financial and economic viability of water user associations and other water management institutions in Central Asia.

**Keywords:** Water User Associations, financial and economic viability, farm-level ability to pay, Ferghana Valley, Central Asia

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