

AN ECONOMIC WATER SUPPLY INSTRUMENT APPLIED ON DISTRIBUTION OF WATER RESOURCES

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Abstract

This paper presents a cost structure for improving distribution options of fresh, used and recycled water resources. The previously introduced equality principle and the model for Efficient Use of Resources for Optimal Production Economy (EUROPE) allocate shadow costs to losses that reduce the efficiency of the distribution of water resources. It is found that long-distance transportation of fresh and used water by channels, basins, pipes and tunnels is approximately 4 times cheaper than desalinating the same amount of water in plants at the coast. The introduced methodology improves the usage of remote and rigid areas by enabling efficient irrigation and improving the access to fresh water. Profitability increases, the technology is advanced and environmental conditions improve when the EUROPE model is applied on water issues at various higher policy analysis levels. The developed methods constitute support tools for management. The results show utility for long-distance water resources transportation.

Keywords: Water Transport, Losses, Efficiency, Equality Principle.