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Norgaard, Richard

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AN ECONOMIST'S NIGHTMARE

BY RICHARD NORGAARD

Everything about the Delta is difficult because: 1) water is scarce in California, 2) markets do not allocate California's limited water, and 3) the Delta is the heart of California's water system where many of the feedbacks of non-market disequilibria swirl.

That's an exaggeration. Indeed, perfect water markets only exist in economists' imaginations. But by looking at the Delta through an economic lens we can gain key insights into the basic difficulties of balancing human and environmental uses using strong science.

First, in the economist's ideal world, property rights are solidly defined and clearly assigned to individual economic actors so that they can make decisions as to how to use the assets they have. Rights to water, however, are inherently fluid, and the situation in California is especially sloppy.

Much of California is technically desert, land that typically only has significant economic value because land owners have access to water that has fallen as rain or snow somewhere else or has accumulated over time as groundwater beneath their land. Access to water makes land extremely productive due to good soils and favorable climate. Indeed, California has some of the most valuable agricultural land in the world. Access, however, is not the same as a clear property right. Technically, the State owns the water and allows people to use the water. There are many more claims to use water than water available and few water claims in California have been adjudicated. Access to surface water is largely provided by State and federal water development agencies and then distributed through regional water districts. Precipitation is highly variable from year to year, and how much water should be stored for the next year, or more, is constantly questioned. Environmental needs have been increasingly honored over time, and these can be especially critical during the driest of years. Thus, with the value of agricultural land tied to water access, and access always up for grabs, the defense of access to water is a constant, very high stakes, political, legal, and regulatory noisy struggle. Sound science speaks above this melee, but not without difficulty.

Second, economists are fond of how markets equilibrate supply and demand, of how prices generate efficient solutions. The California water system is far from any kind of an ideal equilibrium. Where the system is operating now is clearly not sustainable. Groundwater is a common pool resource that needs to be wisely shared between users and over time. Individual water users, however, have pumped water at whatever rates are advantageous for them. For this reason, most groundwater basins, especially in the San Joaquin Valley, are seriously overdrawn. Some wells can no longer be extended to get more water. In some areas, land has subsided from compaction after depletion. In some basins compaction is so severe that they can no longer store nearly as much water. The data are poor, but all agree that a significant portion of total water use, especially in San Joaquin Valley agriculture, over the past few decades has come from groundwater and that the historical rate of withdrawal is coming to an end. Significant groundwater regulation legislation was not passed until 2014. Total water use going forward must be lower than it has been, but a rational transition plan has not been put in place. It is difficult to make wise decisions based on science when the system fundamentals are far from where they will be at some future date. Of course, the uncertainties of how climate change will affect the supply of and demand for water only compound this problem.

Third, politics work well when actors trust each other. The levels of historic mistrust between

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Richard Norgaard is a Professor Emeritus at the University of California, Berkeley and Past Chair of the Independent Science Board.

A pioneer in the field of ecological economics, Dr. Norgaard's recent research addresses how complex environmental problems challenge disciplinary scientific understanding and the policy process. He serves on the Fifth Assessment of the Intergovernmental Panel on Climate Change and as a member of UNEP's International Panel on Sustainable Resource Management.

northern and southern Californians, water users and environmentalists, and Delta residents and government generally are sufficiently high to make bargaining very difficult. Politicians keep hoping that good science will determine answers water bargainers have not been able to reach. In a state where “whiskeys for drinking and waters for fighting over”, the science can never be good enough. Considerably more trust, however, could improve California water negotiations substantially.

Nearly six decades ago, Jack Hirshleifer, a professor of economics at UCLA, argued that allowing water to be traded from areas where its use value is low to where its value is high would bring rationality to California water. Markets have proven very difficult to establish because rights are so difficult to define. After three years of drought and much reduced water deliveries to San Joaquin Valley farmers compounded by very hot weather, a solution is arising. A few San Joaquin farmers are bringing their capital, drip irrigation systems, and specialty crop expertise north to the Delta and leasing farmland with firmer water rights. The invisible hand of the market finds ways to work, albeit beyond the imaginations of economists.