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## Irrigation

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# 'Back to nature' with dryland farming: a dangerous fraud

by Sylvia Barkley

In the same package as Robert O. Anderson's intentionally retrograde energy proposal can be found the attempt to "return" American farmers to something they never were: a bucolic peasantry that relies on the unforced bounty of nature for its existence. Although some of them may not realize it, the advocates of dryland (non-irrigated) farming have more in common with environmentalists or tree-worshipping savages, than with the industrious agriculturalists who settled this country.

Nonetheless the campaign *is* being mounted: by the media, by the self-defined experts and their think tanks, and most importantly by a policy of inaction and even denial of the necessity for a national water plan. The campaign is being directed at farmers who are meeting reality in the form of falling net income and a national economic crisis. For farmers operating at under 50 percent of parity—receiving prices that represent less than half the cost of production of their crops or herds—the argument for "retrenchment" through the substitution of muscle power for expensive equipment, of "natural" rainfall for irrigation, can be brutally convincing.

And the fact that agriculture consumes over 80 percent of all the water captured would seem to make it reasonable to ask farmers to decrease their water use in a time of national belt-tightening.

Or would it? The American farmer, in a way only less immediately apparent than in the case of the factory worker, has never simply depended upon the "bounty of nature" for his livelihood. It is only as they have been able to *improve* nature, that American producers—whether of food or the machinery that processes the food—have been able to provide for their countrymen and for the well-being of their descendants. That is why today four percent of our population—mechanized farmers with full access to irrigation and fertilizer—can feed the other 96 percent and a good part of the rest of the world.

### Water conservation or investment?

Farmers are now being urged to conserve water by various voluntary means. Labor-intensive processes of

no-till agriculture and precise adjustments to drip irrigation units are proposed. Sophisticated devices for measuring soil moisture and computerized programs for estimating water/yield relationships are marketed in glossy agricultural publications. This naturally involves a vast waste of capital investment as well as time. The farmer who spends the little capital he has available to install drip irrigation (which provides small amounts of water via pipes) does not have the money for the new tractor/combine or the new seed stock which he might otherwise invest in.

In the Great Plains area, where underground sources of irrigation water are being depleted, there has been a drop in the total acreage under irrigation. As a result, yields have also fallen, both per acre and per man-hour. The struggle to conserve natural water is extremely labor-intensive, as farmers use compost to hold the water, replace large machinery with smaller, less "disruptive" units, and go through a special, intense plowing cycle to allow the sparse rainfall to soak into the soil. At the same time, the investments in irrigation infra-structure are abandoned, and the entire network of production and distribution becomes underutilized. Thus, the average real cost of agricultural production is increased.

The comparative efficiencies of irrigated and unirrigated agriculture are shown in the accompanying table; the figures are necessarily approximate. They understate the case, however, because many crops could not be grown without irrigation in area where they are now produced, or could not be grown commercially. Nonetheless the figures give some idea of the magnitude of the crime against the economy which the dryland advocates are perpetrating.

The charlatans in question do not mention these figures; they combine restrictive water-use regulations with an intense effort to convince both farmers and the public that dryland farming represents a way out of current and future problems. Newspaper reports on the depletion of the Ogallala aquifer, for example, feature tales of enterprising old-line producers who have suc-

cessfully made the transition to the new mode of dryland farming, rather than abandon themselves to despair over the coming exhaustion of the local groundwater supplies. And in fact such shifts have been induced, not so much by the scare stories of coming water famines as by the steep rise in cost of pumping the ground water to the surface.

Natural gas, the primary fuel for irrigation pumping from the Ogallala, has increased in price seven-fold since 1974. This effect was not unexpected: a study done in 1977 predicted severe drops in irrigated acreage and in yield when the price of natural gas exceeded \$2.12 per thousand cubic feet; the price is now over \$2.80. Simultaneously, the effect of energy cost on the price of irrigation has multiplied as the supplies of ground water are depleted, and more and more energy must be used to raise the water from an ever-dropping water table. Natural gas prices are expected to soar.

### The ecological dimension

One of the greatest ironies—and lies—of this entire operation is the idea that dryland farming could replace irrigation without affecting “normal” conditions. The relationship between irrigation and rainfall has been broadly known to scientists for some time now. A specific analysis of the southern Great Plains region, conducted in 1976, indicated that large-scale irrigation of the plains from the 1940s on increased the summer rainfall in the affected areas by 16 percent. The affected area was 162,000 square miles, more than three times the actual area irrigated at that time.

The converse of this discovery is also clear: if the level of irrigation were to fall drastically, there is good evidence that the amount of rainfall will decrease, and even the low levels of production projected for dryland farming will not be maintainable.

*Unrestrained* use of water in agriculture is an ecological necessity. As Arthur Pillsbury points out in an upcoming article in *Fusion* magazine, the process of irrigation necessarily transports dissolved salts into the soil. In general, these salts are not taken up by the plants, nor are they evaporated with the soil moisture, and therefore accumulate. Environmentalists advocate slowing down this process by lessening water application rates. But the salts can only be *removed* by applying excess water, flushing the water out of the soil. The more water a farmer “conserves” by not doing this, the less fertile his land becomes.

The scenario writers, such as the Arthur D. Little Company, which has masterminded the six-year, \$6 million study of the Ogallala aquifer, do give the farmers another choice. If they refuse to be “good citizens of spaceship Earth,” conserving water by labor-intensive methods and accepting economic uncertainty, they can become pure “free-enterprise” individualists.

Instead of the commitment to put food on the table of the world, they can choose to grow whatever cash crop will pay for itself under the current economic insanity. At present, cotton is the high-value alternative, although it tends to destroy the soil, and does little for progress in either the United States or any developing nation to which the cotton might be exported.

Thus, throughout the presentations aimed at the farmers, there is a strong undercurrent aimed at shutting down especially beef production, while upgrading cotton. Cotton is one of the most water-intensive crops grown in the irrigated states, but it does produce a sufficiently high rate of return that farmers can pay for the pumping costs of ground water—perhaps even for the outrageously expensive water that is proposed to be transported into the High Plains areas from the Arkansas or Missouri River basins. The Corps of Engineers estimates that such a project would yield water costing over \$400 per acre-foot.

The production of beef, on the other hand, is barely feasible at today’s ratios of costs to prices, and would be virtually wiped out by increases in the costs of water for feed grains and for the cattle themselves in feedlots. In fact, the Arthur D. Little projections for the southern area of the Great Plains calls for eliminating beef production entirely, from areas which now produce around 40 percent of the beef in the country. Not only is production being lost, but some areas of the country are being steered toward a “cash crop substitution”-like policy as if America were somebody’s colony!

Further down this road stands something even more frightening: forced abandonment of irrigation. Although no one is at present proposing this for the Great Plains, in Arizona it is already illegal to place new lands under irrigation, even to replace lands removed from irrigation; new pumping of ground water, unless it fits the state’s master plan, is a felony.

The possibility for legal elimination of irrigated farming in Arizona was brought about as a trade-off for the passage of the Central Arizona Water Project, one of the largest water projects to be funded in recent years. The project, which ensures industrial and urban water supplies for the medium term, was achieved not by creating newly utilizable resources, but by diverting Colorado River water now used by California.

Under these conditions, immense interest has greeted the revival by Lyndon LaRouche’s National Democratic Policy Committee and the Fusion Energy Foundation of a plan put forward in the 1960s to bring water from Alaska. New endorsements for the plan have been made, while others have taken up the necessity for *some* national water policy. In response, the advocates of stone-age agriculture are attacking the very concept of a national solution to a problem which has been clearly shown to have no local solutions.