

WATER AND AGRICULTURE

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There were 34 people in attendance during the Water and Agriculture Workshop, and a lively discussion ensued. Competition for water, desalting, the national water policy, and section 208, all as they relate to agriculture, were considered.

The Governor's Council has predicted that agriculture's use of water will slip from approximately 93 percent of the total, to 67 percent. We explored different alternatives that we saw for the future. It appears that we are not likely to conserve ourselves into a rich supply of water. We may conserve up to a point, but a viable expanding agriculture is going to demand more water than the above share would indicate.

What can be done to reduce the amount of water that agriculture needs? We talked about the possibility of changing cropping patterns and introducing more drought-resistant crops. For example, the Clovis area is one of the first that will have to change certain cropping patterns and cultural methods due to the dwindling water supply there. For example, is it possible to grow such crops as sunflowers and others that would require less water? One interesting suggestion was that New Mexico might be in a favorable position for seed production. For the same return as we get from forage or grain, seed production might use less water. The possibility of guayule, a latex-bearing crop, was mentioned. While there is no completely drought-resistant crop, we might be able to develop varieties or strains of certain crops that would use less water. If there is a possibility that certain crops can grow and approach optimum yield with less water, agriculture should seriously investigate these. This will be one of the major thrusts by the Agricultural Experiment Station over the next few years. Currently, tests on a number of alfalfa varieties show some with marked differences in the amount of water required for growth. If it is possible to use less water and still get high returns, research must lead the way. But, there will be a time lag from the point research is completed until the results are applied.

Also discussed was whether agriculture needs water and land policies. The question asked was: "Where is agriculture on the priority list for water?" Water users were listed by priorities

and at the bottom line was agriculture. Despite the possibilities of long-range food shortages, in which the prices of food and products of agriculture might become higher, and despite the fact that intensified production under greenhouse systems could improve the priorities for agriculture, still, it seemed that under today's situations the bottom line would indicate that agriculture will be far down the list as to what it could pay for water. With a national "cheap food policy" and the fact that New Mexico's total production is small compared to the national picture, our production systems might be at a disadvantage without affecting the national picture. Again, this puts agriculture at a low end of the priority list in what it can pay for water. It was estimated there would have to be a ten-fold increase in agricultural returns for agriculture to compete financially with other industries or urban use for water.

Conservation may lengthen the life of agricultural use of water. One of the more unique suggestions was that irrigation, as it is practiced, involves a certain amount of water loss. For example, without proper flow channels, losses of 10 or 15 percent of the water may occur through seepage and evaporation. Therefore, if local areas are interested in trying to keep a strong agriculture, and competition position, a bond system that would allow for system improvements to take place at the public's expense could be undertaken with the idea that the public might get back the part of their input. For agriculture to conserve that 10 or 15 percent, outside support would be required since the profits from agriculture are not enough to make the necessary changes in the system.

The possibility of progressive rates for water use in agriculture, of local, state, or national policies that deal with water use, and agricultural subsidies were discussed. Of course, the obvious questions: Where will the funds come from? Will they be economically attractive? How can they be put to use? What would research show to be the best use of funds available?

As for desalting water, it appears to be too expensive for agriculture in volume. Although there might be some long-range possibilities, in the short-run, the cost factor appears most prohibitive. Still, it is an intriguing area, and the committee urged more to study the possibilities for desalted water -- perhaps on more localized situations and smaller more intensified areas. One item is to see what is really needed in terms of quality of water for crop production and the problems associated with its use. Is it possible to select plants that are resistant to or have a higher tolerance to salt? Other questions were raised such as: What irrigation technology is required in the use of desalted water? Could trickle irrigation be used? Could trade-offs with industry be made? Could effluent from industry be used in agriculture? Basically, however, the pro-

blem of desalting water for agriculture comes back to costs. Desalting water required energy, and it was estimated that about 60 percent of the total cost of desalting is associated with the cost of energy. Where will this energy come from in New Mexico? Another real problem with desalting on a massive scale for agriculture is what can be done with the brine that is produced as a waste product?

Other possibilities were also discussed such as using a blend of partially desalted water and fresh water, and possibilities for aquaculture, greenhouse use, and high-salt tolerant crops. All these seemed to point to a real need for intensive research but results will take time.

A National water policy and its impact on agriculture was discussed. The discussion focused on questions such as: Should agriculture favor a national water policy? Should these decisions be made on a regional, state, or local basis? It was pointed out that agriculture needs to take into account, in a water policy, all the benefits, direct and indirect, of that agricultural water to society as a whole. At Elephant Butte, there are other benefits from water such as water skiing, fishing, etc., that benefits a much wider group than the farm sector. Policy should be based on the total picture and all the water costs must not be charged to agricultural use alone.

How then, can the true value of the water in the West be measured? Should a water use policy be formulated on a national level or regional or state? A regional, state or local approach was preferred. One of the problems that our group seemed to consider important is that New Mexico in any national water policy, is likely to be shorted. Our impact is not that good. The group favored some sort of regional or national policy relating to underground water, possibly an interstate policy that may not need to reach the national level. As far as agriculture was concerned, the group favored guidelines and overall policy from Washington, but implementation and operation left at the local level. Regional basin agencies, like those already established in some areas, were suggested.

Section 208 of the Water Pollution Control Act was discussed in detail. This section deals with point and non-point water pollution problems in the United States, and has real implications as far as water use is concerned. For example, the best management practices that would reduce runoff from range areas might point directly back to over- or under-stocking of a particular area. How will this be determined, by what standards, and what procedures will be used? When and if these points are decided, what kind of "encouragement" will be used to change the practices? Secondly, it seems that the October deadline for a comprehensive plan for the state is simply unreasonable; an ex-

tension of the October deadline would allow more research as a basis for the right decision.

There were arguments on both sides. Some participants felt that we have waited long enough, and that a preliminary judgment based on available information is possible. Others argued that it could result, a few years down the road, in the constraints that are not wanted or necessary; that it would be better to obtain basic information through research before launching out with various prescriptions to cure pollution. The consensus of the group was to wait for more research. Evaluation of techniques that are to be used in determining these non-point sources, the multiple-use concepts of land and how they might affect runoff, and the recreation and agriculture interface were only some of the points that should be considered.

In summary, these were the four areas discussed during the Water and Agriculture Workshop. It seems that agriculture is still probing for the answers. A number of questions are being asked the agriculture sector, questions that have no immediate answers. The very fact that these questions are being asked suggests the importance of the situation if New Mexico is to grow and prosper in the future.