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Research ready for the problem

From time to time in this column I have discussed the importance of resources in our agricultural activities. We didn't learn our energy lesson very well a few years ago. In spite of the rising price of our limited fossil fuel, we continue to consume ever-increasing amounts in all our activities. We read and hear about the diminishing supply but, somehow, because we haven't yet *depleted* the supply, we seem content to keep our heads buried in the sand to avoid looking at realities.

During the winter of 1976-77 a more persuasive voice than man's own has spoken to us about our profligate use of energy and water and what might happen if we continue to disregard their finite supply. Nature has arranged the weather for the United States this year in such a way that we must face reality. The eastern part of the United States has suffered through record-breaking snow falls and low temperatures. The Great Plains, Rocky Mountain area, and West Coast have received meager amounts of rain and snow.

California is in the second year of drought, the longest, most serious drought since records have been kept. Our nearly \$9 billion agricultural industry is almost totally dependent on a stored and transported water supply. With our storage reservoirs both above and below ground at frighteningly low levels, Californians are, for the first time, taking remarkable steps to curtail their use of water and to stop its waste.

Systems built on an assumption of abundance are no longer adequate to deal with a limited supply. In 1977, agriculture in California will be very different from its usual condition of high productivity. The effects of an altered agriculture will reach into every segment of the state's economy, and we may learn how interdependent urban and rural dwellers are.

What can the University's Division of Agricultural Sciences do about all this? A great deal! As state,

federal, and local agencies try to cope with a serious water shortage, they seek knowledgeable advice. The Division is supplying technical information on water requirements, water use, and water quality for agricultural endeavors. We are preparing technical input to the agencies responsible for planning and policy development at both state and national levels. We are endeavoring to increase public understanding and discussion of controversial water supply and use problems. The general areas in which our specialists are participating are (1) water development and environmental issues; (2) water quality and pollution control; (3) wastewater reclamation and re-use; (4) water conservation in urban landscapes and gardens; (5) water conservation in agriculture; (6) coping with a drought situation; (7) energy-water relations; and (8) water education programs in schools.

One basic lesson, which I hope the weather has taught us this year, is that mankind *did* plan for this situation years ago by establishing universities with good research facilities. Agricultural Experiment Station scientists have long been studying all aspects of water requirements, water use, water quality, plant growth, pollution effects, water supply, and numerous other related subjects. We have a storehouse of information that is now being called upon.

Solutions have a way of revealing more problems, so the research must continue. But the fact remains that, because we have an Agricultural Experiment Station and a Cooperative Extension, society has a chance of coping with an adverse environment. Our predecessors conceived and established this research and education system to serve their needs. We hope the water situation in 1977 will reveal to California citizens that their investment in research, education and extension not only was wise and beneficial, but also prevented widespread disaster for today's agricultural and food systems.