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CROP PRODUCTION AND WATER SUPPLY
CHARACTERISTICS OF KERN COUNTY

by

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FOREWORD

This report is a by-product of William D. Watson's Ph.D. dissertation entitled "Irrigation Water Pricing Revisited: An Empirical Assessment of the Potential for Market Price Allocation in Kern County." The research in the Department of Agricultural Economics, University of California, Davis, was supported by the Office of Water Research and Technology, USDI, under the matching grant program of Public Law 88-379, as amended, and by the University of California Water Resources Center, as part of Office of Water Research and Technology Project No. B-187-CAL and Water Resources Center Project UCAL-WRC-W-526. Analytical results from the research appear in the dissertation. Prior to the analyses, it was necessary to compile a very large data bank from many sources. It is felt that the collection of the information through the cooperation of so many persons will have value on its own, beyond its use in the academic study mentioned above. This report, therefore, presents details of the Kern County agricultural and water industries in a form useful to many both within and outside of the University.

PREFACE

An account of agricultural production in Kern County, California, is given in this report, with a particular emphasis on that all-important component--water for irrigation. We have brought together in one place an abundance of information accumulated over a two year period from many and diverse sources. The collection and arrangement of the data should prove directly useful to Kern County planners. It may also serve a broader purpose, for Kern County water problems and possible solutions are paradigmatic of those in other parts of this semi-arid state in the not-too-distant future. The analysis of the water supply situation and water costs in Kern County, therefore, merits the attention of state-level water strategists.

Information was gathered both from published sources and from conversations with many experts. The historical framework of Kern County agriculture can be viewed as a series of production stabilization plateaus, for whenever the available water supply became a binding constraint, no additional acreage was irrigated. Then as more water became available, expansion occurred. Feasibility studies made prior to supplemental water projects and post-project evaluations were a main source of information.

The year 1975 was chosen as our study base since it was the first year that most of the water districts contracting with the State Water Project (SWP) had completed their delivery systems so that the water supply and cropping patterns could be considered "normal." The next two years, 1976 and 1977, were drought years--hopefully "abnormal." For the year 1975, the most detailed source of information about cropping data was given in the individual

water district pre-project feasibility studies. Some districts (Arvin-Edison and Wheeler Ridge-Maricopa, for example) also publish detailed water district reports. Since 1975, the Kern County Water Agency (KCWA) has compiled statistics on water supply and deliveries. The Bureau of Reclamation (BR) and the State Department of Water Resources (DWR) collect crop and water supply information from their contractors.

Some water districts, such as North Kern, are not affiliated with KCWA, BR, or DWR and so there were some gaps in the data. Furthermore, discrepancies in the data frequently occurred among the many and various sources. Such variations are understandable but somewhat troublesome. For example, the number of irrigated acres in a water district may differ in the reports of DWR, BR, and the local water district. The DWR records only acres served by SWP; BR figures include only "harvested" acres. Some water districts count acres twice that are double-cropped or cropped inter-row with young orchards or vineyards; others count this acreage only once.

We have attempted to synthesize from these several sources, a consistent set of values to report. Adjustments frequently had to be made to put the figures on a comparable basis from district to district. Many specific values were double-checked with local experts whose cooperation is greatly appreciated. Occasionally a figure--say, the amount of irrigation water applied in a district--was chosen in accordance with requirements of crops known to have been grown that year, in that place.

The compilation, therefore, was not easy; but it is most satisfying to have fit together so many parts into a useful and complete whole. To the authors' knowledge, this report will be the first attempt to close data gaps and present a consistent set of information for all the major water

districts in the Southern San Joaquin Valley portion of Kern County. If users of the report encounter some specific value with which they disagree, they may recall that adjustments frequently had to be made, suitable to the overall presentation. Again we thank everyone who contributed to fitting in any of the pieces.

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