



COOPERATIVE EXTENSION

Department of Agricultural & Resource Economics

COMMUNITY DEVELOPMENT ISSUES

College of Agriculture The University of Arizona Tucson, Arizona 85721

Vol. 2, No. 3

AGRICULTURE IN ECONOMIC DEVELOPMENT

July, 1994

From time to time CDI will focus on particular sectors of the economy. This issue focuses on agriculture, agricultural processing and related industries. Next summer CDI will focus on high technology industries in Arizona.

For most of Arizona's history, agriculture was one of the leading industries. Yet in the last three decades Arizona has come a long way from the Arizona of the four 'C's. Cotton, cattle, citrus and copper production remain important economic activities. However, they have not increased enough to keep pace with the explosive growth in other sectors of the economy. What is the role of natural resource based industries, particularly agriculture, in Arizona in the 1990's?

In economic development theory agriculture has traditionally been a source of land, labor and capital (in the arid West, we might add water) for other industries. Typically as a nation or region develops, large amounts of labor and capital are shifted out of agriculture and into other economic activities over time. In developed countries such as the U.S., the movement of labor out of agriculture continues. In 1950 there were about 10 million workers on farms in the U.S., by 1990 there were about 3 million (USDA National Agricultural Statistics Service).

Technological change in agriculture continues to allow the movement of resources out of agriculture to other industries even in developed countries. These technologies range from mechanization and the use of computers in farm operations, to the development of chemical fertilizers, pesticides and herbicides, to the breeding of new varieties of plants and

improved animal stock, to new management practices. Agriculture in Arizona is technologically sophisticated and likely to become more so as new biotechnology, computer, robotics, mechanical, and other tools become available.

Because of declines in employment over time, economic development professionals tend to view agriculture as a mature or declining industry. They often do not think of it as an area for recruitment, retention and business start up efforts. However, even in mature industries, opportunities exist that should not be overlooked. Such opportunities may be particularly critical for rural communities that have traditionally depended heavily on agriculture. While Arizona has no farm dependent counties,¹ agriculture is important in several smaller rural communities. Some of these communities are in metropolitan counties like Maricopa, Yuma and Pinal.



The University of Arizona College of Agriculture is an Equal Opportunity employer authorized to provide research, educational information and other services only to individuals and institutions that function without regard to sex, race, religion, color, national origin, age, Vietnam Era Veteran's status, or handicapping condition.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, James A. Christenson, Director, Cooperative Extension, College of Agriculture, The University of Arizona.

Agriculture in the U.S. provides not only food and fiber for use within the U.S., it also makes consistently large positive contributions to net exports. In addition, while traditional agricultural commodities face slow growth in demand for their products in the U.S., agricultural enterprises that cater to leisure and recreation activities (i.e. nursery products, animal breeding for pets, guest ranches, U-pick farms, landscape services) face rapid growth in demand.

In Arizona, organizations such as the Salt River Project and the Arizona Agri-Business Council are encouraging communities to consider further agricultural development. Discussions in the agricultural community have focused on diversification of farming enterprises and adding value to agricultural products. A workshop held last summer identified agribusiness opportunities including pecan, pistachio, aquaculture, greenhouse, and ornamental production, and vegetable dehydration and edible oils processing (Lay Gibson, et al.).

One example of adding value has been the rise of 'fresh processing' of salad greens for restaurants and for consumers. In cotton production, colored cottons are creating new opportunities. Another way that individual agricultural producers have decided to add value is by selling their products directly to consumers and the food services industry. Much of this activity is occurring with horticultural products (vegetables, fruits, nuts, and flowers). The last article in this newsletter discusses this activity in greater detail.

However, the agricultural sector faces challenges in Arizona. These include the increasing costs of meeting government regulations affecting the industry, particularly environmental and labor regulations, expected increases in federal grazing fees, and the rising costs of water and power for agricultural use. These issues, combined with a changing international trade environment, will be critical in determining changes in agriculture in Arizona over the next decade.

Research Service classified about 22% of all U.S. nonmetropolitan counties as farming dependent in 1990.

Lay Gibson, et al., *Arizona Agribusiness Opportunities*. 1993. Sponsored by the Agribusiness Council of Arizona, Inc., and The Salt River Project.

USDA National Agricultural Statistics Service. *Farm Employment and Wage Rates, 1910-1990*. Statistical Bulletin No. 822. March, 1991.

THE ECONOMIC IMPACTS OF AGRICULTURE IN ARIZONA

Employment associated with meeting the food and fiber needs of U.S. residents is estimated at 22.8 million. This represents about 18% of the U.S. workforce in 1992. Food and fiber employment represented 21% of the U.S. workforce in 1982 (Lipton and Edmondson). Ninety-one percent of this employment was in food and fiber manufacturing, transportation, wholesaling, retailing and food service. These figures reflect the industrialization of agriculture. Unlike the farmer of 100 years ago, modern farmers and ranchers purchase many of their inputs, and are rarely involved in the processing, transport and distribution of their products.

The percentage of the Arizona workforce involved in meeting national food



1 All counties that derived 20% or more of total personal income from agriculture and related processing are considered farming dependent. The USDA Economic

and fiber needs is close to the national average. It was an estimated 15% in 1988 (Majchrowicz). However, the economic impact of production agriculture and agriculture dependent businesses on the state economy was close to five percent in 1990. Agriculture and dependent agribusinesses had total value added impacts of \$2.7 billion. Total employment impacts were more than 94,300 jobs, including 50,400 jobs created in agriculture and dependent agribusinesses (Leones and Conklin).²

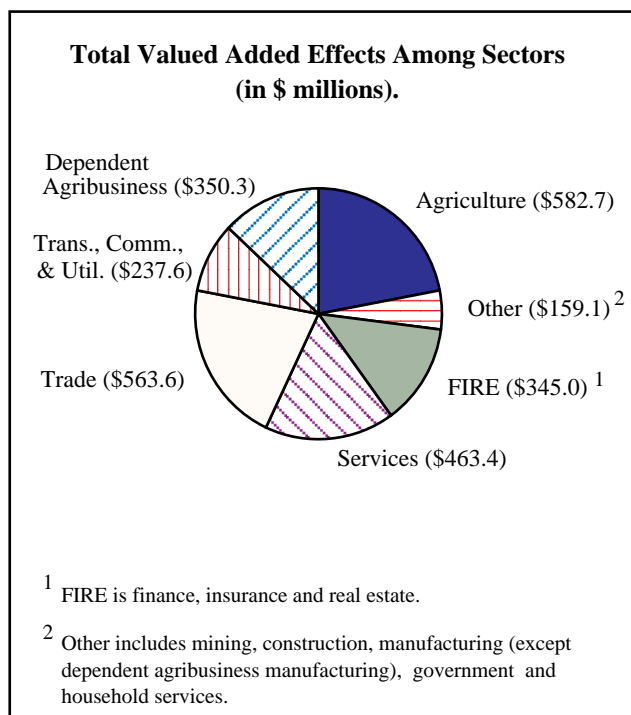
Arizona agriculture and related agribusinesses have strong linkages with other industries in Arizona. Over 65% of the total value added impacts of agriculture and related agribusiness occurred in nonagricultural sectors (see pie chart below).

Using a slightly different definition of agriculture and agribusinesses and of value added, Bureau of Economic Analysis (BEA) Gross State Product (GSP) data show that these sectors provided about \$2.07 billion in value added to the state economy in 1990.³ Arizona agriculture and agricultural processing value added grew from \$.87 billion to \$2.07 billion in current dollars between 1980 and 1990. However, the sector's share of GSP declined from 4.6% to 3.1%.

How does agriculture and agribusiness's share of the Arizona economy compare to other states? These shares range from a high of 16.1% in South Dakota to a low of 1.3% in Nevada. Production agriculture and agricultural service's share ranged from 14.0% in South Dakota to .6% in New York and New Jersey. The average agriculture and agribusiness share for all 50 states and the District of Columbia was 5%. Arizona is below the average, but so is California, the state that contributes by far and away the most to national agricultural product. Agriculture and agribusiness share of 1990 GSP was 4.5% in California (Leones, Schluter and Goldman).

Arizona agriculture is of national importance for some commodities. In 1992 Arizona was the second largest producer (behind California) of Pima cotton, head lettuce, cauliflower, broccoli, cantaloupes and lemons in the U.S. However, cotton and cattle still dominate total cash receipts in Arizona agriculture (Sherman and Erwin).

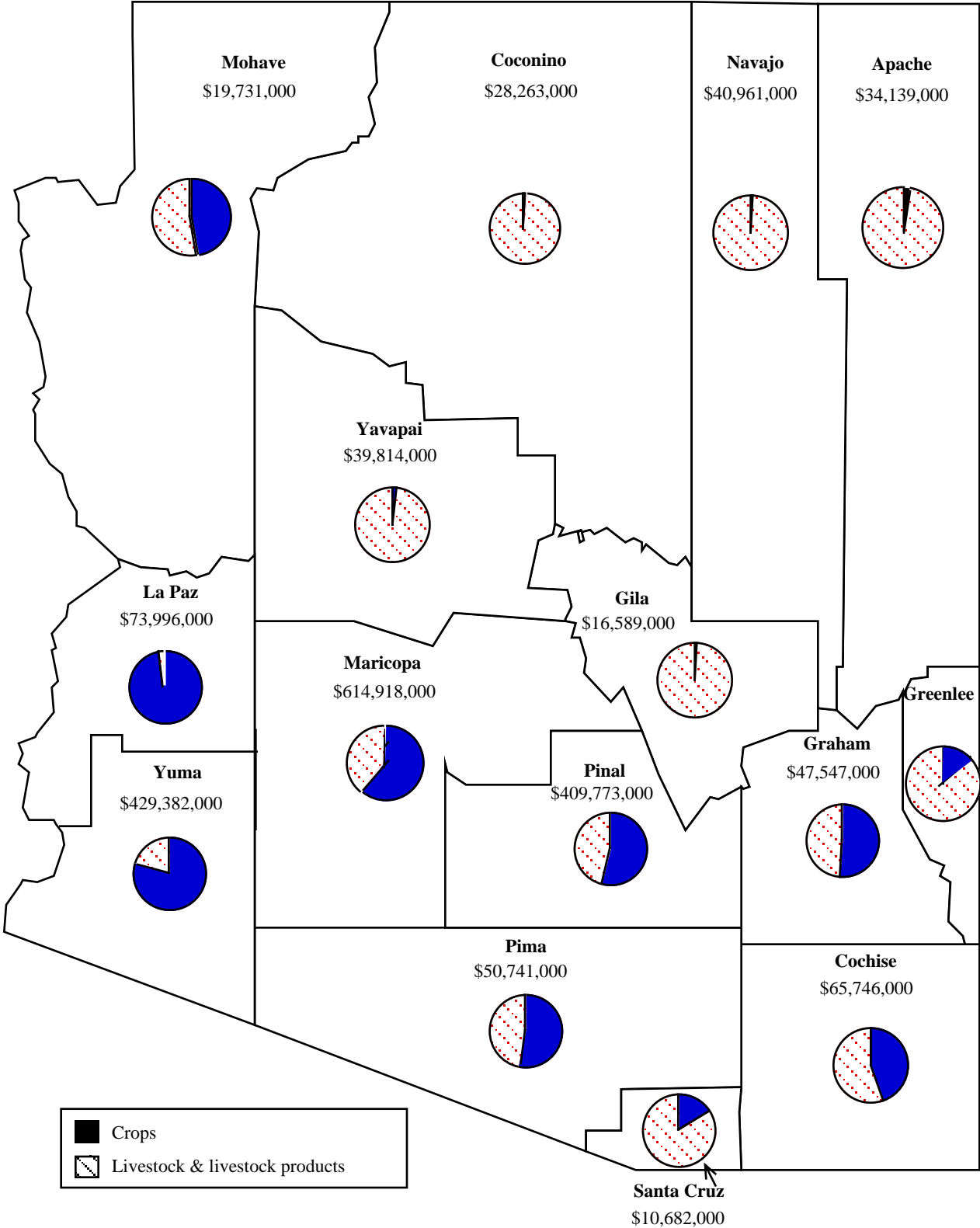
Production agriculture is geographically concentrated in Arizona. Three of Arizona's 15 counties, Maricopa, Yuma and Pinal counties provide 77% of production agriculture gross receipts. In Yuma, La Paz, Pinal and Graham counties between 5% and 12% of total personal income was from agriculture in 1990. In all other counties it was less than 5%. Irrigated agriculture is predominantly located along the Colorado River and in the southern counties, while the northern counties are live-stock producing areas (see map).



ALL REPORTS REFERENCED IN THIS ARTICLE ARE AVAILABLE FROM THE EDITOR ON REQUEST.

² These include full time, part time and seasonal jobs. Agriculture dependent sectors are those sectors that would not be likely to locate in Arizona if there were no farming or ranching. Such sectors include agricultural services, most food processors except ice, soft drink, and bakery goods manufacturers. It also includes agricultural chemical and farm machinery and equipment manufacturers, farm supply and equipment dealers, irrigation systems, and agricultural business associations.

Total Cash Receipts for Crops, Livestock, and Livestock Products, by County (1991).



Source: Leones and Conklin

3 This definition includes agriculture, agricultural services, fisheries, forestry, food and kindred products, tobacco products, textile mill products, apparel and other textile products and leather products . This is a much broader definition than the one described in footnote 2.

Leones, Julie, Gerald Schluter and George Goldman. "Redefining Agriculture in Interindustry Analysis." *American Journal of Agricultural Economics*. forthcoming.

Leones, Julie and Neilson Conklin. "Agriculture in the Arizona Economy." A joint publication of the Arizona Department of Agriculture, Arizona State University and University of Arizona. March, 1993.

Lipton, Kathryn and William Edmondson. "Linking Agriculture to the Economy." *Choices*. Fourth Quarter, 1993. p 22-23.

Majchrowicz, T. Alexander. "The Importance of Farm and Farm-Related Industries in the U.S. West." USDA Economic Research Service. Paper presented at the Western Regional Science Association Meeting. February 23-27, 1992.

Sherman, Will and Bill Erwin. "1992 Arizona Agricultural Statistics." Arizona Agricultural Statistics Service. August, 1993.

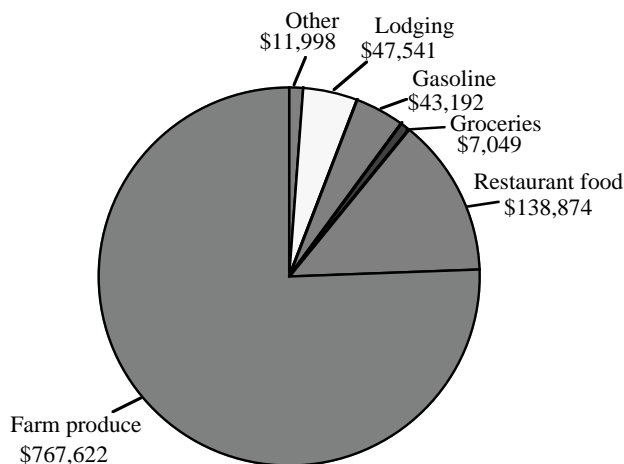
AGRICULTURAL TOURISM IN COCHISE COUNTY: AN EXAMPLE OF NEW DIRECTIONS IN AGRICULTURAL DEVELOPMENT

While the trend in agriculture has been towards increasing specialization, farms that market directly to consumers are diversifying. In fact, their activity is spilling over into recreation and tourism.

In many states, the image that comes to mind when you mention farm produce stands and U-pick operations is housewives buying fruits and vegetables in bulk for preserving. A recently completed survey of 904 visitor groups to farm produce outlets in Cochise County shows that this doesn't hold true in Arizona.

In other states, customers are willing to drive only a few miles to the nearest U-pick farm. In Cochise County, the average customer drove more than 80 miles to visit farms. More than 44% of out-of-county visitors say that they liked to visit the farm outlets to have a farm or rural experience. Finally, unlike other regions of the country, the trip was often a family outing. Women represented only 55% percent of all visitors.

About 81,450 out-of-county visitors



Estimated Total Expenditures by Out-of-County Visitors to Cochise County

came to the farm outlets in Cochise County between July 15 and November 1, 1993. For almost 80% of these visitors the farm outlets were the primary destination on their trip. These visitors spent about one million dollars in Cochise County while on their trip. Not all was spent at the farm outlet. Visitors spent \$230,000 in restaurants, gasoline stations, hotels and other businesses (see pie, page 5). The average out-of-county visitor party spent about \$40 on the farm and another \$18 off the farm.

Study results show that almost a third of the out-of-county visitors were coming to the farm outlets for the first time. This bodes well for future growth in agricultural tourism in the area as 97% of the visitors planned to return to the farm outlets.

The agricultural tourism activity in Cochise County represents one of the many new opportunities in agriculture, opportunities that also directly benefit businesses in other sectors. Opportunities for similar developments exist north of Phoenix in Yavapai County and south of Phoenix in rural areas of Maricopa and Pinal County. Selling winter vegetables and citrus directly to consumers is also possible in the counties along the Colorado River.

The success experienced by farm outlets in Cochise County has been due in part to outlet owners cooperating with each other and doing some joint marketing and promotion. The Willcox Chamber of Commerce and Agriculture and The University of Arizona Cooperative Extension have been instrumental in helping outlet owners with their cooperative marketing. Also, each outlet has developed special products. Many of the visitors to the area came specifically to purchase apples and sweet corn. However, they also could buy other products including meats, squashes, melons, tomatoes, beans, peas, pears, peaches, pistachios and honey.

Some work has already begun to take agricultural tourism the next step, by encouraging visitors to spend more than the day in the community. Less than 10% of the visitors to the farm outlets spent the night in 1993. The average expenditure of overnight visitors was \$130 compared to only \$54 by day trip visitors. Opportunity exists to boost visitor expenditures significantly through weekend overnight packages.

This article is based on the University of Arizona extension bulletin "Agricultural Tourism in Cochise County: Visitor Characteristics and Economic Impacts." by Julie Leones, Douglas Dunn, Marshall Worden and Robert Call. forthcoming.

For a full copy of the report on agricultural tourism in Cochise County, write to the editor of this newsletter. A team of extension specialists and agents is also working on a direct farm marketing manual for Arizona growers that should be available in Spring, 1995.

From the Editor:

Many Cooperative Extension faculty members have extensive expertise in the agricultural industry. These agents and specialists would be happy to provide assistance if you are interested in or need information on agriculture. Contact your county Cooperative Extension office or Cooperative Extension on the University of Arizona campus for more information. A list of Cooperative Extension offices and the director of each office is provided on the following page.

Sincerely,

Julie Leones, Ph.D., Editor
 Department of Agricultural and
 Resource Economics
 Economics Building #23
 University of Arizona
 Tucson, AZ 85721
 Phone: 602-621-6255
 Fax: 602-621-6250

COUNTY EXTENSION OFFICES IN ARIZONA

Joyce Alves, County Director
Apache County Extension Office
P.O. Box 369
St. Johns, AZ 86506
602-337-2267

Douglas Dunn, County Director
Cochise County Extension Office
450 S. Haskell
Willcox, AZ 85643
602-384-3594

Beth K. Tucker, County Director
Coconino County Extension Office
2400 Huffer Lane
Flagstaff, AZ 86001
602-774-1868

Matthew Livingston
Hopi Reservation Satellite Office
P.O. Box 1203
Keams Canyon, AZ 86034
602-734-2441

County Director
Arizona Cooperative Extension
Gila County Office
1177 Monroe St.
Globe, AZ 85501
602-425-7179

Ron Cluff, County Director
Graham County Extension Office
921 Thatcher Blvd.
Safford, AZ 85546
602-428-2611

Michael Schneider, County Director
Greenlee County Extension Office
HCR Box 60
Duncan, AZ 85534
602-359-2261 or 359-2305

S. Sherwood Winans, County Director
La Paz County Extension Office
1208 Kofa Ave.
Parker, AZ 85344
602-669-9843

Stan Farlin, County Director
Maricopa County Extension Office
4341 E. Broadway
Phoenix, AZ 85040
602-255-4456

Robin Grumbles, County Director
Mohave County Extension Office
101 E. Beale St., Ste. A
Kingman, AZ 86401
602-753-3788

Stephen J. Campbell, County Director
Navajo County Extension Office
402 E. Hopi
Holbrook, AZ 86025
602-524-6271

Gerald Moore, Coordinating Extension Agent
The Navajo Nation
P.O. Box 1339
St. Michaels, AZ 86511
602-871-7406

Cynthia Ratner, County Director
Pima County Extension Office
4210 N. Campbell
Tucson, AZ 85719
602-628-5161

Sam Stedman, County Director
Pinal County Extension Office
820 E. Cottonwood Ln. Bldg. C
Casa Grande, AZ 85222
602-836-5221

Linda Kelly
San Carlos Indian Reservation
P.O. Box 850
San Carlos, AZ 85550
602-475-2350

Richard Harris, County Director
Santa Cruz County Extension Office
2150 N. Congress Dr., Rm 107
Nogales, AZ 85621
602-761-7849 or 761-7800 ext. 3084

Deborah Young, County Director
Yavapai County Extension Office
P.O. Box 388
Prescott, AZ 86302
602-445-6490

Donald Howell, County Director
Yuma County Extension Office
198 S. Main St., 3rd floor
Yuma, AZ 85364-1424
602-329-2150

**Do You Want To Continue
Receiving our Newsletter?**

In the April issue of the Newsletter we enclosed a post card. We asked that you send it back to us if you want to continue receiving the Newsletter and indicate if there are any corrections in your address. If you have not sent your post card back or have misplaced it, please mail or fax us a short note if you want to continue to be on our mailing list. **Please do this right away** so we can keep our list up-to-date. Thank you.

ARIZONA COOPERATIVE EXTENSION
U.S. DEPARTMENT OF AGRICULTURE
THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721
