

Growers' Assessments of Challenges Facing the California Rice Industry: Past and Present

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Rice growers in California face many challenges in 2016. In this piece, we consider current challenges cited by growers and their relationship to past challenges in the industry.

In January and February 2016, we administered a survey to California rice growers covering several topics. The survey listed a number of potential challenges facing agriculture and the California rice industry today. Respondents were asked to indicate the top three challenges currently facing their operations. Our survey results represent the opinions of 300 farm operators (about 12% of California rice operations), who accounted for roughly 24% of 2015 California rice production.

Main Challenges

Figure 1 shows the share of growers citing each challenge as among the top three challenges currently facing their operation. Challenges labeled with an asterisk are challenges not listed on the survey that were written into an open “other” category.

Three challenges stand out among the rest: water availability, low or unstable output prices, and environmental regulations. Nearly 99% of growers cited at least one of these as among the top three challenges facing their operation, and 16% of growers cited all three.

Of course, none of these challenges are new. Rice growers in California have been dealing with them for 100 years. While rice had been experimented with

previously, the birth of rice production began in earnest with University of California agronomist W.W. Mackie's successful experiments growing Japonica rice in the town of Biggs in 1908, as highlighted in Willson's 1979 book, *Rice in California*. The commercial rice industry in California became established in the following five years.

Water Availability

Water availability is the challenge most commonly cited by growers; this is not surprising in the fifth year of drought in California. What may be more surprising is that nearly 18% of growers *did not* cite water availability (or water cost) among their top three challenges.

This result could be an indication that some growers are in areas where water availability seems more secure, some are adapting to drought conditions, or simply that other challenges are more significant than the

drought. One important observation for either possibility is that growers responded *before* the Bureau of Reclamation announced a 100% allocation of Central Valley Project water to Sacramento Valley growers on April 1, so the responses aren't driven by that 2016 announcement.

Compared to respondents who did not consider water availability as a top three challenge, growers who did consider it among their top three have a significantly higher percentage of output that's organic, significantly fewer years of experience growing rice, and are significantly less likely to cite farming as their sole occupation, as shown in Table 1.

Water is one of the most contentious topics in California at present. And despite increased allocations for some California farmers this spring, water allocation and water policy is a high priority area for many

Figure 1. Top Three Challenges Facing Rice Operations Today (N=279)

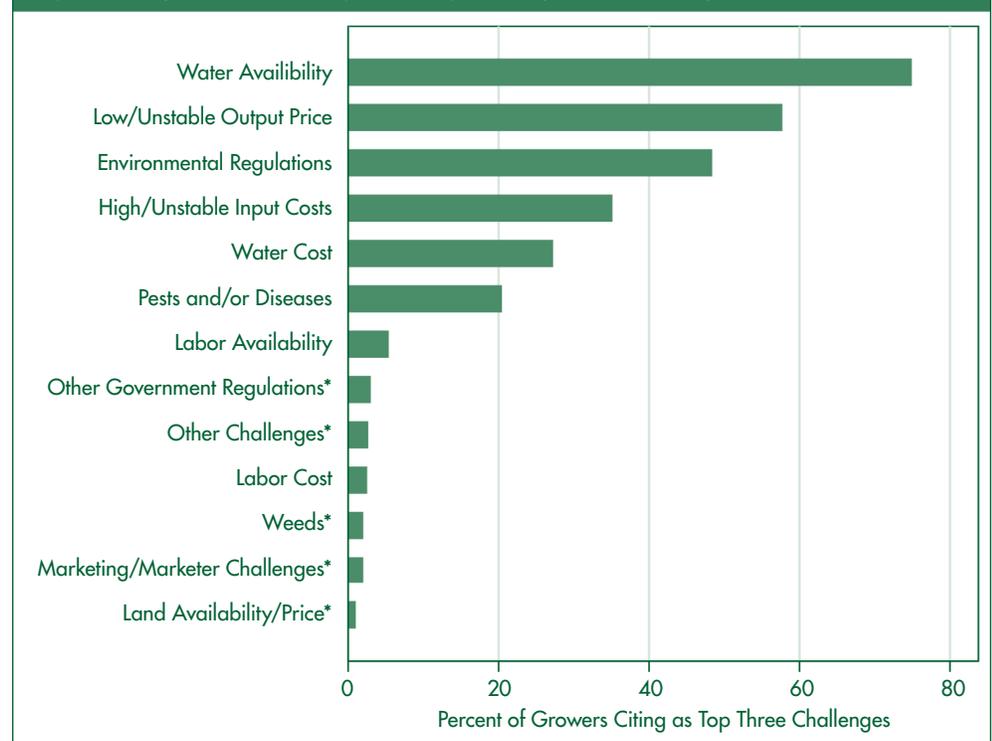


Table 1. Differences in Producer Characteristics by Challenge

	Top Three Challenge	Not a Top Three Challenge	Difference
Water Availability			
Average percentage of acres rented from another landowner	48.77	49.61	-0.84
Average percentage of production that is organic	5.26	0.92	4.34*
Average percentage of production marketed through a co-op	33.65	40.05	-6.4
Average percentage of production marketed in cash sales	17.37	20.61	-3.24
Average years of experience producing rice	29.46	32.09	-2.64*
Share of respondents with farming as a sole occupation	0.62	0.73	-0.11*
Share of operations with gross farming income over \$500K	0.5	0.48	0.02
Share of respondents that are Republican	0.66	0.72	-0.06
Low or Unstable Output Prices			
Average percentage of acres rented from another landowner	52.72	43.93	8.78*
Average percentage of production that is organic	2.45	6.62	-4.17*
Average percentage of production marketed through a co-op	30.03	42.27	-12.24*
Average percentage of production marketed in cash sales	22.69	12.05	10.63*
Average years of experience producing rice	29.37	31.17	-1.8
Share of growers with farming as a sole occupation	0.66	0.63	0.03
Share of operations with gross farming income over \$500K	0.53	0.45	0.08*
Share of respondents that are Republican	0.71	0.63	0.08*
Environmental Regulations			
Average percentage of acres rented from another landowner	48.28	49.66	-1.38
Average percentage of production that is organic	2.74	5.54	-2.80
Average percentage of production marketed through a co-op	37.52	32.92	4.6
Average percentage of production marketed in cash sales	16.36	19.99	-3.63
Average years of experience producing rice	31.35	28.93	2.42*
Share of growers with farming as a sole occupation	0.69	0.61	0.07
Share of operations with gross farming income over \$500K	0.53	0.46	0.06
Share of respondents that are Republican	0.74	0.61	0.13*
<i>Note: Stars denote statistical significance at the 10% level or below</i>			

policymakers, leading to uncertainty about the future of agricultural water supplies in California. Such uncertainty is not unique to present times.

Periodic uncertainty, especially during drought times, is a perennial of California agriculture. Indeed, the early history of water in California agriculture was plagued by supply uncertainty. At first, as water distribution infrastructure was being built, promises made by water companies to rice growers were not met. Some of California's first rice crops failed due to late deliveries of water. And droughts, of course, are also not new to California.

Low or Unstable Output Prices

The second most common challenge cited by respondents was low or unstable output prices. Figure 2 shows both nominal prices received as well as prices deflated by the GDP Implicit Price Deflator, converted to 2015 dollars. While both nominal and deflated prices for rice have been relatively high recently, as compared to the last several decades, deflated prices are not high relative to pre-1981 levels; and the relatively low prices that persisted from 1981 into the early 2000s are fresh in the minds of growers.

Furthermore, since quantities have been reduced during the drought, to maintain farm income farmers must earn a higher price for what rice they do sell. California rice farms are eligible for farm price and income support programs, but they have provided little or no payments in recent years because prices have been relatively high. USDA-subsidized crop insurance is available, but has also provided relatively little benefit.

As shown in Table 1, relative to other respondents, those citing low or unstable output prices among their top three challenges rented a significantly higher percentage of their land in production. They also marketed significantly more of their output

through cash sales and significantly less through co-ops. They were significantly more likely to have gross income from farming (for all crops, not just rice) of greater than \$500,000. These growers also had a significantly lower percentage of output that was organic.

Finally, they were significantly more likely to indicate that they were affiliated with the Republican Party. Possible responses to this question in our survey included all registered political parties in California, along with “I do not have a party preference (Independent)” and “I prefer not to answer.”

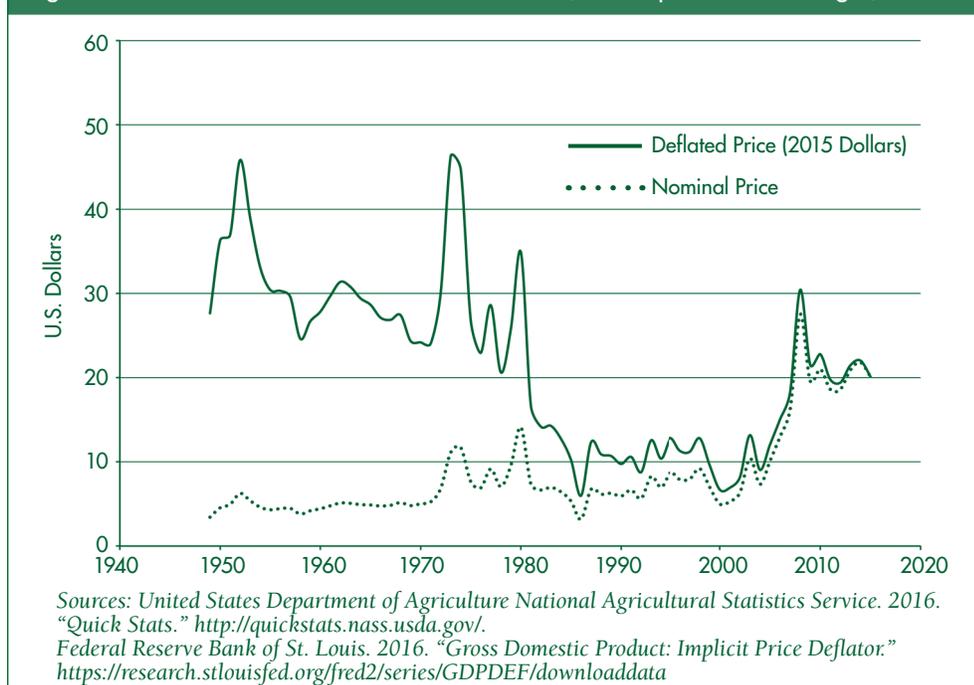
A handful of respondents utilized the option to name another challenge to state that marketers and millers in the rice industry are to blame for low output prices. This point of contention is not new. One of the first main conflicts between millers and growers in the rice industry came very soon after rice was first produced commercially.

In 1920 the Pacific Rice Growers Association (PRGA) contracted with millers to mill their rice, but the price of rice fell well below what the board had agreed would be their minimum acceptable price. Despite the fact that PRGA rice was sold by a control committee with a majority of seats held by PRGA members, growers accused millers of selling rice on the open market behind the backs of the control committee and thus bringing the price down.

Millers, in turn, accused growers of not pricing their rice to compete in a market that was weak due to changing macroeconomic conditions rather than micro-level manipulations. The conflict was one of the contributing factors leading to the reorganization of PRGA into the Rice Growers Association of California a year later, in 1921.

Of course, it is no surprise to see the economic incentives of buyers and sellers at odds. Farmers and buyers, in an effort to do what’s best for their businesses, have incentives to keep revenues high and costs low. Resolving

Figure 2. Nominal and Deflated Prices Received (dollars per hundredweight)



this conflict for the long-term health of the industry requires both sides recognizing and acknowledging the others’ incentives. No doubt, even with a concerted effort, this will continue to be a point of discussion among industry members, as it was as early as 1920.

Environmental Regulations

The third most common challenge cited by growers is environmental regulations. These regulations relate to air and water quality, as well as water quantity. They affect growers’ use of machinery, irrigation, disposal of rice straw after harvest, discharge of water, and other activities.

There were two significant differences between those citing environmental regulations as a top-three challenge and other growers: those growers citing environmental regulations challenges had significantly more years of experience growing rice and were significantly more likely to cite “Republican” as their party preference. Results are reported in Table 1.

Adaptation to environmental regulations has been a major focus of the California rice industry through much of its history. The current work of the

California Rice Commission (CRC) and Rice Research Board (RRB) both focus on projects related to meeting environmental regulations. The RRB was established in 1969, the newest iteration of a research organization formed in 1912. At the same time, environmental concerns were emerging nationally and in California; the U.S. Environmental Protection Agency was formed in 1970 and the California Air Resources Board (CARB) was formed in 1968.

This increasing emphasis on environmental quality affected how rice was produced in California. For example, around the same time, restrictions on the aerial application of certain herbicides used for rice production were implemented due to concern about drift onto non-target species. These restrictions prompted research into alternatives by the RRB. Later in the 1970s, water quality and water management research became more significant factors for rice production due to increased regulation, such as passage of the Clean Water Act in 1972.

Air quality regulation has altered how California rice land is managed. CARB became an important stakeholder in rice straw management. By 1971



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CARB was already indicating specific “burn” and “no-burn” days that were affecting the rice industry. Then, in the early 1990s, the California state legislature passed a bill phasing out the burning of rice straw, a common way of disposing of rice straw after harvest.

An industry association, the California Rice Industry Association, ultimately decided to endorse the ban and began working with environmental groups to develop alternative methods of disposing of rice straw. It also began proactively addressing environmental issues to preempt additional regulation. The CRC, formed in 1999, continues these efforts, working with groups such as the Nature Conservancy, the California Department of Pesticide Regulation, and others to address environmental issues.

Implications for the Future

There are two ways that we can think about the top three challenges identified by rice grower respondents. On the one hand, it could be disheartening to see that after 100 years of innovation in the rice industry, the same problems are still not “solved.”

However, there’s another way to look at this history. Whenever the bar has been raised, whether by consumers or policymakers, or by those within the industry itself, the industry has risen to meet the challenge.

This continues today. New innovations and changes are on the horizon. For example, a pilot project testing drip irrigation technology on rice is in progress in Yolo County. New businesses, such as the Rice Growers Association in West Sacramento, are rising from the ashes of old ones. Rice farmers are now generating carbon credits for taking voluntary measures to reduce their greenhouse gas emissions in their rice operations.

While the industry faces many challenges today, its history tells us that these problems have been faced before, and predicts that the industry will succeed in facing them again.

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For additional information, the authors recommend:

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