CARB Workshop:
Methane, Dairies and Livestock, and Renewable Natural Gas in California
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My name is John Ikerd. I am an Emeritus Professor of Agricultural Economics at the University of Missouri-Columbia. I spent the first half of my 30-year academic career as a proponent of what I now call "industrial agriculture." That was before I fully understood the negative impacts large specialized farming operations have on the natural environment, rural communities, and society in general. I have spent my time and energy since studying and trying to educate others about the realities of industrial agriculture and the opportunities to develop ecologically, socially, and economically sustainable alternatives.

The basic distinguishing characteristics of all industrial organizations are specialization, standardization, mechanization, and consolidation of management into larger units of production to achieve economies of scale. In agriculture, industrialization has resulted in fewer farms and larger farming operations. The resulting decline in number of farms and rural exodus of farm families has decimated the economic integrity and social cohesion in farming communities. In addition, the reliance of specialized cropping operations on chemical fertilizers and pesticides and the concentration of animal wastes by large-scale livestock and poultry operations have poisoned the natural environment, threatened the physical health and quality of life of people in rural communities, and contributed to an epidemic of diet-related illnesses among the population in general.

Concentrated animal feeding operations or CAFOs are the epitome of everything that's wrong with industrial agriculture. CAFOs are not only significant contributors to greenhouse gas emissions, but also pollute the air and water with other agricultural chemical and biological wastes and destroy the economic and social fabric of rural communities wherever they choose to locate. And the larger the CAFO, the greater the ecological and societal degradation.

Because of these concerns, I am opposed to any government program that incentivizes or facilitates the construction and operation of CAFOs, as I believe is the case under California's Low Carbon Fuel Standard. Based on the research I have seen; the negative "carbon intensity" credits offered to CAFOs that use anaerobic digesters to capture their greenhouse gas emissions would provide an economic incentive to build even more and larger CAFOs, which will increase all of the other ecological and social problems CAFOs create.

As explained by Professor Aaron Smith of the University of California-Davis during the workshop, total government subsidies available to dairy CAFOs that operate anaerobic digesters can amount to about $2,000 per cow, approximately half as much as the total value from milk production. The authors of a refereed journal article in *Science Direct* concluded that "at least 3000 cows per farm are required for an economically viable anaerobic-digestion plant operation"—with the highest net returns for the largest dairy operations. This analysis was based on Idaho dairies and did not include the California carbon-intensity credits. There seems little

doubt that the California program will provide strong economic incentives to expand milk production and to concentrate production into even larger industrial dairy operations.

The construction of a CAFO is not an act of God that must be accommodated by humanity. It is an intentional, economic decision that is unnecessary and avoidable. There are economically viable alternatives that not only generate fewer greenhouse gasses than CAFOs but also do not pollute the rural environment, plunder rural economies, or destroy the quality of life of people who live in rural areas. Grass-based dairy operations are a good example. Research at the Center for Dairy Profitability at the University of Wisconsin summarized in the January 10, 2022 *Hoard's Dairyman* shows that smaller grass-based dairy farms are actually more profitable on a per-head basis than larger confinement dairy operations. The primary advantage for large confinement dairies is that individual investors can reap profits from larger numbers of cows.

These alternatives to CAFOs currently operate at an economic disadvantage because of perverse government incentives and the failure to effectively regulate CAFOs. The government stabilizes raw milk prices, which disproportionately mitigates price risks for large dairy operations with large initial investments and high fixed cost of operation. Generous government subsidies for feed grain production are indirect subsidies of CAFOs, which require an abundant and dependable supply of feed. The lack of effective regulation of the negative water quality, air quality, and public health risks of CAFOs provides an indirect government incentive to construct more and larger CAFOs. Without these government supports and incentives, CAFOs would not be able to compete economically with smaller, grass-based dairy operations.

Regardless of the economic advantages for CAFOs, any difference retail milk prices resulting from a transition from CAFOs to sustainable alternatives would be easily affordable and hardly noticeable to most consumers. For example, assume CAFOs have $5.00 per hundredweight of milk advantage over sustainable grass-based production. A gallon of milk weighs 8.6 pounds, meaning there are 11.6 gallons of milk in a hundredweight. So, the $5.00/cwt. advantage at the production level would be about 43 cents per gallon at the retail level. Current milk prices average about $4.00 per gallon. The retail price advantage would be just over 10% for CAFO milk. Retail milk prices have gone up nearly 10% in the past year, without any noticeable effect on consumer acceptance. Higher retail prices for grass-fed milk today are more a result the lack of efficient alternative systems of processing and distribution than higher production costs. If consumers knew the facts about CAFOs, most consumers might well choose to pay a bit more for milk, rather than endure the environmental and social costs of CAFOs.

The basic environmental problem with CAFOs is that they concentrate more waste in one place or location than nature can neutralize or absorb. As we heard from experts during the workshop, anaerobic digesters do not eliminate all of the negative environmental impacts of CAFOs and may actually exacerbate some problems, such as nitrogen pollution of groundwater. As we heard from people living in "CAFO communities," the negative impacts of CAFOs on the quality of life of their neighbors are not limited to those that would be mitigated, not eliminated, by anaerobic digesters. The increases in numbers and size of CAFOs incentivized by this program would even further concentrate all of the other negative ecological and social side effects in socially and economically marginalized communities.

Anytime an economic value is placed on a pollutant, the people who can't afford to protect themselves end up bearing the burden of allowable levels of pollution of other associated pollutants. In this case, those who lack the economic and political power to protect themselves will bear the burden of all of the other negative environmental and socio-economic impacts of more and even larger CAFOs in their communities. Those in more affluent rural communities will intensify their political resistance in response to the increasing numbers of larger CAFOs incentivized by this program. The people in minority, marginalized, and disenfranchised communities will be forced to cope with even more polluted air and water, even more obnoxious and potentially toxic odors, even greater risks of respiratory illnesses, infections with antibiotic resistant bacteria, and other physical and mental illnesses associated with CAFOs.

It simply doesn't make economic or political sense to pay CAFO operators to mitigate one of the many unnecessary problems they create. Such a program turns intentional pollution and plunder into a profitable economic enterprise. If the atmosphere belongs to any of us, it belongs to all of us. In a democracy, that means we all have an "equal right" to participate in decisions regarding who, if anyone, gets to pollute it, and for what reason. When government officials turn over their political responsibilities to markets, the most economically vulnerable of their constituents have every right to feel marginalized and abandoned—and to be angry with their government officials.