A Synopsis of Potential Impacts from Dairies on a Regional Economy

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In February, 2003 the National Academy of Sciences (NAS) found that all calculations about the air emissions from CAFOs such as dairies are "arbitrary" and that there are no scientifically supportable methods for determining air emissions and thus, no scientifically supportable methods for enforcing emission guidelines or regulations for CAFOs. The NAS study stated that "differences may not be as important for annual emissions of major gaseous species (e.g., NH_3, CH_4) as for shorter-term emissions of [particulate matter] and odors."(page 48) and its critique of the "emissions factors" model currently used by the EPA was devastating. The NAS states that "…if emission factors do not exist or are incorrect, the permitting process is flawed"(page 113) because if the factors needed to determine the air pollution from a CAFO cannot be measured or modeled, no permitting process has the information necessary to grant the permit.

Large Confined Animal Feeding Operations (CAFOs) such as dairies are a point source of both water and air pollution that fall unevenly across the region in which they operate. Of these, air pollution generally imposes the most immediate and significant costs on surrounding residents. Those residents closest to the CAFO bear most of these costs.

CAFOs have tried to prevent nuisance suits over air pollution through Right-To-Farm laws and by moving to areas with a lax environmental regulatory structure. In general, those county-level regulations that cause CAFOs to locate elsewhere directly address the short term air pollution concerns that local residents feel would destroy property values.

Right-to Farm laws and other ordinances that diminish the ability of residents to control air pollution on their property attack the right of exclusive use, a fundamental legal principle that those who have no claim on property should not gain economic benefit from enjoyment of the property.

Any violation of the right of exclusive use normally carries either payment of compensation to the rightful owner or assessment of a penalty and both the legal and economics professions view the right of exclusive use as fundamental to the long term beneficial use of property. If exclusive use is violated, those who own land cannot be assured of compensation for the use of their property and they tend to adopt short sighted land use policies. This lowers both the efficiency with which the property is used and the long-term societal benefits gained from use of the property.

It is sometimes claimed that the setback provisions of a CAFO permitting regulation prevent the loss of exclusive use. This is unlikely for two reasons: First, setback requirements usually stipulate distances that are considerably less than those that have already been shown to be associated with significant losses in property and tax values. And second, the setback itself establishes an area around a CAFO where normal development and normal residences are not permitted unless the owners are willing to waive all rights to exclusive use. This usually means that every setback area becomes a center of zero growth.

When a CAFO enters a rural region, it promises jobs and economic impact for the region in return for land, water, access, power and the other factors required for the CAFO to operate. These promises are based on asymmetrical information--a situation where one of two parties in an agreement (here, the dairy CAFO and the citizens of the region) possesses more information than the other about the nature of the bargain.

The dairy CAFO is typically well informed about the legal contract with its organization and its promises (implied contract) to the region because it signed the legal contract and it extended the promises on which the implied contract is based. But the residents of the region are privy to very little information about the CAFO's explicit contract with its organization. As a result, there is an incentive on the part of the CAFO to shift costs between the contracts based on each party's knowledge of these costs. The party with the least information about costs (the residents of the region) is most likely to have costs shifted in its direction, and the costs are most likely to be the costs of pollution.

The result is the creation what economists call a moral hazard where one party is better informed than the other about the characteristics of the transaction. By definition, a moral hazard leads to lower efficiency and to higher costs to the party that is least informed (in this case, a higher cost to the region that hosts the dairy CAFO).

With dairy CAFOs, the moral hazard is not uniformly spread across the region. Instead, it is concentrated on those rural agricultural landowners who are closest to the CAFO and it often manifests itself in loss of the right of exclusive use because of air pollution that renders the neighbors property less attractive and, for many activities, unusable.

The economic loss suffered by the neighbors of a CAFO can be significant. A large body of research shows that costs shifted to the residents of the region by a CAFO lower the sales and taxable value of neighboring properties. This usually leads to property tax adjustments by county assessors that lower taxes to reflect the decreases in property value.

The economic characteristics of a CAFO are fundamentally incompatible with rural regional economic development. Regional economic development proceeds on the premise that the wages paid and purchases made by a company are transferred to other individuals or companies in the region. The “multiplier effect” assumes that money is spent within the confines of the region and it does not “leak” into other areas of the state or nation. CAFOs are unlikely to satisfy this assumption for the following reasons:

(1) As a capital intensive company, a CAFO is designed to minimize the number of workers and hence, it minimizes its employment impact on the region. The size of the employment multiplier further depends on the purchases made in the region, but CAFOs are more likely to purchase their inputs from a great distance away, bypassing local providers.

(2) The numerous tax write-offs are possible because CAFOs are sometimes treated as industries and, at other times, treated as farms. This significantly decreases the amounts of taxes paid locally. At the same time, the operations of the CAFO can create social, health and traffic costs that the local government must finance.

(3) CAFOs are designed to use out-of-area suppliers. These may be other members of their organization, or they may simply be the lowest cost supplier who ships into the region. The transportation links the CAFO uses to bring its supplies into the region are also used to ship what it produces out of the region. The overall effect is that of the camper who brings what he needs, stays for a while, and departs--leaving behind whatever pollution and environmental damage were caused by the stay..

As a result, a large body of research shows that large CAFOs decrease aggregate employment, growth rates, and other economic activities in rural communities.