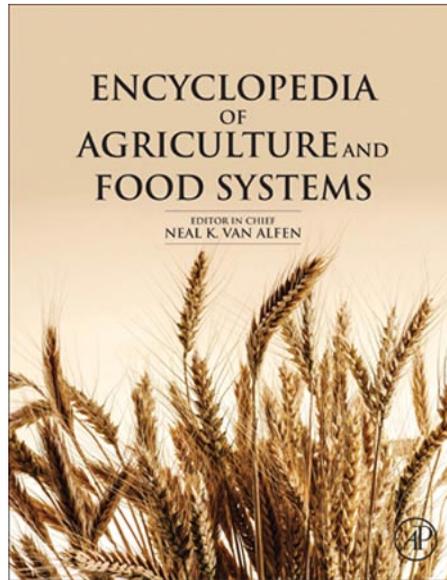


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Industrialized Farming and Its Relationship to Community Well-Being

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Glossary

Community social fabric Refers to social organization, the features of a community that reflects its stability and quality of social life. Impacts on community social fabric are seen in social indicators such as population change; social disruption indicators; educational attainments and schooling quality; changes in social class structure; health status; and changes in local governance.

Family farm A farm operation where the farm household owns and controls the majority of farm production factors, land, labor, capital, technology, and management.

Industrial farm A nonhousehold-based farm production unit, with absentee ownership and control over production factors.

Marketing contracts The mechanism used by farm operators to reduce their exposure to market price swings; these contracts stipulate a commodity price or pricing mechanism for delivered goods and are used mainly for crop and dairy commodities.

Organizational changes in farming An increase in the relative proportion of hired to family labor, greater use of incorporation as a form of legal organization, and the movement toward a more integrated industry from farm to grocery, whose 'hallmark' is 'contract production and vertical integration.'

Organizational measures of industrialized farming Vertical integration of corporations into farming; contract farming arrangements; absentee ownership of production factors; dependency on hired labor; operation by farm managers, as opposed to material operation by family members; and legal status as a corporation.

Production contracts Mechanisms that involve cost-sharing arrangements and payment for farm operators' services usually for livestock production except for dairying.

Socioeconomic well-being Refers to standard measures of economic performance (employment, income, and business activity) and to a broader range of socioeconomic indicators used by sociologists to tap material conditions of families and populations (family poverty rates and income inequality).

The industrialization of farming The transformation whereby farms have become larger-scale, declined in number, and integrated more directly into production and marketing relationships with processors through vertical or contractual integration.

Vertical integration Operation of farms by firms that also operate in at least one other stage of the food chain, such as input supply, processing, and marketing.

Introduction

Public concern about the consequences of nonfamily owned and operated, industrialized farms for communities dates back to the 1920s (Boles and Rupnow, 1979). (Boles and Rupnow (1979, p. 471) state that public concern about corporate influence in farming began in the 1920–30 period when concern about large, publicly held corporations centered on fears about the effect of mechanization, foreclosure of farm land mortgages held by corporations, and corporate monopoly of land.) The first published research on the topic appeared in the 1930s. Since then, government and academic researchers have produced numerous studies showing the potential for adverse impacts on community life. The bulk of evidence indicates that public concern about the detrimental community impacts of

industrialized farming is warranted. This article summarizes results from more than five decades of research that has investigated the relationship between nonfamily industrialized farming and community well-being. The purposes of this article are: To document the types of studies that have been conducted on the topic; to delineate their results as to whether adverse consequences were found; and to document the aspects of community life that may be jeopardized by industrialized farming. This article is grounded in Lobao's (1990) longstanding research on farm change and its impacts on communities and families (Barlett *et al.*, 1999; Belyea and Lobao, 1990; Kenney *et al.*, 1989; Lasley *et al.*, 1995; Lobao (Reif), 1987; Lobao, 1990; Lobao (Reif) and Jones, 1987; Lobao and Meyer, 1995a,b, Meyer and Lobao, 1997; Lobao and Schulman, 1991; Lobao *et al.*, 1993; Lobao and Thomas,

1992, 1988) as well as her research on the broader topic of community development. (Lobao, 1993a,b,c, 1996, 1998; Lobao and Rulli, 1996; Lobao *et al.*, 1999). She updated this research in 2000 (Lobao, 2000), which was further updated in 2006 (Stofferahn, 2006), and which was updated and published in 2008 (Lobao and Stofferahn, 2008). This article further updates the research on the topic, and it is based on a systematic article of 56 studies on the topic of industrialized farming and community well-being.

The industrialization of farming refers to the transformation whereby farms have become larger-scale, declined in number, and integrated more directly into production and marketing relationships with processors through vertical or contractual integration (Drabenstott and Smith, 1996, p. 4). In the past two decades, farms in the farming-dependent Heartland states (The states forming the nation's farm heartland extend from the Mississippi River to the Rocky Mountains and from Texas to Canada. These states are Colorado, Iowa, Kansas, Minnesota, Missouri Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, and Wyoming (Barkema and Drabenstott, 1996, p. 1). More than two-thirds of the nation's farm-dependent counties are located in these states.) declined by roughly one-fourth, whereas average acreage grew by one-fourth to approximately 750 acres (Barkema and Drabenstott, 1996, p. 62). As the number of farms declines, production becomes concentrated on larger farms. Nationally, small farms (defined here as those having annual gross sales of less than US\$50 000) made up nearly three-quarters of the nation's farms in 1995 but they produced only approximately 8% of sales, whereas the top 2% of farms (those with sales of over a half million dollars annually) accounted for 44% of all sales (Sommer *et al.*, 1998, p. 10). Half of the nation's agricultural sales are produced by 3% of farms (Sommer *et al.*, 1998, p. 8).

Accompanying the growth of scale of operations are organizational changes in farming. These include an increase in the relative proportion of hired to family labor and greater use of incorporation as a form of legal organization. (In 1995, more than 98% of the nation's 2.07 million farms were classified as family operations. A total of 91% were sole proprietorships and 5% were partnerships. Only 3% of all farms were incorporated, and of these, 86% were considered family-held corporations by United States Department of Agriculture (USDA) as they had 10 or less stockholders (Sommer *et al.*, 1998, p. iv). Another organizational shift is the movement toward a more integrated industry from farm to grocery, whose 'hallmark' is "contract production and vertical integration that is linking farmers, food processors, seed companies, and other agribusiness" (Barkema and Drabenstott, 1996, p. 64). Vertical integration refers to operation of farms by firms that also operate in at least one other stage of the food chain – such as input, supply, processing, and marketing. In addition to their direct involvement in farm production, agribusiness firms contract with farmers for goods and services. Two types of contracting arrangements should be distinguished. Marketing contracts are used by independent operators to reduce their exposure to market price swings; these contracts stipulate a commodity price or pricing mechanism for delivered goods and are used mainly for crop and dairy commodities. Production contracts involve cost-sharing arrangements or

payment for operators' services usually for livestock production except for dairying. On farms using production contracts, the largest share of farm sales accrues to the contractor (an agribusiness processor and/or producer), with the operator generally receiving a fixed fee for services (Sommer *et al.*, 1998, pp. 16–17). Production contracts extend agribusiness firms into direct farm production using the vehicle of the local farmer. To sociologists, production contract farms are an integral component of the agribusiness chain in which agribusiness firms, depending on corporate strategy, may enter farming through direct operation of their own units or through employing local farmers to participate in production homework. Sociologists are concerned with contract farming because of the risks it poses to agrarian social structure, communities, and families. (Sociologists are concerned with contract farming insofar that: it alters agrarian social structure by creating a segment of farmers who are the structural equivalent of factory production homeworkers; it extends the influence of industrialized farming in a community; and it erodes formally independent operators' autonomy in direct production, farm decision-making, and control over assets. Sociologists also are concerned with the general well-being of contractees (operators) and their families given their asymmetrical relationship in bargaining power with agribusiness firms.)

In classifying farms as 'industrialized' or 'family,' social scientists distinguish between the construct (an ideal-type concept) and its actual measurement (variables used to define the concept in practice). Different classifications of farms have been developed over the years because the structure of agriculture is continually changing. The term 'farm structure' or 'agricultural structure' refers to a broad set of characteristics that describe US farms, as well as the distribution of farm production resources and returns to those engaged in farm production activities (Sommer *et al.*, 1998, p. 6). Sommer *et al.* (1998, p. 6) provide a useful overview of the criteria used to classify farms. For sociologists, family farming is identified by whether the family unit owns a majority of capital resources, such as land, machinery, buildings, makes the majority of managerial decisions, and provides the bulk of labor (Goss *et al.*, 1980). Social scientists often use farm scale as a proxy measure to classify farms, because it is simple, clear, and often correlated with organizational characteristics of units. A recent USDA article classifies 'commercial farms' as those with US \$50 000 or more in gross sales and 'small farms' as those with gross sales of less than US\$250 000 (Sommer *et al.*, 1998, p. 69). Family farms (organized as sole proprietorships, partnerships, or family corporations) with gross sales of more than US\$25 000 are classified as 'large-family farms,' whereas 'nonfamily farms' are any farms organized as nonfamily corporations, cooperatives, and farms operated by hired managers (Sommer *et al.*, 1998, p. 72). 'Family' farms and 'industrialized' farms are constructs at opposite ends of the farm continuum. To sociologists, the construct 'family farm,' is that where the farm household owns and controls the majority of farm production factors, land, labor, capital, technology, and management. At the other end of the farm continuum, the construct, 'industrial farm,' refers to a nonhousehold-based production unit, with absentee ownership and control over production factors. As with nonfarm firms, industrialized farms have a division of labor among owners, managers, and

labor with different groups of people assigned to different positions in the production process. Industrial farms "...are owned by one group of people, managed on a daily basis by another person or group, and worked by yet another group" (Browne *et al.*, 1992, p. 30). Between these 'ideal-type' descriptions of family and industrialized farms are other arrangements in organizing farming, such as part-owner farming (a form of family farming where the operator both owns and rents the land). Again, these are 'ideal-type' constructs, whose specific definition and measurement must depend upon the time period and public context.

When social scientists refer to 'industrialized' farms, they invariably are referring to both scale and organizational characteristics of the farm unit. (Social scientists measure industrialized farming by both scale and organizational variables. Scale is usually measured by sales and sometimes by acreage and real estate and for livestock operations, animal inventory. The actual dollar value for scale indicators used by analysts to indicate a 'large-scale' farm will obviously vary by the time period of study. In addition, what is considered a 'large-scale farm' also varies by regional context and commodity. Organizational measures of industrialized farming include vertical integration of corporations into farming; production contract farming arrangements; absentee ownership of production factors; dependency on hired labor; operation by farm managers, as opposed to material operation by family members; and legal status as a corporation (family or nonfamily) or syndicate.) In general, but not always, scale will coincide with organization. That is, large-scale farms (relative to smaller farms) are more dependent on hired labor and managers and more likely to have absentee owners, to be incorporated, and to be vertically integrated with agribusiness. For example, in 1995, mean gross sales of corporate farms were US\$576 925 as compared with US\$54 287 for sole proprietorship farms and US\$218 795 for farms organized as partnerships (Sommer *et al.*, 1998, p. 15). Farms with production or marketing contracts also tend to be larger. In 1995, farms with marketing contracts (approximately 11% of all farms) had mean gross sales of US\$242 888; whereas farms with production contracts (2.3% of all farms) had mean gross sales of US\$617 858 (Sommer *et al.*, 1998, p. 12). For the purposes of this article, the umbrella term 'industrialized farm' is used to refer to both scale and operating characteristics of industrialized farms. Where it is useful and feasible to do so, a distinction is made between between scale and operating characteristics.

This article is organized into four sections. First, the article discusses the history of government and academic concern about the risks of industrialized farming for community well-being, from the 1930s to the present. Second, the article summarizes the findings from Lobao's research and that of her colleagues. Third, the article findings from five decades of social science research. It is divided into several subsections discussing, respectively, research issues involved in analyzing industrialized farming and community impacts, focusing on indicators of industrialized farming and types of consequences that a summary evaluation must consider; the various research designs used to assess the consequences of industrialized farming; and a summary of the results of past studies as to whether detrimental impacts were found. Eventually, the article ends with summary and conclusion.

It should be noted that public concern about industrialized farms extends beyond the well-being of states and their communities. Rather, public as well as academic concern extends to national food system issues, such as agribusiness concentration, consumer health, food safety, and sustainability of the national ecosystem. The immediate effects of industrialized farms, however, are on the day-to-day lives of people residing in the places where these farms are located. It is also at this level that social scientists have conducted a great deal of research over a long period of time. For these reasons, this article deals with the consequences of industrialized farming for well-being at the community level.

History of Public, Government, and Academic Concern with the Consequences of Industrialized Farming

More than a half century of research centers on the potential detrimental social consequences of industrialized farming. Since 1930s, the government and academic researchers have investigated the extent to which large-scale, industrialized farms adversely affect the communities in which they are located. One of the first series of studies was conducted by a sociologist, Tetreau (1938, 1940), who found that large-scale, hired labor-dependent farms were associated with poor social and economic well-being in rural Arizona communities.

In the early 1940s, the USDA sponsored a research project on the effects of industrialized farming using a matched-pair of two California communities, Arvin where large, absentee-owned, nonfamily operated farms were more numerous, and Dinuba, where locally owned, family operated farms were more numerous. The article on this project was prepared by Walter Goldschmidt, a USDA anthropologist. The purpose of the study was to assess the consequences of a California law with a provision placing acreage limitations on large farms located in California's Central Valley, so as to support family-size farms in the region. Goldschmidt (1978a, p. 458) notes that "The comparative study of Arvin and Dinuba was designed to determine the social consequences that might be anticipated for rural communities if the established law was applied or rescinded."

In this article, Goldschmidt (1978a) systematically documented is the relationship between large-scale farming and its adverse consequences for a variety of community quality of life indicators. Goldschmidt (1978a) observed that, relative to the family farming community, Arvin's population had a small middle class and high proportion of hired workers. Family incomes were lower and poverty was higher. There were poorer quality schools and public services, fewer churches, civic organizations, and retail establishments. Arvin's residents also had less local control over public decisions, or 'lack of democratic decision-making,' as the local government was prone to influence by outside agribusiness interests. By contrast, family farming Dinuba had a larger middle class, better socioeconomic conditions, high community stability, and civic participation. Goldschmidt's review was eventually published as Congressional Testimony (1968) and as a book (1978a). Goldschmidt's conclusion that large-scale industrialized farms create a variety of social problems for communities has been confirmed by a number of subsequent studies. One criticism

of Goldschmidt's (1978a) research was published by agricultural economists Hayes and Olmstead (1984). They did not challenge Goldschmidt's (1978a) conclusion that large-scale, industrialized farms have adverse community impacts. Rather they argued that Arvin and Dinuba were not as closely matched research sites in the 1930s as Goldschmidt had intended. Nearly four decades after Goldschmidt's study, the state of California, through its *Small Farm Viability Project* (1977, pp. 229–230), affirmed Goldschmidt's conclusions by revisiting Arvin and Dinuba. They concluded that: "The disparity in local economic activity, civic participation, and quality of life between Arvin and Dinuba...remains today. In fact, the disparity is greater. The economic and social gaps have widened. There can be little doubt about the relative effects of farm size and farm ownership on the communities of Arvin and Dinuba."

As the US agricultural structure has evolved toward larger and fewer farms, government and academic researchers have continued to investigate the extent to which large-scale, non-family owned and operated industrialized farms adversely affect communities. Congress has conducted inquiries, such as that by the Senate Subcommittee on Monopoly dealing with Corporate Secrecy and Agribusiness, in which rural sociologists and agricultural economists provided testimony in 1973 about the dangers to communities posed by increasing corporate control of agriculture (Boles and Rupnow, 1979, pp. 468–469). The Office of Technology Assessment (OTA), concerned that the relative growth of large-scale industrialized farms might have adverse impacts on communities, commissioned a series of research papers on the topic. The OTA research came as a request from Congress and was published first as a review (OTA, 1986) and later as a book (Swanson, 1988). Federal and state funding has been directed to at least two Agricultural Experiment Station projects that assess the community consequences of large-scale, nonfamily farms: Project S-148 'Changing Structure of Agriculture: Causes, Consequences, and Policy Implications' (1982–86); and Project S-198 'Socioeconomic Dimensions of Technological Change, Natural Resource Use, and Agricultural Structure' (1986–90). The later project resulted in a monograph on the consequences of industrialized farming for communities (Lobao, 1990) among other publications.

In the 1990s, public concern with industrialized farming has centered particularly on large integrated livestock producer/processor enterprises. Recent studies supported by the NCRCRD (1999), the University of Missouri Agricultural Experiment Station (Seipel *et al.*, 1998, 1999) and Duke University Medical School (Schiffman, 1998) have documented a variety of adverse impacts of these enterprises on communities, households, and individuals.

In summary, there has been more than 50 years of public, academic, and government concern that large-scale, industrialized farms jeopardizes community well-being. This concern has resulted in numerous studies, in government-sponsored reviews, and in congressional hearings. In the 1990s, public concern with industrialized farming has increased due to the problems posed by large-scale animal confinement operations. Social scientists have responded to this increased public concern by initiating a number of recent projects, leading to a new generation of literature on the community consequences of industrialized farming.

Research by Lobao and Colleagues

The most recent, comprehensive sociological study on the effects of industrialized and family farming on communities was conducted by Lobao (1990). This study examined relationships across more than 3000 US counties. The study used both farm scale and organization to measure farm structure; examined direct and indirect consequences of farming patterns; and examined long-term and immediate relationships for two time periods, 1970–80. To measure community outcomes, the study focused mainly on socioeconomic well-being indicators (median family income, poverty, and income inequality between families measured by the Gini coefficient. The Gini coefficient is used by the federal government to document income inequality in the US and is the measure used most frequently in recent studies of economic development across spatial units such as counties (Lobao *et al.*, 1999)) but also included of community social disruption (births-to-teenagers) and health status (infant mortality). The study examined the effects of three different community farm structures: 'smaller family farming' (small, part-time family farms); 'larger family farming' (moderate-size, capital-intensive, family operated units using little hired labor), and industrialized farming (large-scale, hired-labor-dependent farms).

The community farming structures were constructed based on the research by Wimberley (1987). Each of the measures of farm structure was a composite of scale and organizational indicators, created through a statistical technique called factor analysis. Multivariate statistical methods, regression, and discriminant analysis, were used to analyze the effects of the three farm structures net of other community conditions, including nonfarm industrial employment, establishment size of local businesses, human capital, and demographic characteristics of the population (educational attainments, ethnicity), unemployment, social welfare payments, unionization, and spatial factors, such as region of the country.

The findings were the following. There was consistent support that moderate-sized family owned and operated farms benefit communities. Counties where these types of farms (i.e., larger family farming) predominated had better socioeconomic well-being (lower family poverty, higher median family income, lower unemployment, and lower infant mortality). The beneficial effects of this family farming were found across the US, for two time points, 1970 and 1980. Moreover, this type of farming continued to result in beneficial effects over time. Counties where larger family farming was greater in 1970 continued to have better socioeconomic well-being over time. This study indicates that the 'high road' to community development is a farming system based on moderate-sized family operations. Such farming not only increases aggregate well-being, as indicated by income levels, but it also sustains a larger middle class, as indicated by lower income inequality and poverty, and thus allows more families to benefit from the income produced.

Where industrialized farming was greater, however, there were mixed effects on community well-being, either detrimental or no statistically significant impacts. For example, industrialized farming had no relationship with family poverty or median family income at either of the two single time points (1970 and 1980). Industrialized farming, however, was

related to higher income inequality at both time points, and also to lower family income, higher poverty, and higher income inequality across time, over the decade from 1970 to 1980 (i.e., counties with greater industrialized farming in 1970 experienced relative declines in socioeconomic well-being over the decade). The finding that industrialized farms are associated with high income inequality indicates that this farming segments social class structure by polarizing families into richer and poorer income groups. Income polarization is related to other social problems, such a crime and other breakdowns in the social fabric of the community. The study also found that where very small farms predominated, well-being was poorer. This indicates that researchers should distinguish between small and moderate family operated units in assessing consequences for well-being. Smaller family farming tends to predominate more in the South.

As would be expected in a postindustrial society, nonfarm manufacturing and service employment were stronger predictors of community well-being than farming. It is important to note, however, that the study found that farming, nonfarm industry, and other local characteristics were interrelated, mutually sustaining a population in a locale. (That farming has a smaller impact on community well-being than does nonfarm industry is expected even for communities highly dependent on farming. Farming is interrelated with local nonfarm industry and other sectors, forming a community livelihood strategy which sustains a population in a locale. Communities where larger family farming predominated had a much higher wage, durable manufacturing employment, and greater employment in local schools and retail industries. Communities where industrialized farming predominated had greater employment in lower wage manufacturing such as food processing, less employment in education, health, and retail services, a higher minority population, and provided relatively higher per capita benefits to welfare recipients.) Good quality farms and high quality local employment were interrelated, with 'larger family farming' associated with greater employment in high wage manufacturing and other beneficial sectors. The study offered consistent support that when farming is an economic development strategy of choice, moderate-sized family farms are best for communities.

This research on farming systems and community and regional well-being has been elaborated in other reviews (Kenney *et al.*, 1989; Lobao, 1987, 1993c, 1996, 1998; Lobao and Jones, 1987; Lobao and Schulman, 1991; Lobao *et al.*, 1993; Lobao and Thomas, 1992).

One of the most recent sociological analyses on industrialized farming and inequality is that conducted by one of Lobao's students (Crowley, 1999). The methodology used in the study is similar to that followed in Lobao (1990), but the indicators of farm structure differ. She analyzed the effects of farm concentration using several indicators (concentration of land, value of land and buildings, and the value of equipment and machinery, indicators measured by the Gini coefficient), and data for all (1053) counties in the North Central US (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, North Dakota, South Dakota, and Wisconsin). She analyzed consequences of these dimensions of farm-sector concentration for local levels of family poverty and family income inequality net of other community

characteristics. In counties where farm-sector concentration was higher (i.e., a few large farms held a disproportionate share of local property in land and real estate), there was significantly higher poverty among families and significantly greater income polarization between families. Moreover, where farm concentration was higher, residents had lower education.

In the 2004 study, Crowley and Roscigno documented how concentration of agricultural resources shapes rural community stratification through the political economic process. In addition to measures of farm sector resource concentration, measured by the Gini coefficient, and labor endowment (percentage of county work force employed in core, extractive, competitive, and state sectors), they included measures of political process (proportion of votes in presidential election for Democratic Party, average household payment rates, average per farm county level spending on agricultural assistance), and worker power attributes (percentage of manufacturing employees that are unionized, proportion of population that are a minority, percentage of population, aged 25+ years with a high school diploma, and proportion of labor force unemployed). Using data for all (1053) counties in the North Central US, it was found that dimensions of farm sector concentration shape both poverty and inequality. Furthermore, they found that farm sector concentration is explained by political economic processes, and these processes mediate the negative effects of land concentration on economic well-being. In particular, they found that relative to large-scale farms, capital concentration promotes government spending that benefits large farms, whereas it blocks government or labor-market programs that assists farmers whose farms it consumes and farm workers it exploits. These attempts are evident by the increased funding for agricultural research which benefits large farms, decreased redistribution efforts through transfer payments to benefit small farms and workers, decreased political consciousness through lower levels of Democratic Party support, and reduced labor power through lower unionization rates and education and higher unemployment and minority representation.

To provide a balanced assessment of the consequences of industrialized farming, it is useful to review the past findings of other investigators, using different methodologies, for different time periods, and from different disciplines. In the Section Review of Past Research on Industrialized Farming and Well-Being, the types of studies conducted on the relationship between industrialized farming and community well-being and their conclusions are discussed. On balance, the social science evidence accumulated from these and other studies supports public, academic, and government concern about the potential risks of industrialized farming. Recent research indicates that the public's welfare is at risk in at least four major areas. Industrialized farming (1) has a detrimental impact on certain aspects of socioeconomic well-being; (2) disrupts the social fabric of communities; (3) poses environmental threats where livestock production is concentrated; and (4) is likely to create a new pattern of 'haves and have nots' in terms of agricultural production, whereby some communities gain large, industrialized farms (and attendant social problems), and others lose their farming base as production becomes concentrated elsewhere in the state and regional economy. (Drabenstott and Smith, 1996, p. 4)

Review of Past Research on Industrialized Farming and Well-Being

Over the past half century, numerous studies, spanning different time periods and regions of the county have tended to find that large-scale industrial farming has detrimental community impacts. This does not mean that every study has produced these results, but rather that empirical evidence accumulated over the years shows a repeated trend that large-scale industrialized farms have adverse impacts on a number of different indicators of community well-being and that this trend is sufficiently established in the social sciences, to the point that almost all sociological studies begin with the working hypothesis (research expectation) that large-scale industrial farms will have adverse community effects. The extent to which past research supports this hypothesis is discussed in the Section Research Issues Involved in Analyzing Industrialized Farming and Its Community Impacts. It should be stressed that no single study can provide a definitive answer as to whether large-scale industrialized farming will or will not adversely affect public well-being in any particular region or state. This is due both to the complexity of the research question and to the lack of existing data required to fully analyze it. At best, a single study can assess the extent to which certain indicators of industrialized farming have adverse effects on certain indicators of community well-being in certain places and time periods. Therefore, the most comprehensive answer to the question of whether industrialized farming adversely affects public well-being comes not from a single study but from assessing the conclusions of decades of past research.

Research Issues Involved in Analyzing Industrialized Farming and Its Community Impacts

To adequately assess the consequences of large-scale industrial farming, the following issues about indicators of industrialized farming and types of consequences must be considered.

Industrialized farming should be analyzed using scale as well as indicators of farm organization. Scale is usually measured by sales or sometimes acreage. As a measure of industrialized farming, scale is limited for several reasons: Family owned and operated farms may be large scale owing to technology; scale alone does not capture organizational features of industrialized farming, such as absentee ownership and nonfamily control over production, that are thought to put communities at risk. Organizational measures of industrialized farming include: Vertical integration of corporations into farming; contract farming arrangements; absentee ownership of production factors; dependency on hired labor; operation by farm managers, as opposed to material operation by family members; and legal status as a corporation. With regard to legal status, family and nonfamily-held corporations should be distinguished. (It should also be recognized that farms may be incorporated because of family farmers' interests in estate planning, greater assurance of business continuity, limited liability, and income tax advantages.)

To adequately assess consequences for community well-being, the full array of outcomes should be considered. Research

points to three major sets of consequences of industrialized farming in a community: impacts on socioeconomic well-being, community social fabric, and environment.

Socioeconomic well-being refers to standard measures of economic performance (essentially employment, income, and business activity) and to a broader range of socioeconomic indicators used by sociologists to tap material conditions of families and populations (family poverty rates and income inequality).

Community social fabric refers to social organization – the features of a community that reflects its stability and quality of social life. Impacts on community social fabric are seen in social indicators such as population change; social disruption indicators (crime rates, births-to-teenagers, social-psychological stress, community conflict, and interference with enjoyment of property); educational attainment and schooling quality; changes in social class structure (decline of local middle class and in-migration of low-wage workers); health status, such as mortality rates; civic participation (e.g., declines in church attendance, voluntary organizational membership, and voting); and changes in local governance, such as loss of local control over community decision-making, and resource/fiscal pressures on local government, such as those due to increased need for social services and diversion of public funds to subsidize agribusiness development.

Environmental indicators include quality of water, soil, and air, energy usage, and environmentally related health conditions.

Industrialized farming has both direct and indirect consequences for community well-being. Both sets of consequences should be considered. Industrialized farms directly influence community well-being: Through the quantity of jobs produced and the earnings' quality of those jobs; by the extent to which these farms purchase inputs and sell outputs locally; by affecting the quality of local environmental conditions; and by affecting local decision-making about economic development and other public-interest areas relevant to community quality of life.

First-order, indirect effects on local economic performance and general socioeconomic conditions occur because the quantity and quality of jobs plus purchases affect total community employment, earnings, and income (e.g., economic multiplier effects), the local poverty rate, and income inequality. First-order, indirect effects on local social fabric occur because the quantity of jobs created by industrial farms affects total community population size; the quantity and quality of jobs affect social class composition, such as when an increase in hired farm workers reduces the proportion of the local middle class; local control over community decision-making may erode or become conflictual, as the interests of industrialized farmers and absentee owners are detached from those of local residents.

Second-order, indirect effects on local social fabric work through first-order effects cited above. Population size and social class composition are related to indicators of community social disruption, such as crime, family instability, the high school dropout rate, and conflict resulting in civil suits; local demand for schooling, public assistance, health, and other social services; and the property tax base (Boles and Rupnow, 1979; Freudenburg and Jones, 1991; Murdock *et al.*, 1988;

NCRCRD, 1999 (Rapid increases in population size and poorer social class composition tend to be related to the indicators of social disruption noted and also place increased demands on local schooling and other social services. Population decline reduces local demand for services and the property tax base.). Decline of local control over community decision-making creates problems associated with poor governance, such as the potential for diversion of public resources toward financial incentives supporting the interests of agribusiness developers over the community at large; and the loss of public and private revenues to support local schools, community services, and infrastructure, which contributes to a downward spiral of community social and economic conditions.

The direct and indirect paths by which industrialized farming may affect community well-being are delineated in various studies, including Boles and Rupnow (1979), Lasley *et al.* (1995), Lobao (1990), MacCannell (1988), and the NCRCRD (1999).

Differences in impacts for diverse social groups within the community must be considered. Changes in farming affect social groups differently, depending upon their age, class position, and residents' proximity to industrialized farms. The elderly and poor are affected by rising costs of housing and services whenever large corporations migrate to a rural community (Summers *et al.*, 1976). Within communities with large confined animal-feeding operations (CAFOs), residents who live closer to the operation review inability to enjoy their properties and physical and psychological problems associated with odor (Schiffman *et al.*, 1998; Wing and Wolf, 1999; Reisner *et al.*, 2004; Constance and Tunistra, 2005). Property closer to CAFOs has been found to fail to appreciate in value relative to places further away (Seipel *et al.*, 1998). Income generated by industrialized farming (relative to family farming and over time) also appears less likely to filter down to families of different social classes. As noted, Lobao (1990) and Crowley (1999) observed that income inequality was higher in communities where industrialized farming was greater.

There are long-term as well as short-term consequences of industrialized farming for communities and for regional development within a state. Industrialized farming puts a community on a path of development whose consequences are not fully manifest in the short term of 1 or 2 years. Lobao (1990) observed that some impacts were manifest a decade later. As noted earlier, counties with greater industrialized farming in 1970 had a significantly poorer well-being a decade later: These counties had a lower median family income, higher family poverty rates, and higher income inequality relative to other counties and net of past county conditions. For the heartland states, economists at the Federal Reserve Board of Kansas City (Drabenstott and Smith, 1996, p. 4) indicate that differences in communities will widen over time. According to these economists, industrialized agriculture will have two effects on rural communities. Industrial agriculture production and processing will cluster in some communities resulting in an increase in jobs and income. The economic links between industrial agriculture and communities, however, will be different than they were under commodity production because more production inputs are purchased from nonlocal sources, and more of the profits go to nonlocal owners of the firm.

Types of Studies Conducted on the Effects of Industrialized Farming: Research Designs and Methodology

Analysts have used primarily four different types of research designs to assess whether industrialized farms have detrimental impacts on communities. Each design has inherent strengths and limitations in being able to comprehensively analyze industrialized farming and its many potential impacts. (The author has outlined the strengths and limitations that are intrinsic to each research design. An individual study will vary as to how the analysts have exploited the strengths or overcome the limitations of the design.)

Case-study designs provide indepth analysis of the consequences of industrialized farming in a single or multi-community site. Usually, a comparative case-study design is implemented whereby a community or communities characterized by industrialized farming are contrasted with a community or communities with a different farming pattern (usually moderate-sized, family owned and operated farms). A comparative case-study design allows communities to be matched on similar background characteristics, such as location near cities and dependency on farming as an economic base, which helps to 'control' (or exclude) extraneous factors that influence the relationship between farming type and community well-being.

Macrosocial accounting designs involve statistical analysis of secondary or precollected data from government and other sources, such as the Census of Agriculture and Census of Population, to document relationships found in regional social structure (MacCannell, 1988). Community units, such as counties and townships, and states are the research focus. To assess the consequences of industrialized farming, analysts usually compare its effects relative to other farming (usually smaller or moderate-sized family farm units) and over time, while controlling for other, nonfarm factors known to affect community well-being. Multivariate statistical techniques, such as regression procedures and discriminant analysis, are used so that the effects of farm structure are assessed net of other community conditions.

Regional economic impact models use linear programming methods to estimate impacts on employment and income for regions, states, and smaller units such as counties and cities. These studies focus on the integration of business enterprises in markets and use programs, such as variants of input-output analysis, to model the backward and forward linkages with enterprises in other industries and to estimate resulting local impacts. The costs and benefits of varying different firm-level practices can be estimated.

Survey-design studies use samples of populations from any number of communities. These studies use interviews or questionnaires to document how industrialized farming affects residents or a particular social group exposed to industrialized farming as compared with those who are not (such as those residing in family farming communities). In contrast to macrosocial accounting and economic impact models which are based usually on secondary or precollected data, the researchers using a survey design collect primary data directly from individuals or families. Multivariate statistical procedures such as regression are used to assess the consequences of farm variables net of other community and individual characteristics.

Conclusions of Studies Examining Industrialized Farming and Community Well-Being

As noted, to assess the consequences of industrialized farming, it is useful to examine the body of past work conducted by researchers from various social science disciplines, over time, and using different methodologies. This analysis is built upon a metaanalysis by Lobao (1990), who examined research from 1930 to 1988. A metaanalysis is a quantitative assessment across individual studies that allows for comparison and integration of empirical findings (Cooper, 1989). Metaanalyses are useful for drawing systematic conclusions when many empirical studies by different researchers exist that examine the same research question. To develop the pool of empirical studies used in the analysis, the literature from 1988 to the present was surveyed. (This table has been updated from Lobao (2000) by adding all empirical studies published on the topic in *Rural Sociology* (the major scholarly journal in this field) since 2000. A review of reviews in the *American Journal of Agricultural Economics* (the major scholarly journal in this field) over the past 5 years was undertaken but no empirical studies were found on the topic. In addition, the following journals were surveyed for reviews relevant to the topic: *Agriculture, Food and Human Values*, *Culture and Agriculture*, *Sociologia Ruralis*, *Southern Rural Sociology*, *American Journal of Alternative Agriculture* (now the *Renewable Agriculture and Food Systems* journal), *Journal of Rural Studies* and the *International Journal of the Sociology of Agriculture and Food*. Two scholarly search engines – *Google Scholar* and *Agricola* were also used to find relevant reviews. Some reviews were located serendipitously. The programs and abstracts for the 2000–05 Annual Meetings of the Rural Sociological Society also were reviewed.) Table 1 shows the classification of findings by research design of 56 studies conducted since the 1930s on the effects of industrialized farming on community well-being. In most studies (all of the sociological studies), the authors hypothesize that where farms are of larger- scale or industrialized in terms of organizational characteristics, they have a detrimental impact on the indicator(s) of community well-being, relative to family owned and operated farms. These relationships are expected to be found across communities and over time.

Types of Detrimental Impacts Reviewed by Social Scientists

Social scientists review that industrialized farms are related to relatively worse conditions for the following community impacts:

Socioeconomic Well-Being

- Lower relative incomes for certain segments of the community: Greater income inequality (income polarization between the affluent and the poor) or greater poverty (Tetreau, 1940; Goldschmidt, 1978a; Heady and Sonka, 1974; Rodefeld, 1974; Flora *et al.*, 1977; Wheelock, 1979; Lobao, 1990; Crowley, 1999; Deller, 2003; Crowley and

Roscigno, 2004; Peters, 2002; Lyson and Welsh, 2005; Durrenberg and Thu, 1996).

- Higher unemployment rates (Skees and Swanson, 1988; Lyson and Welsh, 2005).
- Lower total community employment generated (Marousek, 1979; Thompson and Haskins, 1998).

Social Fabric

- Population: Decline in local population size where family farms are replaced by industrialized farms; smaller population sustained by industrialized farms relative to family farms (Goldschmidt, 1978a; Heady and Sonka, 1974; Rodefeld, 1974; Wheelock, 1979; Swanson, 1980).
- Class composition: Social class structure becomes poorer (increases in hired labor) (Gilles and Dalecki, 1988; Goldschmidt, 1978a; Harris and Gilbert, 1982).
- Social disruption:
 - increases in crime rates and civil suits (NCRCRD (1999);
 - general increase in social conflict (Seipel *et al.*, 1999);
 - greater childbearing among teenagers (Lobao, 1990);
 - increased stress, social-psychological problems (Martinson *et al.*, 1976; Schiffman *et al.*, 1998);
 - swine CAFOs located in census blocks with high poverty and minority populations (Wilson *et al.*, 2002);
 - deterioration of relationships between hog farmers and neighbors (Jackson-Smith and Gillespie, 2005; McMillan and Schulman, 2003); and
 - more stressful, less neighborly relations (Constance and Tuinstra, 2005; Smithers *et al.*, 2004).
- Civic participation: deterioration in community organizations, less involvement in social life (Goldschmidt, 1978a; Heffernan and Lasley, 1978; Poole, 1981; Rodefeld, 1974; Lyson *et al.*, 2001; Smithers, 2004).
- Quality of local governance: less democratic political decision-making, public becomes less involved as outside agribusiness interests increase control over local decision-making (Tetreau, 1940; Rodefeld, 1974; Goldschmidt, 1978a; McMillan and Schulman, 2003).
- Community services: fewer or poorer quality public services, fewer churches (Tetreau, 1940; Fujimoto, 1977; Goldschmidt, 1978a; Swanson, 1980).
- Retail trade: Decreased retail trade and fewer, less diverse retail firms (Goldschmidt, 1978a; Heady and Sonka, 1974; Rodefeld, 1974; Fujimoto, 1977; Marousek, 1979; Swanson, 1980; Skees and Swanson, 1988; Foltz *et al.*, 2002; Foltz and Zueli, 2005; Smithers, 2004; Gomez and Zhang, 2000).
- Reduced enjoyment of property: Deterioration of landscape, odor in communities with hog CAFOs (Schiffman *et al.*, 1998; Wing and Wolf, 1999, 2000; Constance and Tuinstra, 2005; Reisner *et al.*, 2004; Wright *et al.*, 2001; Kleiner, 2003; McMillan and Schulman, 2003).
- Health: neighbors of hog CAFOs review upper respiratory, digestive tract disorder, eye problems (Wing and Wolf, 1999, 2000; Constance and Tuinstra, 2005; Reisner *et al.*, 2004; Wright *et al.*, 2001; Kleiner, 2003).
- Real estate values: residences closest to hog CAFOs experience declining values relative to those more distant

NCRCRD, 1999, p.46; Seipel *et al.*, 1998; Constance and Tuinstra, 2005; Reisner *et al.*, 2004; Wright *et al.*, 2001).

Environment

- Ecosystem strains: depletion of water, other energy resources (Tetreau, 1940; Buttel and Larson, 1979; NCRCRD, 1999).
- Environmental consequences of CAFOs: increase in Safe Drinking Water Act violations, air quality problems, and increased risks of nutrient overload in soils (NCRCRD, 1999).

The studies indicate the types of community conditions associated with industrialized farming. To what extent do the studies overall provide evidence of detrimental impacts? With regard to the public policy interest in the topic, a count of studies where any detrimental impacts were found was conducted. The studies were classified according to whether the researchers review: Largely detrimental impacts; mixed findings (i.e., researchers review only some detrimental impacts were found); and no detrimental effects. Classifying the studies is somewhat complex because each may test a number of relationships about industrialized farming. The studies were placed into detrimental/no detrimental outcome categories based on whether the findings for the majority of relationships tested consistently fell into either of these two categories. Remaining studies are those in which the researchers found some detrimental impacts but other relationships were mixed, as described further below.

Out of the total 56 studies, researchers review largely detrimental impacts in 32, some detrimental impacts in 14, and no evidence of detrimental impacts in 10. Thus, 82% (46 out of 56) of the studies review finding some negative impacts of industrialized farming. This analysis provides quantitative evidence of the consistency in past research which has led to the working hypothesis that industrialized farming jeopardizes community well-being.

Of the 32 studies where social scientists found predominantly detrimental impacts, the following points should be noted. First, these studies use the four major types of research designs described earlier, comparative case study, macrosocial accounting, regional economic impact models and surveys. Studies reviewing detrimental impacts exist across all time periods and regions of the country. These studies review adverse outcomes for socioeconomic well-being, social fabric, and environmental conditions, using both scale and organizational measures of industrialized farming. In sum, the studies provide a great deal of evidence, produced over many years by researchers using different research designs, on the negative impacts of industrialized farming.

Of the 14 studies where social scientists review some, but not consistently negative impacts of industrialized farming, the following points should be noted. These studies provide mixed findings, in that though adverse effects on some community indicators were found, at least one of the following also occurred: Industrialized farming had no statistical relationship with other indicators (i.e., there was an absence of any relationship); industrialized farming had a trade-off effect,

with beneficial effects on certain indicators; industrialized farming did not consistently produce negative impacts for all time periods or regions; or industrialized farming produced beneficial effects for some groups but detrimental to other groups. Mixed findings are evident to a greater degree in regional economic impact and macrosocial accounting studies (Table 1).

Regional impact studies tend to show costs–benefits for economic performance indicators, with larger farms injecting greater total income into the community, but also producing less employment relative to smaller farms (e.g., Heady and Sonka, 1974; Marousek, 1979). Macrosocial accounting studies often test a number of relationships, adding to the greater potential of mixed findings. Lobao's (1990) study is an example. For counties in the 48 contiguous states, industrialized farming had no relationship with poverty and median family income at either of the two single time points (1970 and 1980); however, industrialized farming was related to higher income inequality at both time points and also to lower family income, higher poverty, and higher income inequality over the 1970–80 decade (i.e., counties with greater industrialized farming in 1970 experienced relative declines in socio-economic well-being over the decade).

Other research designs also provide examples of mixed findings. An example of a case study showing mixed effects is Wright *et al.* (2001) conducted in six counties with CAFOs in Minnesota. This study found that CAFOs had positive effects for farmers who expanded their operations; detrimental effects for neighbors to CAFOs whose ability to enjoy their property deteriorate; detrimental effects for younger and midsized producers unable to expand because expansion by others had restricted their access to markets; and no effects for those who were not neighbors or who were not expanding. A survey (Jackson-Smith and Gillespie, 2005) also found mixed effects for the impacts of large-scale, hired–labor–dependent dairies on community social relations. Farm size was the strongest predictor of neighbors' complaints about dairy operations, but demographic attributes of dairy farm owners had a greater affect on their relationships with neighbors than did farm size or use of hired labor.

The 10 studies that found no detrimental impacts of industrialized farming used mainly macrosocial accounting designs and tended to analyze only indicators of socioeconomic well-being. Lobao's and Schulman's (1991) study is an example. They examined whether industrialized farming was related to higher family poverty across agricultural regions in the US for the period 1970–80. They found no significant relationship in any of the four regions analyzed. Finally, a recent survey design study (Foltz and Zueli, 2005) found no evidence that large farms are unlikely to purchase locally once the presence of local suppliers was taken into consideration. Instead, they demonstrated that purchasing patterns are commodity specific and determined by community attachment, and local supply considerations.

Summary and Conclusion

Social scientists often debate whether empirical research should be oriented around disciplines' accumulated body of

Table 1 Summary of studies examining the effects of industrialized farming on community well-being

Research design	Findings with regard to detrimental effects		
	Detrimental	Some detrimental	No detrimental
Case-study	5 ^a	2 ^f	0
Macrosocial accounting	13 ^b	7 ^g	8 ⁱ
Regional economic impact	3 ^c	3 ^h	1 ^j
Survey	9 ^d	2 ⁱ	1 ^k
Other design	2 ^e	0	0
Total (N=56)	32 (57%)	14 (25%)	10 (18%)

^aGoldschmidt, 1944, 1968, 1978a, original; Small Farm Viability Project, 1977; Constance and Tuinstra, 2005; Whittington and Warner, 2006; McMillan and Schulman, 2003.

^bFujimoto, 1977; Goldschmidt, 1978b; Buttel and Larson, 1979; Swanson, 1980; MacCannell, 1988; Durrenberg and Thu, 1996; Lyson *et al.*, 2001; Peters, 2002; Wilson *et al.*, 2002; Crowley and Roscigno, 2004; Smithers *et al.*, 2004; Lyson and Welsh, 2005; Crowley, 1999.

^cGomez and Zhang, 2000; Foltz *et al.*, 2002; Deller, 2003.

^dTetreau, 1938, 1940; Heffernan, 1972; Rodefeld, 1974; Martinson *et al.*, 1976; Poole, 1981; Wing and Wolf, 1999, 2000; Reisner *et al.*, 2004; Seipel *et al.*, 1999; Kleiner, 2003.

^eSeipel *et al.*, 1998; Schiffman *et al.*, 1998.

^fNorth Central Regional Center for Rural Development (NCRCRD), 1999; Wright *et al.*, 2001.

^gFlora *et al.*, 1977; Wheelock, 1979; Harris and Gilbert, 1982; Skees and Swanson, 1988; Flora and Flora, 1988; Gilles and Dalecki, 1988; Lobao, 1990.

^hHeady and Sonka, 1974; Marousek, 1979; Thompson and Haskins, 1998.

ⁱHeffernan and Lasley, 1978; Jackson-Smith and Gillespie, 2005.

^jHeaton and Brown, 1982; Swanson, 1982; Green, 1985; Buttel *et al.*, 1988; van Es *et al.*, 1988; Lobao and Schulman, 1991; Barnes and Blevins, 1992; Irwin *et al.*, 1999.

^kFoltz and Zueli, 2005.

^lOtto *et al.*, 1998.

knowledge or, conversely, address the public interest and provide critical knowledge to build civil society (Burawoy 2005). Social science research on industrialized farming accomplishes both objectives. This study addresses the long-standing question, does industrialized farming jeopardize the well-being of communities, through systematically evaluating the findings of studies from the 1930s to the present. On the basis of a sample of 56 studies, 82% provide evidence of adverse impacts (57% reviewing largely detrimental effects and 25% some detrimental effects). These impacts were reviewed in studies using various research designs and across different time periods and regions.

The types of community impacts reviewed by social scientists were detailed earlier and are seen in the following general relationships. For socioeconomic well-being, researchers noted that industrialized farming was related to higher income inequality and to lower community employment, relative to moderate-sized family farming. Higher income inequality indicates that industrialized farming is less likely to sustain middle-class communities. Places with higher income inequality also are prone to other social problems because the gap between the affluent and the poor is greater. With regard to other socioeconomic impacts, such as total income injected into the community, regional economic impact models were likely to review beneficial impacts. The findings for income inequality, however, suggest that income growth is impeded in trickling down to families.

Studies assessing consequences for the social fabric of communities were likely to find detrimental impacts. Industrialized farming affects the social fabric of communities through altering population size and social composition which affect crime, social conflict, family stability, the local class structure, community participation, and local shopping patterns. Case studies reviewed the loss of local autonomy, in

which communities become increasingly subject to the influence of external business owners, whose interests may not be compatible with their own. More recent studies reviewed environment impacts. As large animal confinement operations house densely concentrated livestock, they are prone to a host of negative environmental impacts on water, air, and human health.

Given the relative consistency of past research, four sets of impacts of industrialized farming for farming-dependent communities in Heartland states can be anticipated: Impacts on socioeconomic well-being, social fabric, the environment, and regional imbalances. Communities that receive industrialized farming are likely to increase population relative to other communities (i.e., if local family farmers are not displaced). These communities may increase employment and per capita income, but as shown by the NCRCRD (1999) study, this may not be at a rate significantly different from comparison locales. Communities with industrialized farms are likely to experience greater income inequality; government services for the poor and other disadvantaged groups are likely to be needed in these locales. Communities that gain new industrialized farming will encounter stresses in the social fabric; community decision-making is likely to be more subject to corporate farm interests; and in the case of large livestock confinement operations, communities will be at risk for environmental and health problems, entailing the need for state and local government intervention. Communities that lose moderate-sized family farms, in part because of transaction cost advantages (e.g., volume buying–selling) and public incentives given to industrialized farms, will lose a base of middle class producers and experience rifts in social fabric, including population decline. These communities are likely to have declines in other businesses and in the local property tax base and may require government aid for social and public services.

Not discussed in this review are alternative economic development strategies that farming-dependent communities can pursue. Notwithstanding arguments that vertical integration into farming and production contracts are the only options left to keep American farmers farming, there are alternatives and some working examples are discussed in [NCRCRD \(1999\)](#). [Deller \(2003\)](#) suggested that if the results of their analyses held true for other time periods, then policies aimed at preserving family farms in the name of economic growth might be misplaced. Instead, policy should be aimed at the promotion of alternative sources of income for farm families.

During the time frame in which previous studies have been conducted, [Welsh \(2009\)](#) notes that the structure of agriculture has changed dramatically toward a bimodal distribution of large and small farms each operating in different market structures. He recommends that new studies examining the relationship between agriculture and community should examine the impacts of changed market structure as well as how public policies can mitigate the negative impacts of agricultural industrialization.

From a sociological standpoint, government plays a role in the types of consequences that industrialized farming will have for community well-being. It establishes the legal-institutional framework for regulating these farms. It establishes the incentive structure offered to agribusiness firms in their location decisions. It provides the public services needed to mop up the destabilizing impacts of industrialized farming, such as a rising crime rate, increased social conflict, and the need for social services to cope with a changing population. Moreover, government will need to provide the social services related to population decline and poverty alleviation in communities which lose family farming. (In nonfarm-dependent communities, government intervenes in a number of ways when paid employment, such as in manufacturing and mining declines: through programs such as unemployment insurance, various income transfers, such as welfare payments, for which independent farm operators are generally not eligible due to property ownership; through retraining programs, such as for workers who lose jobs because of North American Free Trade Agreement; and through enforcement of community rights in plant closure laws. Owing to their farming base, farm-dependent communities usually cannot make as full use of these social safety nets as can other communities.)

The role that laws regulating corporate farms have in countering detrimental community impacts of industrialized farming had only been alluded to by some researchers. [Lobao and Schulman \(1991, p. 596\)](#) postulated that one of the reasons why a few studies have found that industrialized farming has had less adverse effects in the North Central Heartland Region (relative to the South and West) is due to its agrarian history of protection of family farming and regulation of corporate farming. [NCRCRD \(1999\)](#) also indicated that 'relatively lax anticorporate farming laws, weak environmental regulations and permissive groundwater access laws' not surprisingly encouraged large, animal confinement operation to locate in Kansas.

The role that corporate farming laws play in protecting rural communities has been alluded to in past research [NCRCRD \(1999\)](#) but only recently addressed by [Lyson and Welsh \(2005\)](#). When they examined states with anticorporate farming laws (Iowa, Kansas, Minnesota, Missouri, North

Dakota, South Dakota, Oklahoma, and Wisconsin), they found that agriculture-dependent counties in states with such laws fare better on economic measures, that is, less families in poverty, lower unemployment, and higher percentages of farms realizing cash gains. In the comparison of states with less restrictive versus states with more restrictive laws, they generally found the same results as with the comparison of states with anticorporate farming laws and states without such laws. Additional research is needed to explain these findings, such as whether corporate farming laws *per se* or broader aspects of the institutional regulatory environment are protecting the fortunes of local communities.

It is clear, however, that within states, remote communities distant from metropolitan centers particularly need state-level protection. Remote rural counties appear to be targeted as recent operating sites by large animal confinement operations. Research by [Wilson et al. \(2002\)](#) demonstrated that census blocks in Mississippi with high percentages of African Americans or people in poverty were much more likely to be the locations of swine CAFOs. Of all local governments, remote rural counties have the least resources (staff, economic development, and social service budget) to cope with industrialized farming. They are in weak positions to bargain successfully with external corporations, to regulate their operations once they are in place, and to protect community social life and environment overall. State protection from industrialized farming is most critical in remote communities due, in part, to the fragility of local government ([Lobao and Kraybill, 2005](#)). From a social science standpoint, the farming system in place today has been created from both market forces and government policy and programs. It is thus logical that government can also be an instrument in transforming this system toward greater public accountability.

See also: Agribusiness Organization and Management. Agricultural Mechanization. Changing Structure and Organization of US Agriculture. Government Agricultural Policy, United States. Rural Sociology

Disclaimer

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