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Building trust: How farmers manage social interactions in their home communities

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Building trust: How farmers manage social interactions
in their home communities

by

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A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

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ABSTRACT

Large-scale livestock production has become controversial because of the perceived threats it poses to socially important values like environmental integrity, quality of life/community well-being, and animal welfare. All of these things are subject to control by the managers of livestock production operations, whom others depend on to act with fiduciary responsibility. In many cases, the public has become skeptical as to the rigor with which this responsibility is carried out. This study asks the question, how do large-scale hog farmers' perceptions of public concerns about such potential risks affect their social interactions with their neighbors and other community members? To answer this question, this thesis will examine the following points, using data from qualitative interviews with hog farmers from Iowa: 1) What are the concerns about large-scale pork production, and how do farmers perceive those concerns? 2) How do farmers' relationships with agricultural institutions affect their perceptions of public concerns about large-scale livestock production, as well as their risk management decisions? 3) What do farmers do to build trust among their neighbors and to foster reciprocal relationships? Drawing on social exchange theory and concepts of risk and recreancy, I argue that farmers' relationships with agricultural institutions encourage them to adopt a technical approach to risk management. However, farmers recognize that this approach is inadequate for building trust among their neighbors—a necessary component of relationships that may be affected by the implementation of a controversial innovation like large-scale hog production. Subsequently, they try to compensate for this shortcoming by attempting to build trust through civic engagement and interaction with their neighbors. They do so to help demonstrate that they share similar

values with their neighbors, and thus that they can be trusted to appropriately manage their hog production operations, too.

CHAPTER 1. INTRODUCTION

Large-scale livestock production is characterized is a controversial agricultural practice that gained the attention of sociologists and other researchers as the livestock industry began consolidating, and concentrated animal feeding operations (CAFOs) became more common in agricultural and rural communities (Sapp 2006; Carolan 2008). Such facilities are controversial because of potential risks they involve, such as the spread of harmful diseases, adverse impacts on health, environmental degradation such as air or water pollution resulting from improper manure management, a decline in value of neighboring properties, and an overall negative impact on quality of life. Furthermore, the costs and benefits that result from the operation of such facilities may be disproportionately distributed.

Large-scale hog production is characterized in this study as raising a minimum of one thousand head within a single confined structure, though an operation of this size may be considered relatively small by today's standards. Size of operation may range up to several thousand head of hog kept within several confinements on a single site. The risks associated with large-scale pork production have created debate regarding its impact on communities, and whether or not large-scale pork production is a threat to the social fabric of our rural communities (Sapp et al. 2006). Sociologists have also studied issues involving technological innovations and their associated risks within an institutional context (Freudenburg 1996, 2001; Sapp et al. 2009, Clarke & Short 1993). In such studies, institutions and organizations are understood to play a significant role when it comes to individuals' evaluations of risk (Sapp et al. 2009). Whether or not citizens trust societal institutions can have a significant impact on social interactions between people within

communities characterized by the existence of controversial technologies (Freudenburg 1993, 1996, 2001; Sapp et al. 2009 Clarke & Short 1993), including large-scale pork production.

Given this shift in the scope of research and risk analysis, it is important to ask the research questions we ask regarding social issues associated with large-scale pork production. The goal of each question is to produce answers that offer a more comprehensive understanding of a complex social issue. In particular, this study is concerned with how large-scale hog farmers' beliefs about risk affect their social interactions in their home communities. To address this question, this study focuses on the following sub-questions:

1. How do farmers perceive public concerns about risks associated with large-scale pork production?
2. How do large-scale pork producers' relationships with agricultural institutions affect their perceptions of public concern, as well as their risk management decisions?
3. How do large scale hog farmers' perceptions of public concern affect their social interactions?
4. What do farmers do to build interpersonal trust among their neighbors and foster reciprocal social interactions?

All of these questions lend insight into deeper meanings behind farmers' beliefs and behaviors, which have been developed in part around their identity as pork producers--both professionally and as individual community members. Answering these questions is important because the controversy that continues to develop around large-scale pork production is divisive in some rural communities. If we are to realize a democratic process

in terms of deciding how pork production should be done, it is necessary to have all interests and perspectives represented. Hopefully, bringing diverse interests together will allow us to make decisions about how pork production should be done in a way that addresses all concerns, to move toward a food and agricultural system that is acceptable to all. This is not to say that introducing the farmer's perspective creates a democratic process in and of itself. However, it moves us a step closer to a better understanding of one facet of pork production, so that we can make changes in our interactions and dialogues that may lead to more reciprocal social exchanges. Otherwise, solutions to problems may overlook important elements revealed through this perspective that could cause those solutions to ultimately be ineffective.

In answering these research questions, I will argue several points throughout this study. Farmers must try to manage public concerns about large-scale pork production from within a context where their decisions are already constrained by factors over which they have minimal power. Their behaviors reflect these constraints, which can cause farmers to address public concerns inadequately and force them to look for other means of building trust among their neighbors. Also, farmers believe that the problem with public concerns is a lack of education of the non-farming public, in other words, their ignorance of what it takes to be a pork producer. They believe that educating the public is the responsibility of organizations and institutions that deal with agricultural issues, including regulatory and non-regulatory institutions, special interest/industry organizations, government entities, or education institutions. They believe that negative public perceptions about pork producers and large-scale pork production are a result of these institutions' failure to provide adequate information. Farmers' relationships with institutions and organizations that they believe are

responsible for acting on their behalf and helping manage risk, affect their management decisions. They reinforce an inadequate approach to managing public concerns about risk that farmers implement.

One of the goals of this study is to highlight what factors influence farmers' decisions about how they practice pork production, and in what ways these factors affect their choices. I hope to help readers understand the rationale behind farmers' decisions regarding management of their operations, as well as management of risks associated with large-scale pork production. Previous studies that cover issues associated with large-scale pork production have failed to look at farmers' perceptions of public concern. Understanding how these perceptions impact their behavior with regard to ways in which they manage their operations, as well as how they manage risks associated with large-scale livestock production, are critical in terms of being able to pinpoint underlying causes of tension that need to be addressed if relationships are to be improved. While it is important to understand the pork producer's perspective, this point-of-view must also be understood within an institutional context, because institutions and organizations that farmers have relationships indeed affect decisions about risk that farmers make.

While social scientists have pushed for an incorporation of risk analysis within an institutional context into studies like this one, this type of analysis has not yet been applied to studies related to large-scale pork production. Given that farmers are managing facilities that involve risk, it is necessary to begin to understand what farmers do to demonstrate that they are trustworthy and why they make those decisions. Understanding this helps us know whether or not those decisions are effective when it comes to building mutually beneficial

relationships with neighbors. Finally, by answering the research questions posed in this study, I hope to also offer answers to the underlying question of what the general public can do to be good neighbors to pork producers.

Because conventional farming is backed by powerful special interest groups (for example, the Farm Bureau), there has been little need to advocate for the large-scale hog farmer, because their interests have long been the status quo. However, since large-scale hog farmers have become the subject of public skepticism, there is now a need for research that analyzes the issues farmers face that result from this skepticism. The concerned public understandably wants to have a say in policy, but raising these concerns alone does little to change decision making processes that already exist. It does little more than contribute to what Freudenburg (2001) calls the “spiral of stereotypes,” where opposing groups fail to engage in dialogue with one another, but continue to talk at one another.

In this study, I offer the point of view of ten farmers in order to present a perspective in scholarly research that has been mostly absent from previous studies that try to get at what it means to be a “good neighbor.” It is my intention to maintain the voice of the farmers who were interviewed, as well as their intent behind their responses to the interview questions. This study attempts to reveal meanings behind farmers’ behaviors, attitudes and beliefs to help clarify their relationship/position within the larger social and agricultural systems. I hope that this study will help non-producers understand why farmers make the decisions they do when it comes to choosing what types of agricultural practices they implement. I also hope that people will use this understanding to help inform decisions they make in terms of how they choose to interact with one another.

Chapter Two provides an overview of existing literature about how conventional/industrial agriculture affects community well-being and interpersonal relationships within those communities. It also offers a brief history of hog production in Iowa, highlighting key factors that contributed to the shift toward large-scale production. The transformation of pork production, and the risks and concerns associated with large-scale enterprises, have underscored a need for the inclusion of risk analysis to better understand how social interactions between producers and non-producers are affected. Social scientists have begun to look at risk within an institutional context, focusing on institutions/organizations that create and manage risk, rather than on the individual perceivers of risk, to help clarify what makes risks acceptable or not.

Chapter Three describes the methodology used and provides a brief background of the study, which piggybacks off of a previous quantitative study that looked at the quality of social fabric in rural communities characterized by large-scale livestock production. The reason for this study was to expand on the question, what can others do to be good neighbors to pork producers?—a question that has not been answered yet in scholarly research. The chapter provides a rationale for using in-depth interviews, explains sampling methods, provides demographic background on interviewees, explains the processes of coding and analysis, and shows how verification was established through peer review and revealing bias.

A characteristic of this study is that large-scale pork production is understood to be the dominant type of hog production. However, the purpose of analysis is not to support or refute this type of production, but rather to analyze social relationships within this context. The purpose of Chapter Four is to illustrate farmers' belief that the reasons why they chose to

increase scale of production are critical, but are often forgotten by others. They believe the quality of their relationships and their ability to build trust is dependent upon others' ability to understand why they made such decisions. The point of this chapter, then, is to show farmers' perspective on why this is now the current reality that they must try to operate within, and to provide a context for it.

Producers believe that they have become better producers as a result of the way pork production is done now, yet they still expressed a feeling of vulnerability. Chapter Five makes the claim that farmers' vulnerability stems from their perception that they are susceptible to actions against them that stem from public concerns about risks associated with large-scale production, and the way they choose to manage these concerns affects their relationships with neighbors. But, those decisions are impacted by institutions and organizations that farmers are associated with through their profession, that address concerns in a very technical manner. The way they communicate information to the public (producers and non-producers) affects risk management at the local level, because farmers put this information into practice by focusing on management strategies as a means for addressing public concerns. This approach affects their trustworthiness and perceived quality of relationships with neighbors.

Chapter Six covers the shortcomings of the risk management approach discussed in the previous chapter. It discusses how farmers as community members want to foster mutually beneficial relationships with their neighbors, but as institutional actors, they want to align with organizations and institutions that will provide them with support as livestock producers. This creates tension because the institutions and organizations that they associate

with overlook questions of value in their approach to risk management and fail to address actual concerns. Farmers tend to emulate this approach, which ultimately causes farmers, as well as these organizations, to appear “recreant” to the non-farming public, where “recreancy” implies the failure of institutions or experts to meet fiduciary obligations to the constituents they are entrusted to. At the same time, farmers perceive institutions and organizations to be recreant, too, in that they fail to provide farmers with adequate mechanisms for managing public perceptions of risk.

Chapter Seven looks at alternative behaviors that farmers engage in to compensate for the lack of trust that results from their inadequate approach to risk management. It builds on elements of social exchange theory to help explain their behaviors. Finally, Chapter Eight provides a summary of the study and my claims/findings, and provides recommendations for farmers, community members, and institutions, as well as for future researchers.

CHAPTER 2. LITERATURE REVIEW

Social science researchers have long been interested in understanding how the changing structure of agriculture has affected rural and agricultural communities (Goldschmidt 1978; Lobao 1990; Lobao & Stofferahn 2008). Concern about the increased industrialization of agriculture and its impact on rural communities has increased in recent years (Lobao & Stofferahn 2008; Beus & Dunlap 1990). Some studies have shown industrialized agriculture to be detrimental to rural communities—economically (Goldschmidt 1978), socially and environmentally (DeLind 2004). Much social science literature that has been produced on the topic has been concerned with negative impacts that industrial agriculture has on individuals and communities (Goldschmidt 1978; Ikerd 1999; Libby & Sharp 2003; Lobao 1990; Lobao & Stofferahn). These studies posit that an industrial structure has few benefits to offer (Goldschmidt 1978), and suggest that alternative/non-industrial structures may offer more promise for the future well-being of rural communities and the individuals that live in them (Jackson-Smith & Gillespie, Jr. 2005; Lasley, Hoiberg & Bultena 1993; Smithers & Armstrong 2005).

Jackson-Smith and Gillespie, Jr. (2005) explain that much research on the changing structure of agriculture has been on how structure affects the economic well-being of communities, though they note that some have looked at socio-economic impacts, too. Studies that have focused on socio-economic impacts have looked at how the changing structure affects interpersonal relationships, agriculture as a source of economic vitality for communities, identity and attachment to place, social empowerment, availability of community services, and civic engagement, among others (Lobao & Stofferahn 2008). Most

of these studies have also shown that an industrial structure decreases the potential for positive outcomes for these indicators. According to Lobao, the following are consequences of a changing structure of agriculture for rural communities: decline in population, increased income inequality and poverty as well as lower incomes for some demographics, decreased access to community services, decreased democratic participation among residents, lack of community integration and social participation, declining local business, pollution of the environment and greater depletion of energy resources, unemployment, and firm class divisions (as cited in Lasley et al. 1993). In some way or another, most studies have focused on how one or more of these consequences resulted from the changing structure of agriculture and have subsequently impacted community well-being (Goldschmidt 1978; Jackson-Smith & Gillespie, Jr. 2005; Smithers & Armstrong 2005).

Perhaps the most well-known study to date (and the one responsible for inspiring a series of other studies) is Walter Goldschmidt's (1978) ethnographic study of Arvin and Dinuba—two farming-dependent communities in California that relied on different farming structures. The study sought to bring to light the socio-economic consequences of agribusiness on local communities in the 1940s. Goldschmidt's study analyzed how social elements such as networks, political participation, community services and organizations and religious life were impacted by local farm structure. Based on his research, Goldschmidt claimed that communities where a family-farming structure was predominant had higher levels of the aforementioned socio-economic elements than did communities that were dominated by agribusiness and an industrial structure of agriculture (Goldschmidt 1978). In line with Goldschmidt's position, Smithers and Armstrong (2005) found that an industrial model of agriculture has caused many farmers to fail due to high costs of production and low

prices of commodities. The resulting decline in “farm people” within communities has led to the emergence of a type of agriculture that “challenges normative views of how farming should be,” and in turn has created social divisions within the community (Smithers & Armstrong 2005). It has also led to a decrease in perceptions of the importance of agriculture as an economic contributor among certain groups (Smithers & Armstrong 2005).

Since Goldschmidt’s study, there have been numerous other studies. Some have produced results that support his hypothesis and some support slightly different conclusions. In contrast to Goldschmidt’s position that agri-business is bad for communities, Jackson-Smith and Gillespie, Jr. (2005) conducted a study which showed that relationships between farm structure, community characteristics and households on one side, and indicators of social behaviors on the other, are quite complex and cannot be reduced to making simple extrapolations about the issue. They concluded that the frequency and quality of relationships between farmers and neighbors/other community members is determined more by who one is rather than the type of operation one runs (Jackson-Smith & Gillespie, Jr. 2005).

Because Iowa is one of the nation’s industry leaders in pork production, it is necessary to consider factors which may have helped create unique social situations in Iowa’s communities. Beginning with the evolution of hog production in Iowa, technological innovations provided a catalyst for growth in the pork industry. In the 1970’s, hog production moved from pastures into confinements (Stormont 2004), which had a number of implications. Farmers could now raise hogs during the winter, allowing year-round production. Furthermore, moving production indoors allowed farmers to further manage the breeding process by weaning piglets more quickly and impregnating sows more often, so that

the number of hogs raised per year increased (Stormont 2004). In addition to the increased capacity afforded by hog confinements, antibiotics were also used to treat hogs, even if they were not sick, to promote growth so they could become market-ready in a shorter period of time (Stormont 2004).

Also during the early years of change in the hog industry, it was realized that feeding hogs the grain that Iowa farmers grew was cheaper than transporting the grain product elsewhere (Hayes, Otto & Lawrence 1996). In Iowa, grain was cheaper than in other states, as were shipping costs (Mabry 2008). Transportation costs created differences in grain costs across states, and thus livestock production was most lucrative in states where grain cost less (Hayes et al. 1996). Furthermore, because Iowa grows large amounts of corn and soybeans, there was also a demand for the manure product accumulated in animal production facilities for use as nutrients for crops (Mabry 2008). These conditions favored an increase in hog production, and helped trigger the shift toward industrialization. After 1990, investment in pork production was increasingly seen in areas of Iowa where grain prices were cheapest (Hayes et al. 1996). While confinements cropped up in all regions of the state, many were concentrated in north-central Iowa especially, in counties where access to navigable rivers was less convenient, but where soybean meal facilities were nearby (Hayes et al. 1996). Since the 1990's, the number of farms with small herd sizes has decreased, while the number of farms with large herd sizes has increased (Melvin et al. 2002).

Changes in policy added force to the technological and structural shifts the pork industry was experiencing. According to Hayes et al. (1996), policies that were detrimental to the pork industry started to be eliminated in the 1980's and 1990's, and included economic, trade, and transportation policies. Within the United States, regulation of the

trucking industry by the Interstate Commerce Commission (ICC) caused the interstate transport of products to be very costly and inefficient (Moore 2002). These costs and inefficiencies were transferred to the pork industry. However, in 1980, the Motor Carrier Act resulted in partial deregulation, easing the economic regulations on the trucking industry. In 1995, the ICC was abolished and deregulation was complete, which resulted in the easing of stringent rules that truckers were subject to (Trucking Industry Overview, 2010), and made the transport of agricultural products more economical for farmers. Furthermore, policies like the 1990 Farm Bill, GATT, and the European Union's Common Agricultural Policy experienced reforms that helped boost animal product exports, and renewed interest in the livestock industry in Iowa (Hayes et al. 1996).

As the hog industry experienced changes in terms of scale of production, incorporation of technological innovations, and policy, the rural landscape also began to see change in terms of encroaching urban development and accompanying non-farming residents. Concerns began to be raised that farmland was being taken out of production for residential purposes (Richardson, Jr. & Feitshans 2000). Furthermore, some of the non-farming residents, not expecting some of the externalities associated with rural/agricultural lifestyles, brought nuisance lawsuits against farmers who ran livestock operations. Discouraged by this, farmers began to sell their land to developers, perpetuating the process of development (Richardson, Jr. & Feitshans 2000). In response, Iowa enacted three Right to Farm laws in the 1970's and 1980's, which provided a number of protections for farmers, perhaps most notably, the provision of immunity from nuisance lawsuits. According to Richardson, Jr. and Feitshans (2000), Right to Farm laws set the "coming to the nuisance" defense, which suggests that whoever came to an area first has the right to do what they

please in that area, regardless of anyone else who moves within the area at a later time and disapproves of the character that was initially determined. Furthermore, it held that farmers could maintain what would otherwise be considered a nuisance as long as it was within an area that had been approved as an agricultural area.

Iowa's Right to Farm Act came under scrutiny with the case *Bormann vs. Board of Supervisors in and for Kossuth County*. According to court documents, in 1994, Gerald and Joan Girres applied for the establishment of an agricultural area of 960 acres in Kossuth County, which encompassed property owned by the applicants, but also property owned by others (Richardson, Jr. & Feitshans 2000). The Board of Supervisors initially struck down the application, but approved it two months later in a second attempt by the applicants. Because Iowa law at the time held that agricultural practices within an agricultural area are not nuisances (provided that the operations are not run negligently), it gave the applicants immunity from nuisance suits, regardless of the date that the agricultural area was established (Richardson, Jr. & Feitshans 2000).

The issue in *Bormann vs. Board of Supervisors* was whether or not the Right to Farm law constituted the "taking" of private property for public use without just compensation. Initially, a district court dismissed the claim (Richardson, Jr. & Feitshans 2000). However, the Iowa Supreme Court ruled that approval of the application resulted in an easement in the applicant's favor. It constituted a "categorical taking" of private property for the applicant's own use without just compensation to the owner, which violates the Fifth Amendment of the US Constitution (Hamilton 1999). As a result of the Supreme Court ruling, one of Iowa's three Right to Farm acts was deemed unconstitutional. The outcome was that farmers'

immunity to nuisance lawsuits was removed in 680 agricultural areas in Iowa (Hamilton 1999).

With policies that have encouraged farmers to adopt industrial modes of pork production, as well as the removal of immunity from nuisance, hog producers have found themselves in positions where they are susceptible not only to the inherent risks of the system, but also to legal risks. Such risks could potentially alter their ability to practice livestock production, and could also negatively affect social relations within their communities. Farmers are now faced with the task of finding ways to manage these legal risks, as well as the public concerns that spur such legal actions. These changes in the structure of hog production and policy have substantiated the need for sociological risk analysis in studies about the social impacts of this type of production.

Within the last three decades, social scientists have advocated for the incorporation of sociological risk analysis in studies dealing with the management of technological innovations that involve various types of social risks (Barber 1984; Clarke & Short 1993; Freudenburg 1993, 1996, 2001; Clarke & Freudenburg 1993; Perrow 1984; Short 1984) to better understand how individuals and communities are affected. However, few of the studies include discussions about how managers of technology perceive and address public concerns about risk. They do not discuss how these perceptions are addressed through risk management processes, and how social relationships in communities are subsequently affected.

Assumptions have often been made, especially in disciplines such as engineering and applied mathematics (Sapp et al. 2009), that risk is objective (Clarke & Short 1993), it is most important to get facts right (Sapp et al. 2009), and questions and concerns about

technology and its risks should be left to technical experts (Freudenburg 1993, 1996). Risk analysis has relied on its own intrinsic legitimacy and has encouraged decision-making processes and policies that have been based solely on technical, quantitative analyses (Freudenburg 1996; Short 1984). However, this approach has become insufficient by itself for dealing with many of today's technological risks (Freudenburg 1993, 1996, 2001; Sapp et al. 2009). Social scientists have recognized that these questions are not strictly technical. Rather, they involve underlying philosophies that perhaps technical experts are not aptly suited to answer (Clarke & Short 1993, Freudenburg 1996). Such a technical approach to risk analysis has a narrow focus and has ignored the outcomes of failed expertise in circumstances where risks have materialized (Short 1984).

Analyses of risk have glossed over the detail that while some technologies involve some objective risks (Freudenburg 1993), the determination of risk is also normative (Short 1984), where perceptions of risk are based on value judgments of what ought to be. When those norms are challenged, the public expresses concern about the social disruptions that can and do occur, and outlets for expressing those concerns have increased (Clarke & Freudenburg 1993). Studies show that with regard to large-scale livestock production, concerns about the risks associated with this type of agricultural practice and its impact on rural communities abound (Sapp et al. 2006), and members of rural communities are indeed expressing those concerns (DeLind 2004; Goldschmidt 1978; Jackson-Smith & Gillespie, Jr. 2005; Libby & Sharp 2003; Lobao 1990; Lobao & Stofferahn 2008). Those risks may include the spread of harmful diseases, adverse impacts on health, environmental degradation such as air or water pollution resulting from improper manure management, a decline in value of neighboring properties, and an overall negative impact on quality of life.

The goal of this study is to help explain how the management of public concerns about risks associated with livestock production affect farmers' relationships with their neighbors. This study understands factors such as size and scale and the current structure of agriculture as a reality. It looks at variables such as trust, competence, and fiduciary responsibility as variables that affect risk perceptions (Clarke & Short 1993; Freudenburg 1996, 2001; Sapp et al. 2009), and subsequently, social interactions and community well-being. To better understand how perceptions of risk regarding large-scale pork production impact community well-being, this study is based on an understanding that risk (Freudenburg 1993, 1996, 2001; Sapp et al. 2009; Short 1984) and social problems (Short 1984) are socially constructed. That is, the development of risk is dependent upon certain social factors, including the social beings that interact in various social situations.

In addition to understanding risk as socially constructed, this study also looks at the management of risk associated with large-scale pork production within an organizational and institutional context (Freudenburg 2001). Risk analysis, until recent years, has tended to focus on the individual perceiver (Clarke & Freudenburg 1993). However, it is just as important to understand the organizations and institutions that create and manage risks that are perceived and evaluated by citizens (Freudenburg 1993, 1996, 2001; Clarke & Freudenburg 1993; Sapp et al. 2009). Sociological risk analysis also examines system characteristics (Perrow 1984) and variables such as fairness, confidence, and legitimacy—all of which are important to the functioning of social relationships and systems (Barber 1983), and which apply to this study. The ways in which organizations and institutions approach matters of fairness, competence, fiduciary responsibility, etc. are important factors, because they affect public concerns about risks associated with increased scale and size of

agricultural production (Sapp et al. 2009). Subsequently, this impacts the dynamics of relationships between farmers and the concerned public. Until only very recently has this approach been applied to agriculture/the US food system (see Sapp et al. 2009), where the variables studied go beyond size/scale to include trust, competence, and fiduciary responsibility (Freudenburg 1993, 1996, 2001; Clarke & Short 1993; Sapp et al. 2009).

Goldschmidt (1978) notes that one of the characteristics of industrial agriculture is a more minute division of labor. It is certainly the case that the current conventional agricultural system has become much more specialized in recent decades (Beus & Dunlap 1990). Professionals are often responsible for managing and producing a narrower scope of products and services (Freudenburg 1993, 2001), and others rely on them to ensure that those products and services are safe and reliable (Freudenburg 1993). While as a collectivity we know more today than we did ten years ago, as individuals we know less and less about the technologies that we depend on (Clarke & Freudenburg 1993; Freudenburg 1993, 2001; Sapp 2009). Knowledge about technology is becoming more obscure (Short 1984), and we come to depend on our technologies more than we are in control of them (Freudenburg 2001). As a result, we must be able to trust the specialists and experts who have technical knowledge that we lack to manage those technologies adequately (Freudenburg 1993, 2001). This is a task that most farmers take very seriously (Sapp et al. 2006), although this study seeks to show that it is a task that is becoming more difficult as they struggle to find ways to manage public concerns about large-scale pork production.

Usually technologies can be depended on, and so can their managers (Freudenburg 1996). Durkheim (1984) claims that an increased dependency on others results in increased organic solidarity. Organic solidarity is analogous to the organ system in the human body,

where organs need other organs in order to function properly (Durkheim 1984). However, interdependencies created by the division of labor in complex social systems increases the likelihood that certain parts of the system cannot be counted on, and the system itself can become a risk (Freudenburg 1993). Consequently, this can complicate the way risks are assessed and perceived from within these systems (Freudenburg 2001). While technologies have improved our lives in many ways, the division of labor has caused us to become more susceptible to the failures of those who manage technologies (Freudenburg 1996).

To add to the complexity, Freudenburg (1993) posits that a complicating factor of organic solidarity is humans' ability to discern specialized interests from the interests of the collectivity (Freudenburg 1993). If the interests of the risk managers are counter to the collectivity, then it can disrupt the social system (Freudenburg 1996), even when accidents have not occurred. Because of the interdependent nature of agriculture and the food system (Beus & Dunlap 1990), these intricacies should be taken into consideration when looking at the impact of risk perceptions on relationships between farmers and their neighbors.

Clarke and Short (1993) state, "Opportunities for communities and publics to express their preferences, and their fears, have expanded. There are more legal, organizational, and political mechanisms available to use in social struggles over risk" (p. 382). With regard to large-scale livestock production, this factor has important implications, and this study seeks to understand the ways in which farmers have perceived and responded to public concerns. It looks at these issues within an institutional and organizational context, in which pork producers inhabit a unique position as both institutional actors and members of community. Because of this social position, it is important to also understand how they perceive themselves and how they believe other community members perceive them. It is also

necessary to learn how their beliefs and perceptions about the institutions that they are part of and that represent them shape their behaviors and their relationships with other community members.

As institutional actors, farmers are responsible for managing risks that could affect their neighbors and community members. Take manure spills, for example, which could potentially contribute to water and air pollution and have adverse effects on health and quality of life for many. As such, farmers (working with the DNR) must create and implement a manure management plan (that must be approved by their local Board of Supervisors), so as to reduce the chances that this type of event occurs. Some farmers may be directly involved in organizations that facilitate risk management with the public, while others may be indirectly involved by association of their profession. As community members, farmers engage with their neighbors and other community members, whether through a business relationship, a social relationship, or another type of relationship. They care about the well-being of the communities they live in and are a part of, and make decisions that they hope will contribute positively to their communities. However, analysis of farmers' relationships with their neighbors becomes more complex because they cannot be confined to only one identity or the other. As a result, large-scale hog producers find themselves in a position where they are impacted by the actions, demands and decisions of both, which this study will show this to be a source of tension and vulnerability for many livestock farmers.

Pork producers, as well as the agricultural organizations and institutions they are part of, tend to think of the non-livestock-producing public as "ignorant" when it comes to technical knowledge of pork production (see Freudenburg 1993, 1996, 2001). Hog farmers

believe that if the public only knew the science behind it, then their concerns would cease to exist, and pork producers' trustworthiness would be self-evident. Accordingly, approaches to dealing with public concerns by organizations and institutions have been based off of this assumption. However, Clarke and Short (1993) note that problems are not solved when entities responsible for making decisions about risk regard public concerns as problems of poor information. They state:

Organizations and elites who make such decisions, especially in large corporations and federal regulatory agencies, still hew to the line that the problem with risk acceptability is insufficient and low quality information. The normative theory behind this line of thought holds that if only *the* reality can be ascertained, prescriptions for action will be self evident. (Clarke & Short 1993:380).

With regard to large-scale livestock production, this observation points to a disconnect that exists between the public's concerns and pork producers' desire for more public education on the technical aspects and science of what they do. Agricultural organizations and institutions do, in fact, provide the public with technical information, yet public concerns persist and tensions remain. Some studies suggest that part of the problem is a matter of values (Freudenburg 2001). Whereas some understand risk as a primarily technical/factual matter, others understand risk as a matter of values. These two perspectives have proven difficult to reconcile. According to Freudenburg (2001), questions about technological controversies should be distinguished between "questions of fact, questions of values, and questions of blind spots" (p. 127) (that is, what things may have been overlooked?). When these distinctions are considered, it becomes clearer as to why public concerns remain—because addressing one set of questions does not necessarily address remaining ones. As such,

farmers' desire for more education may not be an adequate solution by itself, especially when concerns are approached in ways that the public deems to be unsatisfactory.

It has been suggested in some studies that concerns about risk may be attributed to recreancy—that is, “[T]he failure of an expert, or for that matter a specialized organization, to do the job that is required” (Freudenburg 1996:47). It refers to the behaviors of institutions, organizations and individuals, including the failure to facilitate appropriate risk communication between the technical community and the public (Freudenburg 1996 & 2001; Clarke & Short 1993). Freudenburg points out that, “While science and technology have achieved many remarkable successes, it would be difficult to argue that dealing well with the public should be counted among them” (Freudenburg 1996:45). Instead, organizations and institutions tend to address public concerns by using research and studies that further support their own position (Freudenburg 2001), as if more of the same information will appease the concerns that actually stem from sources that are unrelated to the scientific and factual matters that they are communicating.

Furthermore, issues with risk acceptability are compounded when accidents and/or catastrophes actually happen:

Risk management organizations and institutions almost always assert they can control risky systems—even when such control is uncertain—and hence that people should trust them. When the inevitable accident (or catastrophe) happens, risk managers rarely volunteer their responsibility for the damage or recognize that factors that are difficult to measure [...] might suffer (Clarke & Short 1993:385).

Unfortunately, these events are what people remember most, as negative information and events carry disproportionate weight (Sapp & Korsching 2004). As public institutions

continue to deal with public concerns poorly, the lack of risk management can impact relationships at local levels. It can contribute to the tension that characterizes some of the relationships between farmers and their neighbors, not to mention the vulnerability that farmers feel as a result of believing that they are the targets of public concerns and risk perceptions. As such, the goal of this study is to provide an understanding of these relationship dynamics, as well as factors that affect them, based on an analysis of the attitudes and beliefs of farmers. The method of analysis used in this research is discussed in detail in the following chapter.

CHAPTER 3. METHODS

Sapp et al. (2006) conducted a quantitative study to determine if the social fabric of small towns and nearby rural communities was at risk from the ongoing controversy surrounding large-scale livestock production. A supposition of the hypothesis was that quality of life in communities where large-scale hog production facilities are present is determined by the quality of neighboring among community members. As such, the researchers were concerned with providing a better understanding of the following issues: 1) the quality of neighboring exhibited by pork producers as perceived by their rural/urban neighbors, 2) the quality of neighboring exhibited by city residents as perceived by the rural/urban neighbors of pork producers, and 3) the quality of neighboring exhibited by rural and urban neighbors of pork producers as perceived by pork producers themselves (Sapp et al. 2006). The last issue begins to address ways in which community members can be perceived as good neighbors by livestock producers—a question that has not yet been addressed in scholarly studies. A critical aspect here is that being a good neighbor necessarily involves more than what producers should do to be good neighbors; non-producers also have responsibilities as neighbors. Despite current debates that surround large-scale pork production, the study concluded that the opinions about the quality of neighboring of pork producers, their rural and urban neighbors, and city residents were about equal, and that the social fabric in Iowa's small towns and communities is not at risk (Sapp et al. 2006).

Along with the quantitative study, a qualitative portion was included that asked pork producers questions about whether or not they felt their neighbors understood the nature of

pork production, if their neighbors do their part to help pork producers feel at home in their community, and what community leaders could do to help support pork production (Sapp et al. 2006). It is this portion of the study that provides the basis for the analysis that follows.

Research Design: In-Depth Interviews and Qualitative Analysis

Sapp and other researchers conducted in-depth interviews with pork producers in rural Iowa communities. The intent of the interviews was to provide pork producers with an opportunity to make their voices heard—to articulate what issues trouble them, to let others know how they try to be good neighbors, and to let others know what they could do to be good neighbors to them. While a summary of the findings from the interviews was included in the final report, no analysis was conducted to provide further insight into the deeper meaning of the answers that the pork producers gave. It is with these interviews that this study begins.

Sapp et al. used a non-random convenience sample to identify participants for this study. The Community Development—Data Information and Analysis Laboratory at Iowa State University provided a database that listed pork producers by county, who operated hog confinements that housed a minimum of one thousand head. Researchers started at the top of the list and called pork producers until twenty agreed to participate in interviews (S. Sapp, personal communication, April 9, 2010). Each respondent was provided with a \$100.00 honorarium for their participation. Researchers involved in the qualitative study met face-to-face with pork producers to conduct in-depth interviews (ranging from about fifteen minutes to an hour in length) to help provide a better understanding of what pork producers thought community members could do to be better neighbors/more supportive of pork producers (S.

Sapp, personal communication, April 9, 2010). The purpose of this study is not to generalize across an entire population of farmers. Rather, it is to provide more in-depth insight into the meanings of the farmers' responses.

During each interview, it was explained to respondents that the purpose of the interviews was to understand their relationships with other members of the community. The interviewees were also asked for permission to tape record the interviews. Before starting the interview, each participant was asked to read and sign an informed consent document; if they agreed to the terms, then the interview could proceed. All participants consented, and all but one agreed to have the interview taped. For that interview, notes were taken by the interviewer, followed by in-depth field notes that were produced as soon after the interview as possible. The questions asked of each participant during the interviews can be found in the Appendix A. Participants were also asked to answer demographic questions (not included in the Appendix A) about age, marital status, involvement in community organizations, children (high school age or younger) living with them, and children involved in the operation (Sapp et al. 2006). A brief overview of the demographic characteristics of each farmer (information about enterprise is included wherever information was available) can be found in Appendix B. Following each interview, the tape recorded interview was digitized and transcribed. Both transcripts and recordings were utilized during analysis of the data.

In-depth interviewing is an apt methodology for this study, because it allows one to explore the meanings that pork producers give to some of the complex issues related to the impact of large-scale pork production on neighbor/community relations. For example, the quantitative study by Sapp et al. (2006) shows that the social fabric of rural communities is

not at risk due to large-scale pork production, yet qualitative analysis in this study suggests that tension still permeates many rural communities by large-scale production. In-depth interviews help to expose the intricacies and complexities of such anomalies, and help to explain why certain factors may be problematic in ways that are not revealed by quantitative studies. They allow one to further understand how farmers believe such factors impact their relationships with neighbors and community members. Interviews involved only pork producers, so as to focus on opinions of the quality of neighboring from the perspective of pork producers themselves, rather than on non-producer neighbors/community residents. The reasoning is so that a new perspective may be added to the current literature on the effects of industrial agriculture and risk on relationships between farmers and community members.

Coding

To help establish reliability, each participant was asked the same questions during interviews. After the interviews had been conducted and transcribed, a line-by-line inductive analysis was performed on each interview transcript to identify common themes, which were coded. Coding is an “analytic categorization of data” that allows researchers to organize information in a way that makes sense and is easier to manage (Neumann 2006:460). “Open coding” occurs during an initial read-through of the data. During this coding phase, a broad range of preliminary themes may be identified. The data from the interviews was initially coded under the following open codes: vulnerability and risk, collaboration, community relations, support of community, community involvement, competing paradigms, conflict and tension, knowledge, education, understanding and ignorance, farming as a business,

jealousy and competition, management, odor, value in production, public/institutional support, representation and advocacy, and regulation.

The set of open codes were further analyzed during the axial coding process, where initial themes and concepts are further honed, and a few key themes/concepts are identified (Neumann 2006). The axial coding process resulted in the following major themes: risk management, vulnerability, institutional/organizational support, educating the ignorant public, and management practices. These themes serve to tie all of the minor themes together, and will also be shown to have relationships to one another.

Selective coding involves combing through all of the data and previous codes to identify specific examples that help exemplify the themes (Neumann 2006). In this study, selective coding was used to corroborate claims made about pork producers' relationships with their neighbors/communities to further establish validity. The use of evidence from interviews helps maintain the views and voices of the pork producers in this study (an integral element since the purpose is to provide an understanding of their relationships from their own perspective), and to ensure that meanings are not imposed. Evidence and examples from the interviews that illustrate the aforementioned major themes permeate nearly every interview—some which come up in every interview and on multiple occasions. As will be seen through the examples used, it is clear that emotion was often apparent during the interviews, as was the passion with which the participants spoke about these issues.

The questions asked during the interviews were broad and open-ended to avoid leading pork producers in a particular direction. Nonetheless, there were common themes that emerged within every interview. The following major themes are analyzed and discussed in this study: Remaining viable in agriculture, pervasive vulnerability among

farmers, management as a neighboring strategy, technical approaches to risk management, education and the concerned/“irrational”/ignorant public, and organizational/institutional support for farmers.

Verification

Determining whether a qualitative study meets rigorous standards of research, and can legitimately contribute to the body of educational knowledge, is an important component of all research (Creswell 1998). In quantitative studies, establishing validity and reliability involve important processes to determine whether or not such standards are met. Ely et al. believe that using quantitative approaches to establish validity and reliability in qualitative research is not adequate (as cited in Creswell, 1998, p. 197). According to Lather, because of the unique approaches used in qualitative research, social science research should allow for “holes and questions and an admission of situatedness and partiality,” rather than adhering to a rigid, more positivistic structure (as cited in Creswell, 1998, p. 198). Given the distinctness of qualitative research, Creswell (1998) uses “verification” as a standard for judging the legitimacy of research, in place of quantitative approaches to establish validity. Verification still gets at the issue of validity, but reconceptualizes it in ways that are specific to qualitative research, and emphasizes the value in it (Creswell 1998).

Distinguishing qualitative and quantitative terms for processes for establishing validity is not enough. These concepts must be further transformed into usable applications. Creswell (1998) lists eight “verification procedures” that may be implemented in qualitative research:

1. Extended participation and observation in the field.

2. Triangulation, or using multiple sources, methods and theories for corroboration.
3. Peer review, where another individual and the researcher meet during “debriefing sessions” to discuss challenging questions and concerns about the study.
4. Negative case analysis, where a hypothesis is reworked when the researcher comes across negative information that disconfirms the hypothesis, or part(s) of it.
5. Making researcher bias/assumptions explicit.
6. Member checks, where the researcher presents his or her findings to the research subjects in order to establish their opinion on the credibility.
7. Thick descriptions provided to the reader.
8. External audits, where someone with no connection to the study assesses the accuracy of the study (Cresswell 1998:201-203).

Cresswell suggests that any two out of these eight procedures be implemented throughout the research process to help verify the research.

The analysis portion of this study uses two of the eight verification procedures. Verification procedures were largely based on constraints such as time and access to necessary resources (such as an external auditor). Firstly, peer review was implemented. I met regularly with my major professor (and intermittently with other committee members) to discuss the process and progress of analysis. During the beginning of the process, committee members suggested useful theory and literature to help define my research questions. Once research questions were established and the writing process underway, I regularly submitted writing to my major professor, who provided me with critical feedback to be addressed in later revisions of the analysis.

Secondly, I make my own bias as a researcher clear in this study. No research is unbiased, and as such, it is important to be self-reflexive and transparent in terms of one's own biases which can potentially impact research outcomes. My interest in this research topic stems from my family's background in agriculture in Southeast Iowa. My father farms with three of my uncles and my grandfather on a diversified crop and livestock operation in Jefferson County, Iowa. While conventional agriculture like the kind that my father, uncles and grandfather practice is prevalent in the community, there has been a noticeable increase in tension (and sometimes outward conflict) between community members who do not agree on how they believe agriculture should be practiced—especially with regard to livestock production. Many community members have felt the impacts of these tensions, including my family.

One of my uncles (formerly a large-scale hog farmer) and a number of community residents became involved in litigation over a confinement that my uncle built for the purpose of raising hogs. The lawsuit lasted nearly four years before it was settled out of court in March 2010. It resulted in a very drawn out and expensive process, and caused significant damage to both existing and potential relationships between community members. Interactions like these erode social ties in the community. My uncle and others involved in this incident (and others involved in similar ones) no doubt wish that situations like this would have been avoided.

Clearly, my uncle's experience is a source of motivation, and I have taken on this research project as an opportunity to present the point-of-view of conventional farmers like him. However, as someone with a personal interest in the issues that pork producers faced, it was important to continuously check myself throughout the research process in order to

ensure that my interpretations of the interviews were accurate interpretations, rather than my views imposed on their answers to the interview questions. Under ideal circumstances, an external audit would have been performed. However, due to time and resource constraints, this was not possible, and it is a limitation of the study. In order to help compensate for this shortcoming, direct quotes are used frequently to maintain the farmers' authentic voices and provide supporting evidence.

Furthermore, the purpose of this project is not a simple defense of large-scale pork production; there are legitimate critiques of conventional agriculture, including large-scale livestock production, and I do not deny any of them in this study. There are very well-known risks, including environmental risks, threats to quality of life and threats to community well-being. At the same time, while many studies highlight problems associated with industrial/conventional agriculture, pork producers' perspectives on these problems is largely missing. Without this perspective, the complexity of issues associated with large-scale livestock production cannot be fully understood. Although my motivation is personal, the goal of this study is to contribute to a better understanding of this complex social issue. If we take the time to understand those complexities, we as citizens and neighbors can also better inform our ways of interacting with each other, and look for mechanisms to improve our relationships and the well-being of the communities we share.

CHAPTER 4. GETTING BIGGER – FARMERS' DECISIONS TO INCREASE PRODUCTION

This study understands large-scale production as an existing reality. However, the farmers interviewed expressed a need for others to understand *why* they chose to adopt large-scale pork production in hopes that they can understand their point of view regarding this method. They desired for others to be able to relate to them, to know their perspective, and to understand the situations they are in and the constraints they are under. The purpose of this chapter is to highlight some of the factors that have contributed to farmers' decisions to increase production, and to illustrate farmers' belief that they had no choice but to do so. It is within this perceived context of minimal choice that farmers must try to manage risk and build trust with others in their communities. Farmers believe that for others to know this helps them realize that, while they want to address public concerns about risk, they feel the only way to do so must involve ways that will still allow them to continue large-scale operations. Thus, their ability to meaningfully address public concerns about risks associated with large-scale pork production is constrained.

Production growth: The underlying logic

According to MacDonald and McBride (2009), financial pressures have significantly influenced hog farmers' decisions to grow their operations. Larger operations make it possible for farmers to lower their production costs and receive higher returns (MacDonald & McBride 2009), thus achieving economies of scale. For some, vertical coordination and integration help facilitate this growth (Hart 2003; MacDonald & McBride 2009) by offering

centralized production, processing and marketing (Hart 2003). Many farmers also find that it makes sense to specialize in the production of only one or two types of crops or livestock as a result of this business arrangement (Hart 2003). Vertical integration and contracting can ease some of the financial risk that farmers assume by splitting ownership, but farmers also lose autonomy (Davis 2003; Davis, Newton and Gillespie 2005) and become more of an isolated component of a vertically integrated industry.

This restructure has also affected/limited farmers' choices with regard to how they produce. For many of them, it has come down to a decision of whether to get bigger or to go under (Hart 2003). Because farmers do not have direct control over the prices that they receive for their product, they are often faced with choices to either reduce production costs or to increase production (Hart 2003). More often, the answer has been to increase production to cover costs (McBride & Key 2007). A USDA analysis showed that when comparing cost of hog production to percentage of total production, farmers who have increased production are able to cover costs better than those whose production remains low (McBride & Key 2003).

The incorporation of more technology into agricultural production operations has also been a contributing factor that underlies farmers' decisions to get bigger (Hart 2003; Davis, Newton & Gillespie 2005; MacDonald & McBride 2009). Mechanical technologies (such as automated feeding), biological technologies (such as the use of probiotics and antibiotics to reduce the catch and spread of disease) and chemical technologies (such as fertilizers and pesticides) have led to more efficient production, making it easier for farmers to grow their operations. The controlled environment within a confinement, where hogs may be protected from the elements, is also a very useful technological adaptation. Farmers may also

implement technological innovations such as bio-covers on lagoons and injecting manure into the ground (rather than spreading it over the top of the ground) to reduce noxious odors. While these technologies have allowed for greater efficiency and advancement in agriculture, they have numerous social and environmental costs (see DeLind 2004; Lobao & Stofferahn 2008).

A common factor among the aforementioned reasons for growing operations is to reduce financial risk for farmers, especially in situations involving contracting (Kliebenstein & Lawrence 1995). Compared to risks associated with other types of production, those involved in agricultural production involve more factors that are beyond farmers' control (Davis 2002). Risks involved in hog production might include common risks (such as a disease outbreak in an area) or idiosyncratic risks (such as a mechanical failure that negatively impacts production) that are isolated instances of risk and not likely to affect many producers in a given area at a given time (Davis 2002). Farmers also bear price risk—the disparity between prices that are expected versus actual prices received for a commodity (Davis 2002). For farmers who remain independent, they carry 100% of these risks. However, certain business decisions may reduce their vulnerability to these risks, such as vertical integration/contracting to help reduce price risks. Shared ownership of livestock also takes some of the burden off of individual farmers, should common or idiosyncratic risks materialize (Hart 2003; Davis 2002; MacDonald & McBride 2009). However, in order to benefit from these risk reductions, farmers find they must grow their operations to remain a viable operation.

Production growth: From the farmer's perspective

While any or all of the elements just discussed may provide the basis for farmers' decision-making processes, farmers themselves describe why they choose to adopt certain practices in less technical ways:

It's not a simple deal. We started off as just basic farmers and, back to my early days before I even was in business, Dad produced a lot of feeder cattle. [A]nd times hit bad with feeder cattle [...] and we a had to go to contract feeding hogs to survive [...] That was in the mid 80's [...] as a total result of [the farm crisis] [...] The mid 80's and ever since then, we've either been remodeling or building to get to where we are now, and where we are now is kind of a combination of contract feeding as well as owning pigs ourselves at the current time (Farmer B, personal communication, n.d.).

Change and adaptation in response to factors which farmers as individuals have little or no control over reduces susceptibility to risks that have long characterized farming. Such perpetual change impacts farmers' perceptions of what is risky at a given time, and decisions may be made based on those perceptions. Short (1984) states:

Human agency insures that human problems will remain ever changing. People learn, and learning has consequences for behavior which alter conditions and perceptions of what is problematic. Fateful choices regarding risks are made and acted upon, thereby altering the problems they are designed to affect, though not always as intended (P. 716).

Farmers' have agency in that they are able to make decisions about the way they practice livestock production. It also means that their decisions might be appropriate at a given time, but may become inadequate as time passes. However, decisions are continuously made, and

each decision changes perceptions of and gives new meaning to the current conditions. The process continues, and subsequent decisions build off of each decision before it, and conditions remain ever changing. Under certain circumstances (like the farm crisis), farmers may not have the luxury of looking ahead to think about how their decisions will play out in the long run, but still must make decisions. Thus, their decisions are based on what they think will keep them in operation for the time being.

Another interesting point is that the farmer who made the statement above, as well as several others, based their decisions on what they believed it would take to *survive*—to remain a viable entity that would continue to provide for his needs. Economic pursuit is intrinsic to what farmers do. It has to be because their livelihoods depend on it. However, economic pursuit does not inherently translate into sheer profit-seeking as a dominant motivating factor among farmers' decision-making processes. Rather, economic pursuit is necessary to provide for their families, to support local businesses, and to support their local communities. For many farmers, increasing the size of operations seemed to be the only way to achieve this.

As one farmer put it, “Today the industry has changed in such a way that my size wasn't big enough to compete with the volume, or to get the agreements with the packers or the feed mills, so I got out in front of the train and I joined the boat” (Farmer I, personal communication, n.d.). Mid-sized farms have been disappearing over the last several decades (Gladwin & Zulauf 1989). Full-time, mid-sized hog producers who have chosen survival strategies other than increasing scale of production have found themselves and their production operations becoming more obsolete. Furthermore, they do not generate enough income to remain a full-time entity; thus, some transform into small, part-time operations that

must be supplemented by off-farm income (Gladwin & Zalauf 1989). As such, many farmers have resorted to an “if you can’t beat ‘em, join ‘em” mentality to try to stay afloat.

According to one farmer, survival is sometimes a non-stop struggle. To complicate an already risky industry, when one’s livelihood has been threatened by unforeseen events like the farm crisis, it can be difficult to rebound. These experiences stick with farmers. As one farmer recalls:

I started farming in ’83 and until ’98, I guess I would have thought my neighbors viewed me as young and successful. And then from ’98 it seems all I do is get older and less successful [...] ’98 was a big hog market crash and I got just walloped. And it seems like I just still struggle. It just doesn’t seem like anything works for me [...] But I custom feed now so I don’t have to worry about the market ups and downs (Farmer E, personal communication, n.d.).

Negative experiences like this one may influence their management decisions, especially if any of their choices serve to reduce risk in any way. According to one farmer, “I think the fact that the return on investment and the associated lower risk [with large-scale production], I think has made it a good addition to people’s operations” (Farmer B, personal communication, n.d.). Another farmer recollected:

I didn’t switch [to contract hog feeding] until 2002 [...] My father and I were a partnership in the hog operation; he passed away in 2001. We were running about 700 sows and he had run about \$600,000-700,000 worth of inventory, and I bought that out. And I needed the security to meet my obligations and I just didn’t want to assume as much risk, because then I was shouldering all the risk. I also feel that, like I say, the industry changed so much [...] You need big volumes, that’s what the packer

drove the system for—to meet their demands, and that’s just where it is today
(Farmer I, personal communication, n.d.).

In the case of many hog producers, including those interviewed for this study, survival in the industry has been mostly contingent upon their ability to expand operations and contract since this has proven to ease risks (Davis 2003; Kliebenstein & Lawrence 1995; MacDonald & McBride 2009; Martin 1997), by distributing risk among more entities.

Most farmers have accepted this structure as the reality for themselves. It is therefore the system within which they must continually figure out what they believe will be the best way to operate. One of the ways that farmers have learned to operate within the current system has been by adopting the use of technologies that facilitate large-scale production. The farmers interviewed believe most technological advances in livestock production to be beneficial to the industry and those who depend on it, whether they be producers or consumers. Technology has allowed them to become more efficient. For example, antibiotics can help reduce the mortality rate of their hogs (Davis 2003). Also, a confinement provides the shelter and feeding capabilities necessary to raise greater numbers of livestock at once. One farmer believes that such innovations have provided his hogs with a much better way of life, but that non-producers do not understand this or do not agree. In response to negative feedback that he has heard about confined feeding operations, he voiced his frustrations:

[D]id you guys raise pigs out in the A huts and go out there in a rain storm and behold a litter of dead pigs that got drowned out [...] Like, I had pigs in the Halloween blizzard and lost gobs of them out in the blizzard and I was like, ‘Are you guys out

there?’ And now you’re telling me I’m supposed to raise my pigs that way [in A huts again]? It’s like, get a clue (Farmer E, personal communication, n.d.).

This farmer believed that using technological innovations to raise livestock improved not only his own security, but the lives of the livestock he raises. Furthermore, his negative experience with a less-technologically advanced approach to livestock production that was hurt by uncontrollable forces of nature influenced his choice to implement new means of production. His frustration grew out of a perceived lack of recognition by others of the circumstances that led him to his decision to implement new technology. Another farmer recalled his belief that technology has been a very beneficial factor in livestock production for him. He states:

[I]mproved technology in terms of the ‘get it done’ side of it [raising livestock] has really been improved. Um, I just know from growing up, which isn’t that many years ago—we used to load thirty pigs in a trailer and it took a couple hours or three to do that, and now you can load a semi in twenty to thirty minutes. [A]nd then with the manure injecting and incorporating into the ground and soil testing, and I think those things have really, really—acceptance has gone up (Farmer D, personal communication, n.d.).

Not only has technology improved efficiency for this farmer, but farmers believe that technological innovations like injecting or “knifing” manure into the ground have made large-scale livestock production more acceptable.

The farmers interviewed based their management decisions on what they trusted was the right thing to do to be able to navigate the changing structure of agriculture and remain marketable. They felt that even though their decisions to get bigger were largely driven by

uncontrollable factors, it has ended up working out for the better, especially in terms of reducing risk and providing a better way of life for the animals they raise. Livestock producers take pride in the way they run their operations—treating their livestock with respect, testing the soil prior to manure application to ensure that it is treated correctly, putting bile covers over manure lagoons to reduce odor, and so on. Every farmer interviewed expressed a common sentiment that the way they do things now is better than it used to be (in terms of things like animal welfare, making sure their facilities are clean, and avoiding environmental mishaps), regardless of size, and that they are better producers because of it. They try to run their operations in a way that they hope makes this point clear to others in their communities. However, in the following chapter I will discuss how the participants in this study nonetheless expressed an opinion that they are in a vulnerable position in relation to the non-farming public. They fear that their neighbors or other community members could act against them because of the type of operation they run. In response, the interviewees tended to place an even heavier focus on good management strategies to help mitigate their feelings of vulnerability.

CHAPTER 5. FARMERS' PERCEPTIONS OF PUBLIC CONCERN AND RISK MANAGEMENT RESPONSES

As discussed in Chapter 4, the farmers interviewed believed that their decisions for increasing scale of production were logical and justified. Nonetheless, they have experienced some adversity as a result of those decisions. A major theme throughout every interview was the pervasive sense of vulnerability felt by large-scale hog producers. In this chapter, I argue that the primary source of vulnerability among farmers stems from their belief that they could become the targets of action spurred by public concerns about large-scale livestock production. The means by which farmers choose to address risk subsequently affect relationships with their neighbors and other community members who may also be impacted by their decisions.

However, I argue that farmers' decisions on how to manage public concerns about risk are impacted by relationships with organizations and institutions responsible for managing risks associated with large-scale hog production. Institutions and organizations that farmers look to for assistance (for example, Iowa Pork Producers Association) tend to address public concerns about risky systems and technologies using a very technical, "give them the facts" approach based on quantitative analyses of risk (Freudenburg 1996; Sapp et al. 2009; Short 1984). They educate both non-farmers and farmers by communicating information about large-scale pork production. That information is then put into practice by farmers, who focus their efforts on implementing management methods that they believe to be supported by these facts. They assume that doing so will also help manage risk, as well as their vulnerability to a skeptical public. In turn, this technical approach to risk management

affects levels of trust and perceived quality of their relationships with neighbors and community members.

Vulnerability: Sources and responses

There appears to be multiple sources of vulnerability experienced by farmers. To begin with, hog producers have developed concerns about the lifespan of large-scale livestock production. They wonder whether or not their operations will remain viable entities in the coming years. One farmer recalled that even within the relatively short period of time that large-scale hog production took off and became the dominant trend, the industry has continued to change significantly, and not for the better:

[Back when he started large-scale livestock production] The whole integrated concept was new and the money was good, and now profits for the companies have gotten so narrow that [...] there isn't a lot of room for advancement [...] and there isn't as much opportunity (Farmer A, personal communication, n.d.).

Limited opportunities and narrow profit margins also contribute to the competitiveness and “jealousy” perceived by the farmers interviewed. Farmers who cannot keep up with the competition risk falling behind and face a whole new set of pressures to figure out ways to maintain their business. Tension between those who “get ahead” and those who “stay behind” may emerge as a result. These social phenomena relate to the concept of the agricultural treadmill (Cochrane 1958), where farmers who adopt technologies early on realize increased benefits (Roling & Jiggins 1996). However, the chance that they will be unable to keep up is always there, feeding farmers' sense of vulnerability.

Another farmer expressed similar concerns about the risk of losing money from his operation. He thought this could potentially force him to stop raising hogs altogether (Farmer I, personal communication, n.d.). He stated:

I switched to contract finishing, and the concern is always that your integrator state is a viable option because you don't want [to] lose money and have to quit [...] I also feel that [...] the industry changed so much, and we can talk all day about how everybody was farrowing fifty sows, but we all realize it will never go back there [...] And it may continue to change. [M]y concern [is], first off, your source of pigs [...] I mean, everything's getting so tied up that in five years, is there a system I can get into to even get pigs? And then, is there going to be a means to market those pigs? [A]nd it keeps getting that way more every day [...] And I'm not sure the industry is going to change enough where you're even going to be able to get back in it with selling 12,000 head a year (Farmer I, personal communication, n.d.).

This statement makes certain things clear. First, it reveals a predicament, where decreasing production is not understood by farmers to be an option, but where the current system may not provide all producers with the means to raise hogs. That is, it may continue to squeeze farmers who do not have the means to produce and sell a certain number of hogs each year out of the system. This statement also shows that this pork producer has recognized the subordinate position of hog producers in relation to more powerful industry players, such as the meatpacking plants. Both of these factors can contribute to farmers' sense of vulnerability, because farmers believe that they are factors beyond their control. They believe they are at the mercy of more powerful entities that dictate the way they produce hogs.

Related to farmers' concerns about the viability of large-scale hog production are farmers' concerns about future economic crises. Farmers' concerns about economic risks and crises are justified, given the hits that the hog industry has taken in the past—especially for those who farmed during those crises. Similar to their susceptibility to pressures of the current system of livestock production, farmers feel constant vulnerability to market forces that are beyond their control (Farmer G, personal communication, n.d.).

Economic pressures and an unpredictable system are significant sources of vulnerability for farmers. However, the interviewees seemed to be even more worried about the impact that public concerns about large-scale livestock production could have on them. This includes the potential for nuisance lawsuits. All of the participants had heard about complaints directed at large-scale pork production. While none of them had complaints directed at them personally, some expressed worry that this could one day change (Farmer F, personal communication, n.d.). One farmer who raised both cattle and hogs and explained that he takes careful measures to ensure that his operations do not interfere with the lives of his neighbors. Injecting liquid manure from his confinements into the ground and implementing methods that prevent run-off onto a nearby golf course are a couple of measures he takes to make sure that his neighbors and other community members remain happy. However, he fears that this will not be enough:

It [our hog confinement] doesn't usually smell very bad, but once in awhile if the wind is in the right direction, or when we haul manure here, they're [neighbors are] going to smell it. They don't really like it but we're worried that someday they're going to complain enough where we're going to have to quit feeding cattle. Do we

dare build another [cattle] yard or two here or are they going to start complaining because we've got more cattle? (Farmer F, personal communication, n.d.).

For this farmer, the concern is that he will no longer be able to practice agriculture in a way that will allow him to maintain a livelihood. On one hand, his statement shows his belief that expanding operations may be necessary. On the other hand, further expanding his operations could lead to increased complaints to the point where they could no longer raise livestock without incident.

Farmers are particularly concerned about nuisance lawsuits being brought against them (Farmer A, personal communication, n.d.; Farmer C, personal communication, n.d.; Farmer F, personal communication, n.d.; Farmer D, personal communication, n.d.; Farmer B, personal communication, n.d.). When asked what some of his biggest concerns as a hog producer are, one farmer stated:

I would definitely say potential lawsuits. I mean, that's got to be a big one. In today's world, everything seems to go to court, so that's always a concern for us. Even if we're doing everything the way we think we need to, the potential is there that, you know, someone could come back on us (Farmer A, personal communication, n.d.).

Hog farmers fear that a lawsuit would not only cause them to have to cease their operations, but further damage their livelihoods through monetary expenses that they would have to pay out themselves. According to another farmer:

Nuisance is a big thing. I mean, how many people can take [money] out of their wages if their neighbor would sue them for \$200,000.00 or \$300,000.00 for nuisance for no reason? How many people could take that money out of their wages? [I]'ve

got payments to make, I'm just like they are. [A]nd when I get done, I make a living and that's about it [...] I got a lot more risks than they do. [...] If I lose money, I still got to make a payment [...] I got to make a payment on everything. They can come and take everything. I don't have no 401K Plan or nothing like that. I'm done. I'm broke [...] (Farmer F, personal communication, n.d.).

Explicit in this farmer's statement is his belief that as a farmer, his profession involves more risk—for example, that he cannot control factors such as the market or the weather.

However, implicit in this statement is the farmer's belief that sympathy for these increased risks should inhibit non-producers' actions that may materialize out of their concerns about large-scale pork production. When this does not happen, farmers' frustration may increase. This may be the case especially for those who use production methods to help ensure that their operations do not negatively impact their neighbors (Farmer A, personal communication, n.d.; Farmer E, personal communication, n.d.; Farmer G, personal communication, n.d.; Farmer B, personal communication, n.d.), even if they believe that these methods may cause more work for themselves or create more costs (Farmer B, personal communication, n.d.). For farmers, it is difficult to understand why non-producers would not be sympathetic to their predicament as a livestock producer. They believe that those who would wage a nuisance lawsuit against them do not realize that it is their livelihood at stake, which upsets them. With all of these beliefs combined, farmers' feelings of vulnerability persist.

When others who do not live in rural areas or who move into rural areas from elsewhere lodge complaints about their operations, farmers become frustrated because they lack the flexibility to relocate to other areas. They worry that non-rural residents in their

community harbor preconceived notions about hog production, as well as an inherent opposition to it (Farmer F, personal communication, n.d.; Farmer E, personal communication, n.d.). Consequently, this serves to contribute to farmers' feelings of vulnerability, and they feel that it is unfair:

We got a neighbor across the road here getting close to retirement; there's nothing on that place, she owns only the house [...] so if she sells that, it's going to be somebody that works in town who wants to live in the county. They're going to have to deal with our smell, too. Are we going to have to worry about that when we go haul manure on that side of the grove? You know, we don't want to have to do that because this is our life. This is our livelihood, you know, that's what concerns us. [W]hy [...] are we going to have to conform our ways for one neighbor because they don't want to smell it, but they had a choice whether to live in town or out here? (Farmer F, personal communication, n.d.).

Farmers are limited to running their operations in rural areas, and may be further limited within rural places. They feel stuck in a position where they could easily become the subject of a lawsuit, but cannot easily change their operations. They believe that if people want to move to rural areas, then they also need to be able to handle what comes with producing hogs, including the smell (Farmer J, personal communication, n.d.).

Farmers are worried about non-producers impacting rules and regulations that affect them. All of the farmers who discussed regulations acknowledged that regulations are implemented for legitimate reasons, and agree that they need to be there. However, some of them pointed out what they felt were more detrimental outcomes of these regulations for farmers, such as creating inconveniences (like taking up time and making more work) and

even making it easier for vertical integrators to come in and take over farms (Farmer C, personal communication, n.d.). The interviewees understood the need for regulations; one farmer in particular believed that they had helped him become a better producer (Farmer J, personal communication, n.d.). However, many of them also believed that many of them have been brought about for the betterment of others' lives, without consideration of what they do to their own lives. According to Farmer F (personal communication, n.d.):

The feeling we got out here is the DNR is listening to the people in town. I mean if this guy is complaining then well, we'd better go talk to that guy [...] It makes the whole neighborhood kind of crabby because we feel like the DNR is just listening to these people in town and that's what's happened and they're coming against us.

Perceptions like these have led to feelings of resentment among farmers, who believe that they go out of their way to make sure they follow regulations and try to make sure that they do what they think is right. With so many regulations that have come about (and continue to materialize), they are worried that they may overlook something that will cause a stir among non-producers and make them even more vulnerable to potential actions that could be brought against them.

Managing risk: The ignorant public and institutional influence

The participants tended to attribute their feelings of vulnerability to public concern and skepticism about large-scale hog production. And they tended to attribute public concern and skepticism to the public's ignorance about what it takes to run a large-scale hog operation (Farmer J, personal communication, n.d.; Farmer E, personal communication, n.d.; Farmer I, personal communication, n.d.; Farmer F, personal communication, n.d.; Farmer B,

personal communication, n.d.). Farmers are not necessarily wrong about this. According to Sapp et al. (2009), the public is indeed ignorant (but not irrational) about what it takes to manage large-scale operations, and not knowing causes them to be skeptical. This skepticism is then subject to interpretation by farmers. As one farmer put it, “I guess I just feel that they’re so ignorant that they don’t know,” (Farmer E, personal communication, n.d.). He felt that if others are not producers themselves, then how can they offer better ways of raising hogs?

Another farmer expressed his opinion that, if one is to be truly knowledgeable about pork production, one should know *how* a large-scale operation works. He stated:

[B]ut I honestly don’t think most people have a clue how the system works, what’s the beginning point, what’s...they know that pigs, once they get big they’re sold and that’s about all they understand. They don’t have a clue how many days or how many head are in a building, or no conception about what is really in these facilities [...]

(Farmer I, personal communication, n.d.).

Because these are important aspects for pork producers to know, they believe that the importance of these factors should also be understood by those who want to have a say in how hogs are raised. Without this knowledge, non-producers’ opinions are not taken seriously.

Farmers’ discouragement about these issues is understandable if one considers that farmers go out of their way to make sure they do things in a way that they believe is right, and that is backed by science (Farmer A, personal communication, n.d.; Farmer G, personal communication, n.d.; Farmer J, personal communication, n.d.). One farmer stated:

I mean, we can be pulling machinery down the road and the people don't even know what you use it for. [...] I mean, the same way the livestock—the feed ingredients, and the genetics you've got to keep track of, and your antibiotics. You know, there's more behind it than just throwing some slop to the pig today [...] Today it's way different. I mean, I never handle a scoop anymore. Things are clean. [I]t's a way different deal and the town people don't realize that yet. They still got the old theory that everything gets done the old way. I, for one thing, and I'm just going to say this for just about all the pork producers. We don't want everybody coming and looking in our building for disease reasons, but I think if people would really get a picture of it of how this livestock is raised today, it would be different (Farmer F, personal communication, n.d.).

Farmers feel that communicating technical knowledge to the ignorant public should ease concerns. However, it does not always happen this way.

As professionals in agriculture, large-scale pork producers are considered institutional actors (see Clarke & Short 1993) who are partly responsible for risk management. However, the farmers in this study also referred to a number of larger and more powerful institutions and organizations that they look to for support when it comes to risk management. Some of these included higher education institutions including Iowa State University, special interest groups like the Coalition to Support Iowa's Farmers and Iowa Pork Producers Association, and various government entities like the local Board of Supervisors and the Department of Natural Resources (DNR). In this section, I will discuss factors that affect the way farmers approach risk management, including organizational and institutional support and farmers' perceptions of public concerns about what they do as large-

scale pork producers. I argue that farmers' continued focus on educating the ignorant public may stem from their relationships with organizations and institutions responsible for managing public concerns.

Farmers' opinions that the problem with concerns about large-scale pork production is primarily due to ignorance reflects opinions is perpetuated by many organizations and institutions that deal with issues concerning large-scale pork production. According to Clarke and Short (1993), "Organizations and elites who make such decisions [about how resources are allocated for risk amelioration], especially in large corporations and federal regulatory agencies, still hew to the line that the problem with risk acceptability is insufficient and low quality information" (p. 380). The solution is for organizations and institutions to "give them the facts" in an attempt to educate the public about the science and technology behind what exactly it is that they do. Farmers tend to relay this information to the public as a way of communicating with them about risk, emphasizing technical details of the system that they help to manage (see Clark & Freudenburg 1993). However, even this type of communication does not often occur unless it is at an organized event in the community, such as at a county fair where the Iowa Pork Producers have a tent set up, for example.

It is important that those who may be affected by a risky technological system can depend on managers to do their jobs with adequate reliability (Freudenburg 1993). Clarke and Short (1993) note, "Risk management organizations and institutions almost always assert they can control risky systems—even when such control is uncertain—and hence that people should trust them" (p. 385). When institutions and organizations that farmers look to for

support take on this position, it can also manifest in farmers who work within the system and who look to these institutions for guidance.

According to Freudenburg (1996), “When a proposal or technology runs into strong opposition, the typical approach has been to commission another study—the results of which are used to ‘demonstrate’ that the benefits of the proposal or technology are great and the risks are small” (p. 51). Methods of risk management used by farmers is based on providing the public—their neighbors and other community members—with technical information to educate them about the science behind large-scale production so that they will no longer be ignorant. They believe that, if their neighbors and community members know what goes into pork production, then concerns about it would cease to exist, and that pork producers can thus be trusted do their jobs responsibly. In turn, this perspective impacts the way that pork producers go about day-to-day management of their operations.

Managing risk through good management

When it comes to management of large-scale operations, farmers’ belief in educating an ignorant public on the science and facts regarding pork production encourages them to focus on best management practices. Farmers themselves are educated by organizations and institutions that tell them, “This is what you should do, or that is what you should do.” By doing these things, and believing that they are adequate methods, they come to understand that these are legitimate methods. But since the non-farming public is not able to experience this “verification” firsthand, they remain skeptical. The farmers interpret the situation as a matter of educating them about method so that the public can see for themselves that proper management methods work. Whereas farmers believe that the “science” should be

communicated through other entities, they see themselves as providing proof of the science, and thus educating the public through practice. Their job is to do the work itself.

The interviewees' associations with organizations and institutions that deal with agricultural issues (be it through membership or actively seeking support from an organization) help to instill and reinforce the use of good management. This is because good management allows farmers to provide verification that the information being disseminated by institutions is accurate, and so it should follow that farmers can be trusted to do their jobs well. As such, farmers use certain management practices as a means to build trust, assuage public concerns about risk, and ease their vulnerability to public skepticism. Mitigating odor through various manure management techniques, maintaining site appearances, and treating animals well were all management techniques that these farmers said they implement to help build trust and improve relations with others in their communities. For example, because odor is a significant cause for complaint among neighbors, farmers try to use management strategies that will cut down on the smell produced by their operations in an effort to build positive relationships with their neighbors—or at least avoid conflict. A common practice that many hog farmers use is to inject or “knife” manure waste from their confinements into the ground to help reduce swine odor—even if there are other preferred methods. Farmers hope that by doing so, it will decrease the likelihood that neighbors will complain and perhaps even lead to increased acceptance of the way they raise hogs. What becomes clear here is that farmers are cognizant of the concerns of community members, especially of those who live in close proximity to their operations. Farmers include these concerns in the mental equation that helps them to determine the management practices that they decide to implement, which helps to maintain positive neighbor relations.

While certain manure management practices help to mitigate swine odor, some farmers go in a different direction and focus their attention on how aesthetic qualities of their operations also impact relationships within their community. One farmer has even found that keeping up site appearances can help to diminish the chance that odor will become an increasingly unbearable nuisance.

I've got employees go site-to-site on a weekly basis I mean—part of their check list is what is that site look like and if it doesn't meet our specifications, they're asked to get to that point within a matter of days [...] There's always going to be the smell but I think if you can make it look appealing, a lot of times the other stuff goes by the wayside and that's what we try to focus our efforts on is making it appealing to the eye (Farmer A, personal communication, n.d.).

The same farmer found that his efforts to maintain the aesthetics of the surrounding area has been received positively by neighbors. He noted that, while the odor is still a nuisance, those who live near the operation are more willing to put up with it due to his efforts at minimizing that nuisance, even if it cannot be completely eliminated.

While good management keeps some outward complaints at bay, it obviously has not eliminated feelings of vulnerability among the farmers interviewed. They still feel vulnerable to public concerns, though public concerns are perpetuated by inadequate approaches to risk management. This approach is reinforced by organizations and institutions that farmers look to for support. In the next chapter, I will discuss in greater detail why management and a technical approach fall short of meeting farmers' (and the public's) actual needs.

CHAPTER 6. RECREANCY: SHORTCOMINGS OF A TECHNICAL APPROACH TO RISK MANAGEMENT

There are shortcomings to addressing risk by giving the public “the facts,” and focusing efforts on good management practices. This is evidenced by the perpetuation of public skepticism, and by farmers’ perceived vulnerability to it. The task of risk management has proven to be difficult for the hog producers interviewed, because they take on competing roles when interacting with the public, versus with organizations and institutions.

In this chapter, I argue that while farmers are institutional actors who make decisions about the way they do pork production, as individuals they hold minimal power in terms of meaningfully addressing public concerns. This is because their decisions are constrained by their relationships with more powerful organizations and institutions that they look to as opinion leaders to provide risk management support. Institutions and organizations do provide farmers with much needed support and advice, which farmers diligently adhere to. However, this technical approach to risk management does not address actual public concerns well, because “giving them the facts” overlooks values that underlie those concerns. As such, both farmers and institutions/organizations may be understood to be at fault when it comes to the failure to address public concerns well.

While the farmers interviewed may be associated with these institutions and organizations, they nonetheless distinguish themselves from them by also identifying as members of community whose decisions about pork production are based on what is good for their community and neighbors. Inadequate risk management and communication from

institutions and organizations that are supposed to act on their behalf (as well as the public's) leaves farmers feeling susceptible to potential actions resulting from public perceptions of risk about large-scale hog production. This negatively impacts their efforts as community members who try to build trust and improve relationships with their neighbors. Instead, the farmers felt at times that they themselves end up serving as a buffer between the public and powerful institutions and organizations. In this way, institutions and organizations do not meet fiduciary obligations to both hog farmers and non-farmers.

I argue that formal organizations and institutions serve as weak intermediaries between hog farmers and the concerned public, providing inadequate risk management and communication. A major issue with this is that directing concerns at farmers themselves does not allow flaws of the system itself to be addressed, and so faulty, but powerful, systems are kept in place. Thus, institutions and organizations can at once be hog farmers' greatest allies, as well as agents that perpetuate farmers' sense of vulnerability.

Shortcomings of a technical approach to public concerns

In the last chapter, it was shown that the participants tried to manage public concerns about risk and build trust with neighbors by focusing on management strategies. In this context there is hope that not only will the management strategy perform as expected, but implementation will also prove to the public that the way they raise hogs is nothing to be concerned about. The farmers also expressed a desire for organizations and institutions responsible for risk management to help communicate to the public that the way they raise hogs is backed by science and factual evidence, and so again, concerns about risks of large-scale production should diminish. While these strategies may help prevent outright conflict

between farmers and their neighbors, the farmers interviewed still describe a tension that permeates their communities. This may be due in part to the shortcomings of such a technical approach to public concerns.

For farmers who know the ins and outs of large-scale pork production, it may be difficult to understand why “giving them the facts” has not eliminated tensions and complaints among neighbors and community members. However, social science research can provide reasons why. One reason is that the public may not necessarily be concerned about whether or not large-scale hog production can be backed by scientific facts to prove its legitimacy as reliable method of production. Rather, *because* the public does not know how pork production is done, they must *rely* on the managers of pork production to do their jobs adequately (see Clarke & Freudenburg 1993; Freudenburg 1993). As we become more dependent upon technology and those who manage it, we also become susceptible to others’ failures (Clarke & Freudenburg 1993).

Farmers’ neighbors may not be as concerned about the possibility of accidents happening as they are concerned with whether or not farmers managing large-scale production operations are acting with fiduciary responsibility on their behalf (see Clarke & Short 1993; Freudenburg 1993, 2001; Sapp et al 2009). They are concerned with how risks are distributed, and whether or not they are distributed fairly (see Freudenburg 2001). Clarke and Freudenburg (1993) point out, “Current social science converges on the conclusion that the crucial factors in risk perception have to do with the trust and credibility enjoyed by those who are responsible for managing science and technology” (p. 80). Thus the issue is, at least in part, a matter of the trustworthiness of both farmers and institutions that deal with agricultural matters, as the association between them affects perceptions of trust. Trust is a

necessary component for fostering relationships that may be influenced by controversial technologies. Controversial technologies may not gain acceptance if their managers do not behave in ways that engender the trust of others.

Controversy surrounding large-scale hog production exists because certain elements of large-scale pork production—animal welfare, environmental risks, etc.—challenge others' values. According to Freudenburg (2001), questions about technological controversies should include consideration of not only facts, but also values and “blind spots” (p. 127). Questions regarding facts may focus on technical issues of safety, whereas questions of value move beyond facts to address whether the level of safety is adequate. Questions about blind spots try to uncover factors that have been overlooked (Freudenburg 2001). Public concerns and values will not disappear if only questions of fact are addressed, and trustworthiness does not inherently follow good management. When farmers provide their neighbors with technical knowledge, such a process may well fail to demonstrate a concern for their neighbors' values. It also does not inform their neighbors about their own values—their sense of fairness and responsibility, their confidence and their legitimacy (Short 1984). Needless to say, interactions that overlook these factors do little to foster a sense of trustworthiness between farmers and their neighbors.

Decision-making processes surrounding the way pork production is done are critical if trust is to be built, especially since there is potential for such a technology to affect people differently in terms of the distribution of costs and benefits (see Freudenburg 2001). According to Short (1984), “Fairness, confidence, trust, fiduciary responsibility, moral responsibility, competence, legitimacy are all terms we recognize as vital to social

relationships and systems [Barber 1983] [...] These relationships and systems lie at the heart of the social fabric” (p. 716). Sapp et al. (2009) add:

Interpersonal trust is [...] the perceived bond between a specific agent and the trustee [...] Typically, this form of trust is operationalized as the attitude that an actor holds toward the object, such as an expectation of competence, goodwill, ethical behavior, or commitment to a future action. Interpersonal trust likely is associated with trust as a feature of collectivities to the extent that it serves as a foundation for organic social solidarity (p. 528).

Because each of these characteristics are important to social relationships, interactions between farmers and their neighbors must go beyond providing a technical education of pork production. For meaningful relationships to be built, it must involve mechanisms that help build trust. However, being able to implement such mechanisms has proven difficult for farmers because of their “dual” social position as both community member and institutional actor, as well as constraints resulting from their relationships with institutions responsible for risk management.

Recreancy theory: Farmers’ lack of institutional support

Farmers are not only institutional actors themselves, but also community members who express a need for agricultural institutions to help manage public skepticism that they face in their profession. Unless farmers are one of few who hold a position within a formal decision-making entity, they depend on organizations and institutions to act with fiduciary responsibility on their behalf. Farmers, too, are impacted by decisions made by these organizations, and by the ways that they manage public concern about large-scale livestock

production. Thus, the question should be asked: Are organizations and institutions responsible for risk management regarding large-scale hog production meeting the needs of those they serve? Recreancy theorem can be used to help answer this question.

Social scientists (Clarke & Short 1993; Freudenburg 1996, 2001; Sapp et al 2009) have proposed analyzing social situations involving risk from within an institutional context, instead of focusing on individual perceivers of risk (Freudenburg 1993). Recreancy theorem implements this idea by analyzing the behaviors of institutions and organizations responsible for managing risk for its constituents (Freudenburg 1993). Institutions and organizations that fail to act with fiduciary responsibility on behalf of the public (whom depend on them and are vulnerable to their failures) are *recreant* (Freudenburg 1993). When institutions and organizations are recreant, societal trust, which is controlled by the assessors of risk and the institutions that manage it, tends to erode (Freudenburg 1993).

In most cases, recreancy theorem has been discussed in literature in a way that suggests a clear delineation between the “public” and the “institution” or “institutional actors” (Clarke & Short 1993). However, such a dichotomy is not as cut-and-dry when it comes to pork producers. Farmers’ role as both members of the public *and* institutional actors presents an interesting and complicated dynamic when it comes to analyzing risk associated with large-scale pork production.

As agricultural professionals, large-scale hog producers are institutional actors who make decisions about the way they as individual farmers do hog production. As discussed in Chapter 5, they align with (and may even be members of) various societal institutions that set precedents in terms of how public concerns are addressed, often using technical approaches that rely on disseminating scientific information in hopes of minimizing skepticism about

large-scale pork production. Many farmers embrace this information themselves and try to demonstrate its legitimacy through their own management practices, in hopes that it will cause their neighbors to trust that they are doing their jobs well. Unfortunately, such technical approaches to public concerns are not necessarily socially effective, and do not address actual public concerns. Organizations and institutions, as well as farmers *as institutional actors*, may be considered recreant in this sense.

However, as members of the public, it was important for the interviewees to distinguish themselves from these entities, too. Rather than identifying as *part of* an institution, they noted *relationships with* institutions, and looked to them for support when it came to managing public concerns about risk that they deal with in their communities. The DNR (Farmer A, personal communication, n.d.; Farmer F, personal communication, n.d.), higher education institutions (Iowa State University was specifically mentioned) (Farmer B, personal communication, n.d.), government officials and entities (county Boards of Supervisors were specifically mentioned) (Farmer A, personal communication, n.d.), and other agricultural organizations like the Iowa Pork Producers (Farmer B, personal communication, n.d.; Farmer I, personal communication, n.d.) and the Coalition to Support Iowa's Farmers (Farmer C, personal communication, n.d.) were all mentioned by the interviewees as institutions they believe have a responsibility to act on their behalf. They felt that these institutions/organizations are some of the only places they can turn to as a resource in the face of public skepticism. For the organizational/institutional support they do receive, the participants were appreciative. However, the interviewees also perceive these more powerful agricultural organizations and institutions as being recreant to some degree when it comes to dealing with concerns about hog production, for reasons that follow.

The farmers interviewed often feel that they are the direct subject of public skepticism of the non-farming public, because they are the actual practitioners of hog production. Some of them expressed dissatisfaction in terms of how well the aforementioned organizations and institutions serve as intermediaries between farmers and the non-farming public. They believed that organizations should be doing more to make farmers' voices heard, to help manage risk, to educate the public about hog production, and to help make hog producers' position on issues better understood. One farmer expressed his frustration, stating:

We've got to have somebody that knows a [expletive] thing about what they're talking about, because there's so many other people now that are on these boards, you know, making our decisions, rules, and laws that change our way of life, that change our pocketbooks. It's just [...] a lack of representation of people who know something about us [...] (Farmer B, personal communication, n.d.).

Another farmer expressed his belief that part of the reason the public is ignorant is because regulatory agencies like the DNR have failed to provide the public with education about pork production. A different farmer pointed to higher education institutions such as Iowa State University as the responsible party, conveying his dismay that they have not been "proactive" enough in terms of educating the public about the benefits of large-scale pork production.

The failure of institutions and organizations to address public concerns adequately leaves farmers *as community members* in a vulnerable position to actions that could be taken against them, particularly nuisance lawsuits. Because farmers have direct contact with their neighbors and other community members on a regular basis (or at least more regular than institutions and organizations have with them), they are more accessible to the non-farming

public. Rather than institutions and organizations serving as intermediary entities between farmers and the non-farming public, farmers instead serve as a buffer between the public and institutions and organizations.

This is problematic, because when actions are brought against individual farmers, it leaves the agricultural system that the public has concerns about unscathed, and the system fails to receive important feedback (see Clarke and Short's (1993) discussion of the theory of human error). If large-scale production continues to be upheld by certain institutions and organizations, farmers find it difficult to change their methods. If the public remains skeptical of how farmers raise hogs, then they also become skeptical of farmers themselves. As a result, farmers sometimes find it difficult to maintain positive relationships with other community members while maintaining their livelihood through large-scale pork production when institutional support to do otherwise is lacking. One farmer felt that he was looked down upon as a community member because of his profession, stating, "I don't know how the community would view me...I don't know. Just, uh, we're sort of the low rung of the ladder" (Farmer E, personal communication, n.d.). Another farmer expressed similar frustration, noting that despite their efforts to help out in the community, he thought that farmers are perceived as selfish. When asked about what he does to try to make positive contributions to the community to counter this notion, he stated, "Just [being] willing to help people in the community. I mean, let's show that we ain't just here to make money and be greedy about it, you know—we're just part of the community" (Farmer F, personal communication, n.d.).

There is a need among farmers to maintain relationships with organizations and institutions that will help them manage risk, even with the possibility of being considered

recreant by community members if the risk management methods are too technical and ineffective. This is because these entities sometimes serve as their only support system aside from themselves. As community members, though, hog farmers are critical of these institutions and organizations because they believe they have not done enough to curb public skepticism, thus turning farmers into the subject of controversy. In this way, these organizations and institutions become recreant in relation to both pork producers and non-producing community members. They do not address public concerns in a way that helps to mitigate the public's feelings of vulnerability to outcomes of potential risks (such as threats to quality of life and environmental externalities), or producers' feelings of vulnerability to potential actions taken by a skeptical public. As a result, farmers are left to figure out ways to manage risk and build trust within their communities on their own. The mechanisms they use are discussed in the next chapter.

CHAPTER 7. SOCIAL EXCHANGE: BUILDING TRUST AND EASING PRESSURES OF THE AGRICULTURAL/FOOD SYSTEM THROUGH INTERACTION

In light of the claim that institutions and organizations are recreant, farmers' decisions regarding hog production may be seen to have new meaning. In order to compensate for the loss of trust resulting from a lack of institutional support and risk management, I argue that farmers engage in social exchange with their neighbors to try to build interpersonal trust back up. In this way, farmers hope to build relationships that are mutually beneficial, where they can continue to maintain a livelihood through pork production, and that also help ease their neighbors' concerns about risks associated with large-scale pork production by demonstrating that they are trustworthy. Understanding these exchanges between farmers and their neighbors can help reveal shared values that farmers and their neighbors use to strengthen relationships across difference. While good management of large-scale production facilities is always necessary, it may actually be social exchanges that keep the social fabric of farmers' communities intact (Befu 1977).

Social Exchange Theory: A basic outline

Social exchange theory looks at resources that are exchanged in social interaction, including "love, status, information, money, goods and services" (Cropanzano & Mitchell 2005:880). While it is hoped that social exchanges will result in mostly positive, reciprocal relationships, the process of interaction that pork producers and their neighbors/community members engage in involves costs and benefits for both (Homans 1962). Certain behaviors incur costs, defined as alternatives that one relinquishes when they make an exchange

(Homans 1962), but also provide rewards and value. Homans (1962) notes that behaviors are dependent upon perceived profits that one gains from a particular behavior, where profit equals the benefits received from the behavior minus the cost to emit the behavior. When there is a high return on value that outweighs the costs of emitting a particular behavior, that behavior is usually reinforced (Homans 1962). This may result in reciprocity, or “repayment in kind” (Cropanzano & Mitchell 2005:875).

Homans (1962) identifies communication/interaction and cohesiveness as variables that affect the emission of behavior in social exchanges. When cohesiveness is great, the change produced in behavior is also greater, making activity more valuable. However, if someone does not find value in someone else’s behavior, then it encourages the former to stop producing that particular behavior. As a result, it decreases sentiment and the value of activity (Homans 1962). When there is no great change in the values of cohesiveness and/or interaction, then groups may tend toward practical equilibrium (Homans 1962), where behaviors balance each other out and social relations are mutually costly/beneficial, resulting in a stable system at a given moment. However, it may be that a truly stable system is rarely achieved. Rather, it is more likely that behaviors among members of small groups constantly change in relation to one another.

Social exchange: Building interpersonal trust through interaction

Relating Social Exchange Theory to this study, I argue that the farmers interviewed engage in behaviors other than good management to edge them closer to practical equilibrium with their neighbors. The interviewees perceived a change in community members’ behaviors that is not beneficial to them. That is, increased expressions of

dissatisfaction with large-scale pork production. This dissatisfaction may be perceived firsthand by farmers, or they may come to know about it indirectly through others who have been the subject of public concern. While other members of their communities were not interviewed, there is information to suggest that community members have also perceived disadvantageous changes (see DeLind 2004) and have become more vocal about their concerns regarding large-scale pork production. In some cases, they may have taken action against large-scale pork producers.

The predominant reinforced behavior among farmers had been practicing good management of their production operations. While they still focus on good management practices, it is not the only behavior that farmers emit; this will be discussed shortly. As the interviewees explained, they hoped that this behavior would satisfy the concerns of the public, while allowing them to continue to maintain their livelihood through large-scale production. As discussed in previous chapters, this behavior is encouraged by more powerful organizations that farmers have relationships with. However, the return on values gained from this behavior has, for the participants of this study, seemed to have plateaued (if not decreased). The benefits of good management are not accumulating as they may once have. At the same time, the behaviors emitted by the public are also changing, as is the frequency of their behaviors. Their behavior of suppressing concerns about large-scale pork production is not earning profits, either. As such, farmers' and their neighbors' behaviors are no longer reinforcing.

What is interesting about farmers' relationships with their neighbors/community members is that, while they may not have achieved practical equilibrium, their relationships are also nowhere near having completely deteriorated in spite of concerns about large-scale

production. Other types of behaviors of pork producers, other than good management, may help to explain this—behaviors that are centered on civic engagement and being involved in the community. In fact, the interviewees in this study engage to some extent in social exchanges that demonstrate/provide a profit not only for themselves, but also for their neighbors and the community itself—revealing values that can be shared by producers and non-producers alike and contribute to the well-being of the community. The following are community activities that the farmers interviewed mentioned being a part of: Member of local Chamber of Commerce, volunteering at the county fair, going to local Board of Supervisors meetings, participating at a local church, volunteering as a sports coach, being involved in the school system, member of the local fire department, and being involved in local clubs like dinner theater, booster club, etc. Every farmer interviewed engaged in at least one type of exchange. Some exchanges are indirectly related to their role as pork producers (such as involvement in the county fair or being a member of the Chamber of Commerce), whereas other exchanges are completely independent of it. All exchanges, however, serve as opportunities to build ties with neighbors and community members, because many of them are involved in these kinds of community activities, too.

The social exchanges enumerated above seem to have an impact on the way that farmers are perceived by their neighbors/community members, which may or may not help them achieve reciprocal relationships. For example, when asked how they think they are perceived as businesspersons by their neighbors, the farmers interviewed thought that they were viewed mostly positively. Some of them attribute this to their very interactions within the community (Farmer A, personal communication, n.d.; Farmer C, personal communication, n.d.; Farmer D, personal communication, n.d.; Farmer F, personal

communication, n.d.; Farmer G, personal communication, n.d.). Thus, it is possible that it is due to a combination of behaviors of good management and civic engagement. These types of activities help convey to their neighbors that they, too, care about the community and are concerned about doing what is best for the community. The values that motivate these types of exchanges also underlie their behaviors as pork producers, and guide other actions.

Because of their concern for the community, farmers feel that it should follow that others would understand this concern to apply to what they do as pork producers, too. When asked what message he wanted to give neighbors and community members as a pork producer, one farmer stated:

I think the main thing is, for the most part, pork producers that I know and work with are very willing and want to do the right thing, and when approached in a constructive way [...] I think are very good at responding to what the concerns and needs are, and that's the main thing that I want people to know (Farmer D, personal communication, n.d.).

By being involved in the community and getting to know their neighbors, pork producers may find themselves in a better position to be known as a trustworthy person, thus making statements like the one above more credible.

Both types of behaviors of farmers are crucial for building and maintaining reciprocal social interactions. The difference between good management and being involved in the community is that the former behavior can be carried out without interaction; interpersonal trust is incidental. In contrast, the latter fosters interpersonal trust by building sentiment through necessary interaction. According to Blau (1964), social exchange relies on the creation of trust and obligation to one another, and thus lasting connections to one another.

The greater the interaction between people, the greater the sentiment they feel for one another, and thus the better the chance that interpersonal trust will be built—a necessary component of mutually beneficial relationships (Cropanzano & Mitchell 2005). In other words, reciprocal relationships help foster trust between social actors, potentially resulting in increased commitment to one another (Molm, Takahashi & Peterson 2000). Civic engagement builds on shared values that can be identified through interaction with others, rather than capitalizing on incidental benefits of certain behaviors. Civic engagement also often involves exchanges that do not rely on the presumption of any type of profitable return, which helps demonstrate trustworthiness (Molm et al. 2000). Thus, we may understand the missing element that helps reinforce mutually beneficial relationships to be trust itself. Educating the public about what exactly is involved in pork production does not foster trust or result in a sense of obligation to one another, because the exchange is not reciprocal. Neither does focusing on good management (although it is nonetheless crucial), because it is a benign behavior reinforced through farmers' knowledge that it may potentially result in fewer complaints about their operations (Molm et al. 2000). Therefore, farmers may be better off putting more effort into engaging with the community to help build interpersonal trust that helps substantiate that behaviors of good management are also behaviors that warrant trust.

By being civically engaged, farmers are contributing to stocks and flows of social capital, or, “[T]he ability of actors to secure benefits by virtue of membership in social networks or other social structures” (Portes 1998:6). Freudenburg’s (1986) concept of “density of acquaintanceship” helps to clarify how social capital may be accumulated. It posits that knowing others within one’s community allows for better community functioning.

Engaging in community can result in an increase in density of acquaintanceship, meaning, “[T]he proportion of [a community’s] residents who are acquainted with one another” (Freudenburg 1986:27). When people are acquainted with one another, it helps facilitate an understanding of “expected consequences,” where neighbors and community members make informal agreements for reaching certain goals (Freudenburg 1986). These agreements are much less likely to materialize if people are not acquainted with one another, because knowing someone else makes it easier for one to trust that the other’s behavior will take into account their concerns and values. Not knowing someone else, on the other hand, may cause skepticism about certain behaviors, and thus does not reinforce that behavior. Because farmers are both individual institutional actors who belong to networks within the structure of agriculture, as well as citizens of the communities they reside in, then it becomes necessary to participate in both networks if reciprocity is to be achieved.

Improving community-level relationships between farmers and neighbors is necessary and may lead to increased trust and improved handling of public concerns about risks associated with large-scale pork production. However, there is still the issue of recreancy among institutions and organizations. These social exchanges between farmers and neighbors are not meant to serve as a substitution for necessary risk communication that institutions/organizations are obligated to provide constituents with. In fact, building better relationships through civic engagement may put farmers and their neighbors in a better position to actually approach formal institutions/organizations with a united front, to demand a relationship that meets the need of all involved. In the next chapter, recommendations will be made to address this and other shortcomings and obstacles that still prevent farmers and their neighbors from achieving reciprocal/mutually beneficial relationships.

CHAPTER 8. CONCLUSIONS AND RECOMMENDATIONS

In recent years, the number of large-scale production facilities has increased dramatically. The participants in this study feel that they are susceptible to uncontrollable forces in agriculture that impact their ability to maintain a livelihood. By increasing production operations, farmers hope to reduce financial risks associated with these forces. However, while these motivations are economic, an important distinction was made in Chapter 4 between growing livestock operations in order to maintain a livelihood, and for the purpose of unnecessarily increasing profits. The farmers were not concerned about being able to accumulate excess amounts of money. Instead, they expressed concerns about surviving, providing for their families, and being able to make ends meet. For farmers who do not have 401Ks or other types of benefits that others are privy to through their employers, growing operations may serve as a sort of financial safety net, but not a money pit (granted, there are exceptions to this claim).

Unfortunately, growing their operations has resulted in another source of vulnerability. Not only did the farmers feel susceptible to ups and downs of the agricultural system itself, but they also felt susceptible to the actions of concerned individuals within their communities that could be detrimental to their ability to make a living. Nuisance lawsuits are a particular concern for farmers. They feel that this type of action has the potential to alter their lives in a way they would not be able to recover from. As such, farmers have tried to use good management as a means to address public concerns about their operations, and to demonstrate that they are trustworthy. Their decisions to use this mechanism are influenced by more powerful organizations and institutions whose

responsibility it is to help manage public perceptions of risk. These organizations tend to communicate to the public about risk in very technical ways that gloss over values that may underlie concerns. As individual institutional actors within the agricultural system, farmers tend to reflect organizational tendencies to attribute public perceptions of risk to ignorance or a lack of technical knowledge about pork production. They feel that, if they knew more about what it is that pork producers do, the public would no longer have these concerns. Therefore, they employ good management as a way to confirm that the science and technology that backs pork production is legitimate, that they can control their operations, and that concerns are unfounded.

While farmers may be considered institutional actors, they are members of the public, too. This creates a dynamic where farmers are not only part of institutions and organizations, but they also distinguish themselves from, and have relationships with, them. Farmers, too, are impacted by decisions of powerful institutions and organizations. Regrettably, the pork producers interviewed feel that organizations and institutions that they look to for support serve as weak intermediaries between industry and the public when it comes to public concerns associated with large-scale pork production. The farmers interviewed believe that organizations and institutions are not acting rigorously enough on their behalf, or are recreant. As a result, they feel that they have themselves become the target of public concerns, because they are more accessible to their neighbors/community members. However, they feel limited in terms of implementing alternative methods of production that may allow them to avoid being the subject of controversy.

When public concerns are not addressed, and when farmers feel that they have become targets of those concerns, it causes an erosion of trust between all of these groups,

resulting in more volatile relationships. As such, farmers are left to come up with ways of addressing concerns of the non-producing public on their own. While good management may avoid accidents in the majority of instances, this approach does not address actual concerns of the public—concerns that are based on values more than the probability of whether or not something will go wrong. For many, this has meant relying on good management practices. Their policy of “best practice” is an insufficient mechanism to foster mutually beneficial relationships with their neighbors, and pork producers’ feelings of vulnerability within their communities persist.

The interviewees in this study understand that good management is not enough. Even though they continue to express a desire for organizations and institutions to provide more public education on pork production that they believe will ease the tension they feel, they have also come to depend on other ways of building trust with neighbors and community members. One mechanism that the participants rely on is civic engagement, and being involved in their community in ways that demonstrate shared values between themselves and non-producing neighbors. Social exchanges that give farmers the opportunity to interact with their neighbors help foster interpersonal trust, which may help compensate for the loss of trust that they experience as institutional actors within the agricultural system, thus creating and reinforcing mutually dependent and reciprocal relationships.

While the social fabric of rural communities characterized by large-scale pork production may remain intact, it is undeniable that it is stretched thin in some places. It goes without saying that more needs to be done to patch the thin spots if community members must continue to live side-by-side. But what needs to be done, and who is responsible for doing it?

Recommendations

Being a good neighbor is a two-way street. The responsibility for fostering mutually beneficial relationships lies with many—not just one person or group. Furthermore, when it comes to controversial technologies like large-scale pork production that can affect neighboring relationships, risk management must also be a process that is engaged in by all. Participation in the process is not exclusive to professionals or institutional actors who engage in the system on a daily basis, nor to the members of the public who may be affected by it. While it is institutional actors' responsibility to respond to public concerns and make sure that they are acting in a way that demonstrates fiduciary responsibility, this does not mean that their values and well-being should be left out of consideration in the process. It does mean that risk management of large-scale pork production should be a process that takes into account diverse interests and values. The following recommendations may or may not serve as mechanisms to start redefining neighboring relationships in ways that speak to diverse interests and values.

1. Direct concerns about large-scale livestock production to the appropriate people/entities. Directing concerns at individual farmers does nothing to address faulty systems that are in place, but may contribute to the deterioration of relationships within local communities. As individual institutional actors of the agricultural system, livestock producers are some of the most accessible members of the agricultural system. Thus, it is much easier to address one's concerns to the pork producer two miles down the road than it is to approach regulatory agencies, political entities, and other powerful and elusive

organizations and institutions that put up enough red tape to make the effort seem not worth the energy. To put it differently, the system itself is not tangible, but farmers are. While taking action (legal or otherwise) against individual farmers may result in isolated instances of forcing singular large-scale operations to cease production, it does little (if anything) to change the agricultural system that helps to sustain the viability of this type of production. However, acting against individual farmers may increase friction, not just between farmers and other(s) acting toward him or her, but possibly between numerous members of the community who align with a particular side. Social exchanges, such as these, that erode trust will not result in mutually beneficial relationships, and may make such relationships more difficult to foster in the future.

If concerns are such that it makes the most sense to direct them at individual farmers, it should be done in a non-threatening, productive way. Going back again to what one of the farmers said, “[P]ork producers that I know and work with are very willing and want to do the right thing, and when approached in a constructive way, I think are very good at responding to what the concerns and needs are” (Farmer D, personal communication, n.d.). Communicating and interacting in constructive ways applies to both community members and farmers. When one’s concerns and viewpoints are characterized as something other than that which the beholder intends, there is a chance that hostility will emerge (see Freudenburg 2001). Instead, when people work together to address situations that are not ideal for anyone, and where circumstances may be improved for all, then it may be “possible (*because necessary*) to come together in search for solutions to mutually threatening conditions” (Short 1984:718). However, various interests must be represented in these interactions, and no values should be excluded from the interaction process.

2. Farmers should engage in risk communication. It was clear from farmers' interviews that they perceive a need for better communication about the process of pork to allay fears about the risks associated with it. However, it was also clear that the pork producers interviewed believe that this responsibility lies with people and/or groups other than themselves. In many ways, this expectation is legitimate. For one thing, a farmer's primary responsibility is farming. And according to one farmer, there is always something to do and never enough time to do it (Farmer H, personal communication, n.d.). They may feel that they do not have time to invest in endeavors outside of their operations, and time that is spent otherwise is a waste.

Farmers also believe that risk communication is the responsibility of organizations and institutions that exist for the very purpose (at least to some extent) of either acting in their interest and/or for ensuring that public health, safety and well-being are achieved in fair and responsible ways. For example, according to the Iowa Pork Producers Association (2011) website, its mission is, "[T]o provide a unified voice to promote and educate for a sustainable, socially responsible, profitable and globally competitive pork industry" (Mission Statement section, para. 1). Or, when it comes to environmental quality and quality of life, the Iowa Department of Natural Resources states that their mission is, "To conserve and enhance our natural resources in cooperation with individuals and organizations to improve the quality of life for Iowans and ensure a legacy for future generations" (About the DNR section, para. 2). If organizations such as these exist for providing education and maintaining public well-being, then why would farmers take time out of their own responsibilities to do so?

The problem, as discussed in previous chapters, is that there seems to be a disconnect in the process of risk management and communication between such powerful organizations and institutions and the public. This is due to oversight of values and blindspots that play into public concerns (Freudenburg 2001). As such, farmers' expectation of the provision of risk management is often simply not met. However, this becomes even more problematic when farmers maintain this expectation despite shortcomings, and still do not take on some of the responsibility of risk communication themselves.

This means that, as difficult as it may be, farmers need to invest time in risk communication themselves. As one farmer put it, “[W]e need to continuously educate the producers and the general population that they have to work together and communicate back and forth” (Farmer C, personal communication, n.d.). It also means talking to their neighbors about their [the neighbor's] concerns about pork production, not simply “educating” them on what it is pork producers do and why they think it is a legitimate means of production. And it does mean that perhaps farmers need to reconsider some of the methods they use, and look for methods that will be more acceptable to their neighbors and community members, while still allowing them to do their job and maintain a livelihood. It does not mean bending to every whim of every person, but risk communication by the farmer is a necessary initial step toward facilitating productive discourse about issues related to large-scale pork production. It is also an opportunity for farmers to communicate about themselves to others, which may also help build trust.

To insist that farmers engage in risk communication is not to suggest that risk management is the sole responsibility of farmers. The question of who is responsible for risk management does not have a clear-cut answer; there is not one single group that bears this

responsibility. Rather, if it is to be a democratic process, it is the responsibility of farmers, the concerned public, and organizations and institutions alike to engage in dialogue with one another, rather than talking at each other. The public has a right to be concerned, but if they want to have a say in the policies that impact the way agriculture is practiced, then they also have a responsibility to be informed on multiple sides of the issue. The same is true for farmers. This complicates matters because it inherently means that risk management must involve interaction between diverse people with diverse interests and values. Nonetheless, these diverse people and groups must engage in a dialogue if mutually beneficial solutions are to be rendered.

3. Neighbors and community members should try to be understanding of the factors that affect farmers' production decisions. The farmers expressed frustration because they believed that their neighbors and community members thought that pork producers chose to go large-scale for the sake of getting bigger and making more money. Farmers felt that their neighbors did not understand other factors that influenced their decisions to grow their operations, and that if they did, they would understand that their decisions were made largely out of necessity, and not greed. It is not that understanding these factors would cause their neighbors to not have concerns about large-scale production. However, it is possible that it would allow farmers and neighbors to approach the issue on a level of more mutual understanding. If farmers believe that their neighbors care about their livelihood, then farmers may be more willing to work together, making the process of searching for solutions more productive.

4. Farmers should organize to redefine and reinforce their relationships with organizations and institutions, as well as with the concerned public. Some of the farmers interviewed had come to understand that an overall lack of organization of farmers has become detrimental to their ability to justify their management decisions to the public (Farmer C, personal communication, n.d.; Farmer F, personal communication, n.d.). Rather, they have depended on doing what institutional actors within the dominant system of agriculture have told them to do. Now that they have done this, the support from those institutional actors is sometimes lacking, leaving them on their own to manage public perceptions of risk about pork production.

As discussed, farmers face problems that are unique to their role as both institutional actors and community members; when organizations and institutions do not provide risk communication that is expected of them by farmers and the non-farming public alike, farmers find themselves having to manage public perceptions of risk on their own. As such, farmers might consider organizing locally not only to support each other, but also to put themselves in a more influential position with which to redefine their relationships with powerful organizations and institutions. As an organized group, farmers may find it possible to demand more advocacy and risk communication that actually addresses public concerns, as well as their own. While their “dual role” as both institutional actors and community members can create social scenarios that are difficult to navigate, it also means that farmers could possibly bear some leverage if they enjoy access to some of these organizations and institutions. And as community members who interact with their neighbors and understand what local needs and concerns actually are, they can bring these to the table when they approach these organizations and institutions.

Rather than accepting the services that are provided to farmers through organizations and institutions responsible for risk management as given, farmers as an organized entity may find it possible to demand better advocacy and an obligation to risk communication that actually addresses public concerns. They can make their expectations as a group clear, so that the organizations can adapt to these expectations, if necessary. By engaging in these types of exchanges with organizations and institutions, it may help convey to the non-producing public that they are acting on their behalf, while building trust and confidence that they are doing the right thing. If these expectations are made clear, then it may be possible for farmers, organizations and institutions to engage with the non-farming public in a more productive and responsive way, so that partnerships between all are formed. These partnerships should be sustained, reciprocal relationships between institutions/organizations and all stakeholders, not just those who represent economic or other exclusive interests of the organization. Given the power dynamic of the relationship between organizations/institutions and farmers/community members, these exchanges may be difficult; however, if farmers organize to represent a united entity, it may help to alter that dynamic.

5. Get (and stay) involved in community! Trust is one of the necessary components of healthy social systems (Barber 1983). Interactions with the non-producing public that are based on simply giving them the facts in order to “prove” that they can control risky technologies and systems rarely produce the trust needed to sustain social systems (Clarke & Short 1993), because these interactions look past value concerns that underlie risk (Freudenburg 2001). While being involved in community will not eliminate concerns about

the risks of large-scale pork production, it may indeed serve to build interpersonal trust between farmers and their neighbors. It may build sentiment between people who hold diverse points of view, and lead to mutually beneficial relationships that will allow them to approach issues of importance together, rather than working against each other.

While working to improve relationships with their neighbors might help keep the social fabric intact by increasing interpersonal trust, it should be made clear that, by itself, civic engagement and interacting with neighbors and community members will likely not solve systemic issues that need to be addressed regarding the current structure of agriculture. Building trust through social interaction is not a solution to systemic problems in agriculture, and continuing to rely on this mechanism as such will only perpetuate the vulnerability that farmers and their neighbors experience. Farmers and their neighbors are still subject to the politics of powerful institutions and organizations that are supposed to act on their behalf, but more often than not, simply make decisions that are in the best interest of a few.

Limitations of the study

One of the limitations of this study is that only one perspective is represented. While the purpose of this study is to present social issues from pork producers' point-of-view, it is not to say that other perspectives would not provide useful insight into the questions asked. Particularly with regard to questions of risk management, it would be helpful to interview members of formal organizations and institutions who deal with risk management, given that farmers point to them as responsible parties and, in some instances, consider them to be recreant. Part of the problem with risk management is that responsibility is often shifted from one person/entity to the next, to the point where it ends up that no person/entity is

willing to accept responsibility. The farmers interviewed are not wrong that organizations and institutions should be held accountable for managing risks associated with large-scale pork production. However, if the question of “whose responsibility is it?” were asked to these organizations, it is likely that they, too, would point to others—and they would not be wrong, either. It would be beneficial for future studies to answer such questions from multiple perspectives to help reveal weaknesses in the risk management process, as well as identify ways in which various people and groups can work together to address concerns effectively.

Another limitation of this study is not knowing the size of the operations run by the participants. Because this study looks at hog farmers’ attitudes and beliefs about how their relationships with neighbors are affected by risk management provided by organizations and institutions, the size of operations is not absolutely crucial, because it is not analyzed as a variable itself. However, other studies (Jackson & Gillespie, Jr., 2005) have shown scale to be a significant factor in terms of the probability that conflict will occur. Without knowing scale in this study, we are unable to know if farmers’ experiences are related to the size of production, and whether or not this would change if scale increased or decreased. Also, knowing information on size of operation could potentially reveal further understanding about any differences in the dynamics between pork producers relationships with neighbors in their respective communities.

Future directions

There is much left to study with regard to the impact of organizations and institutions responsible for risk management on farmers’ relationships with their neighbors. Future

studies should include multiple perspectives for the purpose of augmenting findings about farmers' attitudes and beliefs about issues surrounding large-scale pork production. In particular, presenting the perspective of decision-makers within powerful institutions and organizations will be particularly enlightening, given the claims made about their role in risk management in this study. It would also be useful for future studies to analyze whether or not management structure of hog production operations has any affect on their ability to build trust and foster reciprocal relationships, since there was no distinction between farmers who contract and farmers who independently own their livestock in this study.

Finally, it is necessary for future research to distinguish between the types of organizations and institutions to better understand what they are responsible for in relation to managing risks associated with large-scale hog production and providing advocacy to hog farmers. Because they are concerned with promoting the industry, an organization like the Iowa Pork Producers Association may be understood by some to have more of an interest in providing risk management support, as compared to a regulatory institution like the DNR. While the farmers in this study placed responsibility on regulatory institutions, the institution itself may or may understand its role differently. The issue of responsibility must be sorted out so that expectations between various people and groups are clear. Ultimately, future research would benefit from attempting to include and analyze all of the diverse viewpoints involved in the issue of large-scale pork production, bringing them all together in one cogent study.

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APPENDIX A: INTERVIEW GUIDE

1. Which community do you consider your home community?
2. What do you like best about living in COMMUNITY?
3. What do you like least about living in COMMUNITY?
4. What can you tell me about your relationship as a producer with COMMUNITY?
5. How do your community members view you as a business person?
 - a. Has it always been this way?
6. What, if anything, have you done as a producer to develop your relationship with the community?
7. What could community leaders do to support your operation (Specific actions producer would like to see community take.)
8. Is there anything else you would like to add? (Sapp et al. 2006).

APPENDIX B: DEMOGRAPHIC/ENTERPRISE INFORMATION

Farmer A: Thirty-six years old at time of interview. He had lived in Iowa for about a year and a half at the time of the interview. He resides in Ames, although he believes himself to have more of a presence in Webster City. He works for a company called Prestige, and manages multiple sites that hold anywhere from 4,200 to 26,000 head of hog on a single site. He has a son (age 10) and a daughter (age 5) who live at home.

Farmer B: Thirty-eight years old at time of interview. He considers Ellsworth his home community and has lived there for thirty years. He manages three sites that house 3,600, 4,500 and 5,000 head of hog. He has three children, ages ten, seven and three, who like to “help out” on the farm.

Farmer C: Fifty-six years old at time of interview. Audubon is his home community. He has no school-age children living at home, and one son works with him in his operation.

Farmer D: Thirty years old at time of interview. Audubon is his home community. He operates one facility with 3,300 head of hog. He has two children, ages four and three.

Farmer E: Forty-six years old at time of interview. Rock Rapids is his home community, and he has lived there his whole life. He has three children, one in college and two who live at home. None of his children work with him on the farm.

Farmer F: Thirty-nine years old at time of interview. He considers both George and Boyden his home communities, and has lived in George for twenty-two years. He has

five children, one in college and four who live at home. Two of his children help him on the farm.

Farmer G: Fifty-one years old at time of interview. Ashton is his home community, and he has lived there his whole life.

Farmer H: Forty-five years old at time of interview. Radcliffe and Hubbard are his home communities, and he has lived near them his whole life. He has two children in college, and one daughter that lives at home. None of his children help out on the farm.

Farmer I: Forty-two years old at time of interview. George is his home community, and he has lived there his entire life. He has four children who live at home; none of them work with him on the farm.

Farmer J: Fifty years old at time of interview. George is his home community, and he has lived there since 1976. He has one daughter who does not work on the farm with him.