



Environmental regulations in the hog farming sector: A comparison of Catalonia, Spain and Manitoba, Canada

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ARTICLE INFO

Article history:

Received 19 April 2011

Received in revised form 25 October 2012

Accepted 30 October 2012

Keywords:

Environmental regulations

Hog farms

Manure management

Animal Feeding Operations

ABSTRACT

This article examines the governance structures for managing the location and operation of Intensive Livestock Farming Operations (ILFOs). The article focuses on the hog sector and compares two very different jurisdictions: Manitoba, Canada and Catalonia, Spain. Both are regions that have witnessed recent increases in hog production, including increasing spatial concentration of ILFOs and an increase in size of those ILFOs. Policy has both fostered and sought to manage the increased production. The paper draws on the literature on regulatory regimes, environmental regulation, and political economy to frame the comparative case studies of the impacts of environmental regulations on hog production. Following a brief background description of restructuring, the changing legislative frameworks for Manitoba and Catalonia are described. The paper concludes that environmental policy in Manitoba and Catalonia has been more successful in managing overall production (e.g., manure management, and location of operations) than in limiting total production.

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Introduction

Agricultural restructuring, including specialization, industrialization, capital substitution, and increasing scales of operations, pervades agriculture around the world. Some regions face depopulation as farmers sell their land, squeezed out by declining margins. The Great Plains of the United States and the western Prairie regions of Canada are two notable examples (Troughton, 2005). Intensive, specialized, industrial agricultural operations often conflict with urban society, including former urban residents who have moved into the adjacent countryside seeking a ‘rural life’ or tourism activities. Non-farm residents have voiced concerns about the noise, smell, and dust generated from large machinery and animal production in what are now commonly referred to as ‘nuisance complaints’ (Mann and Kogl, 2003). Issues such as these have resulted in the enactment of “Right-to-Farm” legislation in North America (Bergner and Centner, 1989; McNulty, 2001; Centner, 2002). One aspect of agricultural restructuring has brought conflict to the countryside regardless of whether it is urban adjacent or in a depopulating rural region: the restructuring in animal-based agricultural systems or what is referred to in the literature as Confined Animal Feeding Operations (CAFOs) (Curran, 2002), Concentrated

Animal Feeding Operations (also CAFOs) (Schwabb, 1998; Centner, 2004; Donham et al., 2007; Ilea, 2009), and Intensive Livestock Operations (ILOs) (Epp and Whitson, 2001; MacLachlin, 2005). This related terminology offers insight into the issues: intensification, concentration and confinement. Intensive refers to large numbers of animals raised in a small area. Concentrated refers to intensity but also certain geographic regions where intensive animal operations exist. Confined simply refers to those operations that do not allow free grazing. Such operations include dairy, beef cattle, hogs, and poultry. As evidenced by Bowler (1991, 1994), livestock operations, such as hogs and poultry, are conducive to highly specialized, large scale systems of production that can be regulated to ensure quality and disease control through standardized protocols. These systems characterize livestock production in much of western agriculture.

This paper is concerned with the hog sector, although the literature on dairy and beef cattle operations is referred to for comparative context. The term “Intensive Livestock Farming Operations” (ILFOs) is adopted as it recognizes intensiveness through concentration and confinement, livestock which recognizes our interest in hogs, and farming operations as the animal raising systems are part of a larger agricultural system and most specifically, the land in which manure is stored in and spread upon. ILFOs are certainly not without controversy. As an industrial mode of production, conflicts are often raised within agricultural sectors that engage in them, particularly as smaller-scale producers can become forced out. A reduction in farm numbers in turn raises concerns

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about depopulation in communities and rural municipalities. The debate over ILFOs can also pit farmers and economic development advocates against those who have environmental concerns (Lawley and Furtan, 2008). Responding to environmental concern has taken several forms. In a recent essay, Ilea (2009), for example, compares issues in North America and Europe with respect to ILFOs, including: increased emissions, increased global demand for meat, changing regulatory regimes to address environmental concerns, health and nuisance issues, land degradation, water consumption, and animal ethics. In providing a general overview of the ranges of issues with ILFOs, Ilea (2009) illustrates the importance of mitigating impacts on the natural environment and on the quality of life of those living in rural areas adjacent to ILFOs. Regardless, increasing demands for products such as hog meat has been a trend for decades (Richard and Bruce, 1989) and continues to be. Ilea (2009), for example, estimates that global livestock production is expected to double by 2050.

The purpose of this paper is to provide a comparative analysis of environmental regulations that govern ILFOs in Spain and Canada. Catalonia and Manitoba were chosen for the comparison because both jurisdictions have witnessed substantial hog production increases over the past decade and both have faced environmental problems coming from hog farms. Further, there are similarities and differences between Catalonia and Manitoba that could help inform other jurisdictions that are coping with expanding production in livestock sectors. Specific regulatory changes can be identified, including: land use planning and zoning (i.e., ILFO location and size), manure management regulations, odor mitigation, and water protection. Each of these issues is reviewed briefly through the literature. The debate over ILFOs in Manitoba, for example, has illustrated an urban–rural divide (Ramsey, 2004). Given the breadth of regulations, and the multiple levels of government that regulate, the literature is framed within regulation theory and networks (e.g., Eberlein and Grande, 2005; Busch et al., 2005; Kim, 2011). This literature provides a foundation for understanding the place and impact of transnational regulatory regimes on the sub-national scale. The cases of Catalonia, Spain and Manitoba, Canada are then offered as examples of mitigation policy responses. Both are state level jurisdictions characterized by primate capital cities (Barcelona and Winnipeg) with substantial rural regions. Both countryside regions have recently sought hog production as a strategy to diversify agricultural production (Soldevila et al., 2010). The specific foci in the comparative cases are on zoning to limit concentration and regulations affecting ILFO operations, including manure management to address water and odor concerns. The paper concludes that while on one hand state level governments encouraged farmers to expand into the hog sector, at the same time farmers were met with regulatory regimes that affected how they managed their operations (e.g., manure management regimes) and where they could locate such operations (e.g., area based moratoria). In the end, both governments appear to have succeeded in environmental management and fostering overall growth in hog production.

Scholarly context

As an economic sector, agriculture has perhaps seen the most substantial litany of regulatory instruments applied to it. The comparative description and analysis described in this paper is framed within the regulation literature, generally, and the literature on regulatory mechanisms employed within the agricultural sector, specifically.

Regulatory regime literature

Beyond trade agreements, including the North American Free Trade Agreement (NAFTA) which affects Manitoba, EU trade rules

which affects Catalonia, and broader trade agreements that affect both jurisdictions (e.g., General Agreement on Tariffs and Trade (GATT)), the past twenty years has also seen a proliferation of environmental legislation (Kim, 2011; Busch et al., 2005). Of particular note is that which is mandated by the European Union (EU) (Beckmann et al., 2009; Falkner, 2007; Eberlein and Grande, 2005). Further, the EU has become a major regulatory regime player in areas of not only the environment (Gibbs and Jonas, 2000; Lawlor et al., 2010) but other areas that impact rural economies such as agriculture (Beckmann et al. (2009), biotechnology (Falkner, 2007) and energy regulations (Pezzini et al., 2010). Regime theory is not a new notion but rather can be framed in the urban pluralism research of the early 1960s (Stone, 1993; Jordan et al., 2005). Some have argued that a new international environmental regime has developed in part because of voluntary diffusion. Busch et al. (2005) describe four cases of diffusion whereby governments have adopted environmental policy regulations because of implementation elsewhere, including: strategic environmental planning, eco-labeling, energy taxes, and free access to environmental information. The notion of ‘regulatory regime’ has also been applied to the EU’s role as a ‘regulatory state’ (Eberlein and Grande, 2005, p. 89).

From the expansion of the EU, and the increasing international dominance that has resulted from this expansion, it should be no surprise that regulatory regime theory has been returned to. Having individual nation states follow the same mandated rules systems in most facets of economy and society was surely not going to be an easy ride. Apart from the research on agricultural subsidies, environmental regulations in the agricultural sector have perhaps seen the most interest (Winchell et al., 2010). Of particular note is the work on agri-environmental scheme evaluation (e.g., Beckmann et al., 2009; Giovanopoulou et al., 2011; Davies-Jones, 2011; Primdah et al., 2010; Barreiro-Hurlé et al., 2010). Agri-environmental schemes are voluntary initiatives designed to encourage more environmentally friendly farming (Barreiro-Hurlé et al., 2010), yet are implemented within the larger international regulatory regimes implemented by the EU.

The comparative case studies of Manitoba and Catalonia are framed within the regulatory regime literature as the hog sectors in both jurisdictions are affected by varies aspects of regulatory regimes. First, trade rules affect export markets. Manitoba, for example has been directly affected by Country of Origin Labeling (COOL) legislation in the United States (Awada and Yiannaka, 2012). Similar legislation affects agricultural production in the EU (Clarke and Stocks, 2011). As described elsewhere (Soldevila et al., 2010) for decades Catalonia faced a trade embargo of its pork produce due to a swine flue virus. Further, as described in the preceding paragraphs, other aspects of economic and environmental policy regimes affect hog sectors either directly or indirectly. What follows is a more detailed analysis of the literature related to environmental legislation that has direct implications for hog production in regions such as Catalonia and Manitoba.

Environmental legislation in the livestock sectors

Following from the regulation theory literature is research that has focused specifically on environmental regulations in the livestock sectors. Of particular note is research dealing with operational regulation, including manure management. Research based on regulations in a number of jurisdictions can be identified, including for example, Germany (Deunert et al., 2007), Denmark (Bonde, 1994), the Netherlands (Schröder and Neeteson, 2008), Mexico (Espejo, 2006), Taiwan (Yang et al., 2008), the United States (Goldstein and Berman, 1995; Durrenberger and Thu, 1996), Catalonia (Soldevila, 2009) and Canada (Troughton, 2005). As noted by Wossink and Wefering (2003), areas of livestock concentration have developed

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