

# COMMUNICATIONS AND MEDIATION AROUND ENVIRONMENTAL ISSUES

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## ABSTRACT

Economics is the study of the optimal allocation of resources to maximise the welfare of people. The diverse desires of people include livestock products and environmental quality. Conflict over the relationship between livestock production and environmental quality requires communication and mediation to develop socially desirable policy. This paper includes an economics perspective on policy development. Observations from the development of the pig farming sector in North Carolina are offered to illustrate the need for communications and the role of mediation.

## INTRODUCTION

The author is not an expert in mediation and his experience in communication is that of an agricultural extension specialist rather than a public relations expert. His perspective on this topic is based on seventeen years as an extension and research economist in North Carolina working with and studying the pig farming sector. The author is currently immersed in economic evaluation of technology and policy regarding pig farms and environmental protection.

Currently evolving policy regarding the relationship between pig farming and environmental quality is the primary determinant of the economic viability of the pork sector in North Carolina. Agribusiness accounts for roughly 24 percent of North Carolina's economy and pigs account for about 20 percent of cash receipts from farming in North Carolina. The future of the pork sector in North Carolina has strong implications for the income, employment, and property tax base in several counties in eastern North Carolina. Clear communications, mediation, and rational policy development are needed.

A few themes emerge in this paper. First, the notion of 'socially optimal' policy is presented and used as a reference point for communications and strategy. Policy seems to be the guideline for satisfying to the maximum extent possible, the many desires and needs of a diverse population. Another theme is that policy made under conflict and adversarial behaviour may be less rational and balanced than policy developed under more consensus-building conditions. Adversarial behaviour may include attempts to sway public opinion with strong allegations and propaganda. Adversarial behaviour may also include promotion of policy options that go far beyond the stated policy goals and may be punitive to the adversary, create long term power for the promoter, and create a source of revenue for the promoter and benefits for political allies. Pleas for 'science based' policy may arise in response to

rhetorical and political gains by an adversary. Communications and mediation can play roles in shifting the policy-making process toward consensus building and toward rationality.

## **AN ECONOMIST'S VIEW OF OPTIMAL POLICY ... AND CONFLICT<sup>18</sup>**

Policy regarding environmental management and livestock production can be evaluated in the framework of welfare economics. This section presents a very brief overview of the basic economics of social choice and a few basic conditions for social welfare maximising decisions.

Society's preferences can be represented as a social welfare function comprising the combination of individuals' preferences. A simple social welfare *isoquant* representing various combinations of environmental quality and economic activity that are equally desirable to society is presented in Figure 1. The curvature of the isoquant depicts the idea that the marginal value of an additional unit of a good or service declines as the quantity consumed of that good increases. A second welfare isoquant is also presented in Figure 1. All combinations of goods and services on the higher welfare isoquant are preferred by society to those on the lower isoquant. Individuals and society seek to maximise their level of welfare.

Individuals' and society's maximum welfare is constrained by the endowment of resources available and by the technology available to convert those resources to desirable goods and services. The maximal combinations of economic activity and environmental quality that can be produced are represented in Figure 1 as a technical possibilities curve. The curvature of the technical possibilities curve depicts the idea that the marginal cost of producing another unit of a good increases as the total quantity produced of that good increases. The maximum obtainable level of social welfare lies somewhere on the technical possibilities curve. An upward and outward shift of the technical possibilities curve illustrates the effects of new, improved technology.

A combination of goods and services is technically efficient if it lies on the technical possibilities curve. Points A, B, and C in Figure 1 are technically efficient. A combination of goods and services is technically inefficient if it lies below the technical possibilities curve (for example, point D in Figure 1). Technical inefficiency means that society could have more of both goods and hence be at a higher level of social welfare.

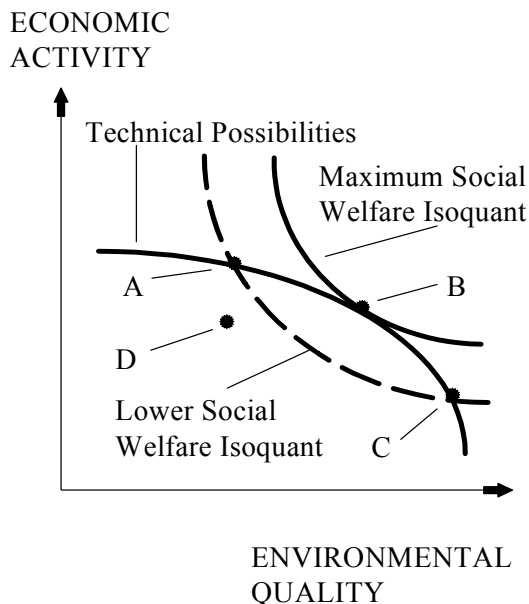
A combination of goods and services is economically efficient if it lies on the technical possibilities curve and the maximum attainable social welfare isoquant. Point B in Figure 1 is economically efficient. A combination of goods and services is economically inefficient if it lies on the technical possibilities curve but below the maximum attainable social welfare isoquant or if it is technically inefficient (for example, points A, C, and D in Figure 1). Economic inefficiency means that society could have a higher level of social welfare by producing a different combination of goods and services.

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<sup>18</sup> Earlier versions of this section of the paper were presented in Zering, 1999a, and 1999b.

Policy with respect to environmental management is based on social choices such as the one depicted in Figure 1. Most individuals and society as a whole would prefer a combination of environmental quality and economic activity that is technically efficient (point A, B, or C rather than point D in Figure 1).

**Figure 1. Socially Optimal Production**



Source: Marra and Zering

individuals or groups may have different perceptions of the technical possibilities or the current point of production (example, D versus B). In other words, they may not agree on the level of pollution or environmental quality currently being obtained or the change in economic activity that would be required to improve environmental quality.

Conflict can also arise from change. Change in technology, change in market structure, change in land use and residential development, and change in policy can all create conflict. Conflict arises from change when individuals perceive they have been made worse off or failed to benefit sufficiently while others have benefited greatly. A change is defined as welfare increasing if the value of benefits exceeds the costs or losses. Change that makes one or more people better off and makes no person worse off is called *Pareto improving*. Conceptually, welfare increasing change can be Pareto improving change if the beneficiaries of change compensate the losers in change. Two basic principles of environmental public policy design arise from this abstract model of social welfare maximisation. First, the value of environmental benefits derived from any policy or regulation should exceed the net direct and indirect cost it imposes. Otherwise, society is made worse off. A second principle is that any environmental benefit should be achieved at the lowest net direct and indirect cost possible. Otherwise, society could have enjoyed the same benefits at lower cost and have been better off.

Education, design and performance standards, best management practices, regulation and enforcement, cost share and tax incentives are among policy instruments employed to encourage technically efficient production. Point B in Figure 1 is the socially optimal combination of environmental quality and economic activity. Point A in Figure 1 represents more economic activity and less environmental quality than point B. Point A may be preferred to point B by some individuals or communities with a stronger preference for economic activity. Similarly, point C might be preferred by individuals or communities with a stronger preference for environmental quality. Points A and C both result in a lower level of social welfare than point B based on society's preferences.

Conflict arises in several ways. First, individuals or groups may have different preferences from each other and from society (for example, points A and C). Second,

## **MEDIATION IN CONFLICT RESOLUTION**

One definition of mediation is “a dispute resolution process through which an impartial party (mediator) assists the parties in developing a voluntary settlement of their differences” (Public Issues Education (PIE) web page). A prominent example of a conflict resolution program is the Public Issues Education program of the Cooperative Extension System in the U.S.A. More information on this program is available at the following URL:  
<http://www.ces.ncsu.edu/depts/agecon/PIE/resdir/introduc.htm>

The process employed by the PIE program includes the following steps (Danielson and Perrin, 2000):

- a. convene a group with representatives of citizens and private and public groups,
- b. establish goals and procedures understood and agreed upon by all participants,
- c. gather facts and information and dispel false perceptions to the extent possible,
- d. establish and communicate each party's interest (rather than their position),
- e. attempt to make decisions that all members of the group can support.

The process outlined above can take the form of mediation or an education program or a policy development program. In any case, it gives participants the opportunity to learn each others views, to gather facts, and to discuss options. The PIE program provides trained individuals to facilitate the process.

Dr. Steve Smutko in the PIE program in the department of Agricultural and Resource Economics at North Carolina State University reports mediation efforts in Craven and Beaufort counties in North Carolina regarding county policy development with respect to pig farms (Danielson and Perrin, 2000). Those county governments had imposed moratoriums on new or expanded pig farms in 1997 after a period of rapid growth and increasingly heated conflict over a proposed new farm. An Intensive Livestock Operations Moratorium Study Committee was formed in each county and asked to submit a consensus set of recommendations to their county commissioners on how the county should regulate livestock farms. Each committee contained representatives of agriculture, environmental groups, the public at large, and public health agencies. Among lessons learned, Dr. Smutko lists: the need to reach agreement within the group on the types and sources of information to be acquired, the need to talk to each group member prior to meeting to learn how an agreement might be reached, the need to develop a written charter of how the group will operate, and the need to develop a process for getting the recommendations implemented once they are delivered. The outcomes of the process in two counties include: Craven county accepted the committee's recommendations, adopted some of them and added some of their own, Beaufort county accepted the recommendations but did not pass an ordinance, many experts were brought before the committees and members received information and formed their own opinions, consensus was reached on the recommendations but could not be reached on all issues.

Mediation can play a valuable role in collecting and sharing information, in exploring the views and interests of diverse groups, and in reaching consensus on some set of points and recommendations. Mediation may not be able to overcome strong differences between groups and may not achieve consensus on some issues. Governments may or may not act on the

recommendations of mediation groups depending on factors such as the similarity of the mediation group's views to those of the general public, the legality and implications of the recommendations, and the government officials' understanding of the issues and the recommendations.

## **OBSERVATIONS ON COMMUNICATIONS**

The author spoke to a few individuals who have been directly involved in the debate over pig farms in North Carolina and used their comments and his own observations to compile the following list.

Openness in communications and public relations is critical to maintaining the trust of the media and the general public. Early in the development of an issue, openness and a willingness to confront uncomfortable issues may avoid creation of an adversarial political conflict. In later stages of a conflict lack of openness creates suspicion and gives credibility to adversary's claims. Issues such as exposure to odour and the possibility of manure contamination of surface water or groundwater have been present in North Carolina since the number of large pig farms began rapidly increasing.

Fear of the unknown may be much worse and unbounded than knowledge of actual risks. Failure to communicate the risks clearly to the media and general public creates a void for fear to enter.

In periods of rapid change, existing technical standards and regulatory systems may be suddenly obsolete. It is a challenge for those directly involved in change to be actively engaged in expansion and to be initiating the dialogue to avoid conflict. As odour and water contamination fears became evident in North Carolina, some contract companies imposed voluntary minimum setback requirements for new farms. Nonetheless, a farmer that failed to meet their standard built a farm for another contractor and promptly became the defendant in a highly publicised nuisance suit. Similarly, the general statement that 'anaerobic lagoons do not leak' proved to be a point of mistrust for the pig farming sector. New standards requiring compacted clay liners for lagoons built in permeable soils were adopted in December, 1992 in North Carolina. However, one highly publicised claim of pig farm adversaries in 1995 was that 'half of the anaerobic lagoons were leaking at high rates into the groundwater.' This claim was based on a university study of a small sample of lagoons comparing seepage from unlined lagoons in sandy soil (built prior to 1993) to those with clay liners or built in soils with low permeability. This claim seemed to catch the pig farming sector in a false statement. After the governor ordered free well water testing of all wells within a half mile of a pig farm lagoon, and nearly 1,000 wells were tested, it was determined that 2 or possibly 3 older pig farms had contaminated neighbouring wells. One of those farms had an unlined lagoon in highly permeable soils and was determined to have contaminated several shallow wells within 250 feet of the lagoon. Another farm with an undersized overloaded sprayfield was determined to have contaminated a shallow well at the edge of the field. The sprayfield on a third farm was found to have contaminated a neighbouring well but that finding was contested. In general, the seepage from anaerobic lagoons (even the unlined lagoons in

permeable soils) seems to have no significant impact on well water in eastern North Carolina with a very few exceptions. Failure to communicate the possibility of contamination and the actual risk of a problem gave adversaries and a suspicious media group the opportunity to cast doubt on the pig farming sector.

On the local level, clear communication with neighbours about plans for new farms is critical. Dispelling fear of the unknown, giving neighbours the opportunity to voice concerns and ask questions are viewed as building trust and granting some control. In another highly publicised nuisance suit in North Carolina, a neighbour claimed to be very upset that the owners of the new farm had deceived her about their intentions. While complete openness may not overcome all objections, it eliminates an important source of mistrust and suspicion by the general public.

Once an issue becomes adversarial and public, and once the media become suspicious or adversarial, a few highly visible events can be used to create widespread public suspicion of the targeted group. In North Carolina in 1995, a Pulitzer Prize winning series of newspaper articles in a Raleigh newspaper was followed a few months later by the spill of the lagoon contents at Oceanview farm into the New River near Jacksonville. Pictures of the ruptured dyke of the former lagoon circulated around North America. The spill killed about 5,000 fish valued at about \$6,000. Nonetheless, it provided the highly visual ‘smoking gun’ that adversaries needed to illustrate their claims that lagoons are a threat to the environment. A few months later, millions of fish (primarily menhaden) died in the Neuse River estuary near New Bern. Pig farm adversaries said ‘we know it’s the pigs’ and the media gave the issue prominent coverage over the next several months. A national magazine, a national television news tabloid program, a northeastern U.S. newspaper chain, and eventually a senate agriculture committee minority paper came to refer to ‘pig farm lagoon spills and the associated massive fish kills in North Carolina’. After five years and millions of dollars of water quality research, there is still no indication that any pig farm lagoon spill had any effect on fish kills in the Neuse River.

Once an issue becomes public and adversarial, it is important to provide timely and factual responses to allegations. This process becomes very expensive if the media are suspicious of your group and are sympathetic to your adversary. After the events of 1995, a state ‘Blue Ribbon Panel’ report in 1996 and new legislation in each of those years, a group of pig farming companies and others formed Farmers for Fairness to launch a publicity campaign to counter their adversaries’ success in shaping public opinion. At considerable expense, they purchased television, radio, and newspaper advertising to point out that pig farms had very few spills that reached surface waters in the state and that permitted municipal discharges contributed tons of nutrients to the state’s rivers each year. This campaign seemed to succeed in raising public doubt about the claim that ‘it’s the pigs’. The suspicious media group, adversaries and some state agencies attacked the campaign as funded by corporate hog producers and therefore lacking credibility. New laws regulating pig farms continued to be adopted including a moratorium on new and expanded pig farms that remains in effect today. Impressions created in 1995 have not been completely dispelled. A ‘500 year flood’ following a series of hurricanes in 1999 produced new ‘visuals’ in North American media of

drowned pigs in North Carolina and calls for new regulatory action. Many of the general public and elements of the media in North Carolina still view pig farms with suspicion.

Professional public relations based on open communications, rapid knowledgeable accurate response to new stories, regular releases of accurate positive news, and an on-going relationship with the media, political leaders, adversaries, and other interest groups have proven very constructive for pig producers in North Carolina in recent years.

## **CONCLUSIONS**

The economics perspective on socially optimal policy development raises a few goals for communications and mediation. First, there must be clear understanding of the facts including the current level of environmental quality and economic activity and the effect on environmental quality and economic activity that might arise from a change. Communication and mediation are also useful in exposing people to the views and interests of others. In some cases, mediation can result in consensus on facts and on policy changes.

The economic approach also defined change as socially desirable when benefits are valued more highly than costs and Pareto improving when one or more are made better off and no one is made worse off. An implication of this definition is that to achieve socially acceptable change, maximise the number of people who view the change as beneficial, maximise the value of net benefit they perceive, and minimise the number of people who perceive the change as costly. Communications can play a role in making people aware of the benefits, in discovering the costs that people perceive and taking steps to minimise the costs or compensate those bearing costs.

The potential for mediation declines and the required investment in mediation and communication increases as issues become more polarised. Avoid polarisation by confronting issues, building policy, and building consensus and trust through communications. Adversarial policy making seems much riskier and less rational than policy making through mediation and consensus.

In some cases polarisation is inevitable for adversaries so the conflict becomes a battle for public perception and political support. Trends in society can create new potential for deep conflict where there was less significant or no conflict previously. Where change is of sufficient scale and impact beyond its immediate location, unexpected adversaries may join the fray. In times of dramatic change, consensus building and conflict avoidance become more important ...although easily overlooked. Past peace is not a reason to ignore establishment of good communications.

The required investment in communication and mediation increases as public perception is shaped/hardened. Fear of the unknown can be far more destructive than knowledge of uncomfortable facts. Once the pariah factor is established, accusations are cheap to tack on and expensive to debunk or disprove. A 'grain of truth' to accusations seems sufficient to extend fear and suspicion. These are among strong arguments for investment in professional

public relations and openness in communicating with neighbours, the general public and the media.

In summary, regular, knowledgeable, accurate communications appear to be a necessity in development of rational equitable environmental policy. The mediation process offers a mechanism for orderly discovery of facts, exchange of views and interests, and the establishment of consensus on some points. Agriculture and most other groups in society must be prepared to communicate with political leaders, the general public, and the media in order to protect their interests in the policy making process and work toward socially optimal policy.

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