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Policy Decision Making Framework For Considering The Economic And Non-Economic Effects Of Changing Animal Welfare Regulations

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Summary

Animal welfare policies are often dealing with complex issues that are value laden and quite complex for New Zealand society to consider and evaluate. As a result, it may be difficult for agencies to converge upon policies that provide equally desirable and universally popular solutions. In some cases, achieving a consensus about what constitutes the most socially desirable course of action to follow may simply not be possible. The 4-Windows strategy originally developed by Bob Flood can provide a systems framework that brings together differing policy paradigms and methodologies. Each window has been further developed in this study for examining a particular type of policy question about the central issue. Economic analyses can be incorporated as a component within these approaches. When applied to farming practices of concern to animal welfare agencies, such as lamb castration, bringing the results from each of the windows can be brought together in a decision matrix can providing new insights into different world views and ways of incorporating a range of world views in the development of new policy.

Key Words

policy, animal welfare, world views

Systems Approaches To Policy

Approaches to policy design usually reflect an understanding of the nature of a policy problem and the political solutions that can be devised to address it (Howlett and Ramesh, 2003). For designing policies that address particular issues and resolve any associated problems, it would be preferable if cause and effect relationships could be closely related in time and space (Senge, 1992). Complex resource management and moral issues such as animal welfare may not be amenable to simple

cause and effect relationships, and it may be quite difficult for the public to comprehend, or develop a general community consensus about the precise nature of the policy problem and the patterns of costs and benefits that various solutions are likely to involve. Such difficult issues become 'divergent problems' rather than 'convergent problems' (Senge, 1992).

With convergent problems there is general public agreement about the nature of a problem and what constitutes a suitable remedy. As the number of studies undertaken on convergent problems increase there will be a growing convergence on the possible solutions that are identified. It is common for mechanistic models to be used in such situations to describe an issue with the view that everything can be observed and understood as cause and effect relationships (Midgley, 2000). Social and organisational behaviour in mechanistic models are assumed to be predictable, functional, and inherently understandable. As policy problems become more complex and if mechanistic approaches remain dominant, increasingly sophisticated tools are required for forecasting, analysis and strategy. Unfortunately, these seldom achieve the expected breakthroughs in policy interventions because they are designed to handle detail complexity in cause and effect relationships rather than the dynamic complexity resulting from the interactions of management practices, business enterprises, and social norms (Senge, 1992).

With divergent problems there is no single solution. Chaos and complexity theorists have been showing us that much of what happens in the world around us, far from being inherently predictable, is actually unpredictable (Gleick 1987). Divergent problems have more than one possible solution depending upon the social values that are being applied and the decision makers' context. With divergent problems it is even possible that at any one particular time no policy solution may be available to decision makers at all.

Divergent problems require more than one analytical approach for developing policy. This suggests the need for using multimethodologies in policy studies (Midgley, 2000). Without a multimethodological approach, three significant interlinked problems are likely to arise:

- If there are a number of perspectives on an issue, but only one method, only one of those perspectives will be made fully visible to the policy agency. The agency will be unresponsive to different understandings alienating the groups with those perspectives. For instance cost-benefit analyses which require stakeholders to make trade-offs between economic and environmental values will automatically marginalise environmentalists who cannot accept the trade-off mentality embedded in the method.

- Secondly, as policy is being implemented, the issues most relevant will change as peoples' understandings develop. So what may have started out as an issue of organisational restructuring to improve efficiency might eventually come to be seen as an issue of encouraging participative decision making to improve workforce safety and health. If the only methods being applied were those designed just for organisational restructuring then they will not be able to deal with the change in focus (unless the new issue can be 'forced' into the mould of the old one).

- The third problem from using a narrow range of methods, is that the project team may begin to see everything through their own 'methodological lens'. Using a single method by its-self can create an expectation of what the problem and solution are going to be, to the exclusion of other equally potentially likely options.

Providing an integrated framework for linking multimethodologies is needed so that they are more than simply a number of adhoc fragments associated only because they examine the same topic. Systems approaches to policy analyses, while not currently widely practiced in New Zealand may be able to provide a way for studying divergent issues and guide policy agencies in understanding how to assess, accommodate and address differing points of view about complex policy issues. Economic analyses may be incorporated within some of these approaches.

Animal Welfare Policy

The New Zealand Government's sustainable agriculture strategy takes into account consumer expectations and concerns about the humane management of farm animals. For the Government, "the boundary between acceptable and unacceptable behaviour in the treatment of animals is constantly shifting" requiring review and modification in industry codes of practice (Ministry of Agriculture and Forestry, 1999).

The Ministry of Agriculture and Forestry is the Government agency that "leads and facilitates the management of animal welfare policy in New Zealand". It acts to "support the expectations of New Zealanders about animal welfare and develops animal welfare standards that enhance the marketing of primary industry products" through the functions of the Animal Welfare Group (MAF Biosecurity 2004). The Animal Welfare Group works with the Animal Welfare Act (1999) and involves different sections of the New Zealand public to balance between meeting the welfare needs of animals, the economics of production, scientific interests and ethical considerations.

The Animal Welfare Group of MAF has identified that many animal husbandry practices are carried out purely for economic reasons e.g. mating practices to increase productivity, housing to optimise feed efficiency, and animal mutilation to allow higher stocking rates. If some of the practices were to be changed in order to protect or enhance animal welfare, the changes could radically change the production systems within those industries. However, usually any evaluation of the effects of such changes by MAF has been limited to examining their financial consequences for producers and consumers.

The Animal Welfare Group of MAF has been particularly interested in being able to answer such questions as:

- What animal welfare practice changes are considered acceptable?
- Which sections of society should be responsible for resourcing any desired practice changes?
- How and when should desired practice changes be made?

A Systems Methodology For Animal Welfare Policy

Animal welfare policies are often dealing with complex issues that can be difficult for New Zealand society to understand and resolve. It may be difficult for policy agencies to converge their decision making upon policy solutions that are held to be equally desirable by all sections of the public. In some cases, achieving a consensus about what constitutes the most socially desirable course of action that should be followed may simply not be possible. Any economic models of market behaviour and cost-benefit analysis are unlikely to account for all the intangible consequences of management practices upon animal welfare or conflicting social goals.

There are a range of science based approaches to animal welfare assessment proposed in the literature such as using animal productivity, animal health status, biological function, stress and pain measures, animal behaviour, management risk assessment, and ethical judgement. Each of these is associated with people having different world views about the relationship between people and animals and each uses different sets of evaluative criteria to prioritise issues and determine their resolution. In the same way, when scientists are asked to consider a management issue and evaluate some options for addressing it they need to clearly understand that they will do so applying a particular set of values (Fraser, 2003). Any specific issue needs to be considered within the world view that generated it. Any options for addressing that issue needs to be considered within the same worldview and also within the world views of the people likely to be affected (Fraser 2003; Moller Hansen and Sorensen 2003), to avoid creating unintended consequences from making management changes.

The policy analysis method described here takes four different views of any policy issue along with its context. These views have been described as four windows, (Flood 1999; Figure 1), each with their own systems framework that brings together different policy paradigms and methodologies. Each window is suitable for examining a particular type of policy question regarding a common issue, with unique interrogative methods, approaches to assessing validity, and ways of comparing and interpreting information from different sources.

- The first window is used for examining and describing the production or management systems in which the animals being focussed upon live. It describes the biological functions involved and how they are affected by human interventions. This window deals with the impact of pain and stress upon animal health, biological functioning and behaviour.

- The second window examines and describes the human forces and drivers that are directly influencing production or management system stability and change. It helps policy advisors examine the influences of human decision-making upon animal husbandry and living conditions. This window can be used for exploring the financial and commercial effects of practice changes and the influence of regulations, best practice guidelines, and Quality Assurance (QA) and Environmental Management Schemes (EMS) upon animal welfare risks.

Figure 1. Diagram Of The 4-Windows In Animal Welfare Policy Development (Flood 1999)

Window 1. Systems of processes	Window 2. Systems of structure
Window 3. Systems of meaning	Window 4. Systems of knowledge and power

- The third window is used to examine and describe the range of social constructs associated with particular animal welfare issues. These include peoples' values, norms, ideologies, beliefs, and emotions. This window can be used for comparing the social norms and self-identities of people with different farming practices influencing animal welfare outcomes. It can also be used to describe opportunities for conflict, co-operation, capacity building, accommodation and consensus with different social groups in the design and implementation of animal welfare policy.

- The fourth window assists policy advisors examine the distribution of decision-making power, and the social as well as equity consequences of current practices and possible practice changes. This window can be used to assess and address

the fairness to different social groups of changes to policy, regulation and industry structure.

In a policy development process, the 4-Windows approach particularly applies to policy analysis, formulation and selection. Using the 4-Windows, each world view (or window) is applied in turn. The results from each of the windows together can provide new insights into different world views and ways of incorporating these in developing new policy.

Through each of the world views is identified the critical "problems" contributing to an issue and a description made of how that issue would appear once those "problems" had been satisfactorily addressed. Once this perspective has been described for each world view, the results of each of them are compared to identify and describe the interactions between the different world views. An overall strategy for a policy intervention is then designed in consultation with the affected stakeholder groups.

One way in which these insights from the 4-windows can then be brought together in an open and transparent way is by using the Analytical Hierarchy Process (AHP; Sataay ???). The AHPenables policy makers to compare their strengths and weaknesses before one or more options are selected for further development and negotiation.

Application To Lamb Castration

A number of scientific studies carried out by agricultural and veterinarian scientists have shown that lambs feel pain when they are castrated, particularly when this is combined with tailing (Mellor and Stafford 2000). Both castration and tailing are widespread on New Zealand farms, over 65% of male lambs are castrated or partially castrated (short scrotum; Tarbotton, Bray and Wilson 2002), and over 97% of all lambs are tailed.

There are a range of methods available for farmers carrying out castration, from surgery to crushing the spermatic cords. They are known to vary in the levels of pain that they cause lambs (Mellor and Stafford 2000) are used by farmers for castration and tailing –. These operations have become routinised on most properties (Tarbotton, Bray and Wilson 2002), with many farmers using them because they are familiar, convenient and traditional. Despite castration and tailing usually being carried out on farms without anaesthetic, members of the public have accepted these operations as necessary for the efficient operation of farms on the assumption that any distress in lambs will only last a matter of minutes.

More recently research has shown that pain can be alleviated in young lambs (less than 6 weeks old) by administering a local anaesthetic 15-20 minutes before carrying out castration and tailing operations.

It is possible that as the general public becomes more aware of the amount and duration of pain being caused by castration, and that there are alternative

management options available to farmers, they may wish to discourage farmers from carrying out castration in lambs without anaesthetic.

If we use the 4-windows approach to develop policy around the issue of lamb castration and anaesthetics we would take the following steps.

Window 1. Systems Of Processes

Through the first window there would be an objective description of animal management around castration and the effects that it has on biological functioning.

The key criteria for creating and evaluating options through Window 1 are: the degree of pain caused by castration, the extra animal handing and stress caused, and any other animal health risks created.

Window 2. Systems Of Structure

The second window is used to describe the forces and drivers affecting the castration techniques being used by farmers.

The key criteria for creating and evaluating options through Window 2 are: the availability of suitable technologies, the effectiveness of the techniques, the financial costs and benefits involved, the staff capabilities required, managerial abilities and intensiveness needed, and market acceptability.

Window 3. Systems Of Meaning

The influence of social norms and self-identity upon decision makers and stakeholders is described through the third window.

The key criteria for creating and evaluating options through Window 3 are: the naturalness of the farming processes, the quality and value of any animal products, and any operations not being offensive to naive parties.

Window 4. Systems Of Knowledge And Power

Window four is used to describe the distribution of decision making power and the consequences of changes to animal welfare policies, regulation, and industry structure.

The key criteria for creating and evaluating options through Window 4 are: social equity between producers, public, consumers, processors, and commercial interests; also the increased involvement of marginalised social groups.

Applying the 4-Window approach to policy on lamb castration has particularly highlighted the importance of encouraging technical developments in anaesthetic administration so that it can be a more practical option for farmers. This is really a pre-condition to making local anaesthetic a required farming practice at castration. Studying this topic has shown that many more male lambs could be left entire or made short scrotum. The main limitation for a change in practice is that farmers are tending to use the most convenient and familiar option for themselves.

Farmers' values and attitudes towards animals are such that as practical, alternative, practices become available it is likely that they will be voluntarily taken up by most farmers. Regulatory changes will only be required if the available technologies for providing anaesthetics remain inadequate and for those farmers who will continue to operate outside socially accepted norms within the industry.

Conclusions

The Animal Welfare Group within the Ministry of Agriculture and Forestry has become aware of the increasing complexity of developing policy that addresses controversial issues for the New Zealand public. They have become concerned that basing their policy upon simplistic cause and effect relationships identified through scientific studies may not be effective at meeting the needs of some sections of society. Economic studies can provide additional information about potential costs and benefits but are unlikely to adequately convey concerns resulting from peoples values and beliefs, or from shifts in the knowledge and power held by different groups in society.

The 4-windows methodology developed in this study from an understanding of social systems and multi-criteria decision making can assist policy makers deal with such issues. The results from a 4-windows assessment can be used to help decide which animal welfare practice changes will be considered acceptable to different sections in society. It can be used to assist in identifying which sections of society should be responsible for resourcing any desired practice changes, and how and when desired practice changes should be made.

When applied to lamb castration the analysis suggests that animal welfare would be improved by a greater use of anaesthetics on farm. There is a lack of suitable technologies to make the application of anaesthetics practical given present farming experience, management intensity and farming costs. Current practices of lamb castration may not be acceptable to some sections of the New Zealand public and as alternatives become available they are likely to expect the use of these practices by farmers. Farmers tend to continue applying the castration practices that they are most familiar with but can be encouraged to make changes, as the widespread use of cryptorchardism has shown. The availability of practical on-farm technology is the most limiting factor for policy agencies wishing to address this issue, and suggests a priority for policy support of research on this topic.

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