

Impact of Consumer Demand for Animal Welfare on Global Trade

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Abstract: Animal welfare has received increasing attention among wealthy consumers, mainly in industrialized countries. The passage of animal welfare laws may offer individual and social benefits to concerned consumers, while resulting in higher prices for all consumers. Higher domestic prices may cause unconcerned consumers to seek cheaper foreign alternatives, potentially leading to trade policy concerns.

Introduction

Consumer concerns about animal welfare are not a new phenomenon. Some of the ancient rules for slaughtering animals for kosher meat were originally intended to reduce pain to the animal. Many religions, including Native American religions, Hinduism, and Australian Aboriginal tradition, have held particular animals to be sacred, and have devised particular rules about whether and how such animals were to be used for food or service. The Society for the Prevention of Cruelty to Animals began in 1824 in Great Britain. During the last 20 years, however, consumer groups, mostly in industrialized countries, have brought much more attention to the topic of animal welfare. As consumers grow wealthier, their access to an adequate quantity of food becomes assured. At this point, consumers tend to turn their attention to the quality of their foods. Such quality concerns can include food safety and aesthetic attributes, but they also include concerns about how food is made, and the impact that food production techniques have on the environment, on labor, and on animal welfare. These concerns can result in consumer demand for foods made with certain production techniques.

A number of different types of consumer movements for animal welfare have sprung up. Some focus on animal rights and attempt to stop any activities that interfere with the ability of animals to live free from human interference. These groups generally encourage the complete cessation of the use of animals for economic activity. Other groups have focused on attempting to improve the treatment or welfare of animals that are to be used for food production purposes. In the European Union (EU), these groups have received a great deal of attention from the public and from legislators. A number of laws regulating how farm animals are to be treated have been passed in the EU. Additionally, a number of other countries have animal welfare regulations, although these generally do not specify production practices in as much detail as those in the EU. These laws regulate domestic production for the countries that pass them, but cannot regulate production abroad.

What does economic analysis have to say about the effects of animal welfare laws? This article attempts to answer that question in general, rather than country-specific, terms by looking at the economic motivation for passing regulations dealing with farm animal welfare², the potential effect on production costs, and the potential effects on trade.

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² While animal welfare concerns usually encompass pets, animals used for research, animals used in circuses, and hunting regulations, this paper will focus on the welfare of farm animals.

Economic Reasons for the Passage of Animal Welfare Regulations

Two types of economic motivation for the passage of animal welfare laws exist. The first occurs when consumers feel that they individually benefit from improved animal welfare. The second occurs when a society as a whole can benefit from improved animal welfare.

Individual Benefits

Many consumers have expressed their preferences for goods produced with higher levels of animal welfare. Consumers care about how products are made and get more satisfaction from consuming goods that are made with methods they approve. The increased market for “environmentally friendly goods” and the recent boycotts of clothing companies that manufacture goods in factories where workers are subjected to conditions that don’t meet U.S. labor standards are both demonstrations that consumers care about production methods of the goods that they buy.

Consumers are concerned about animal welfare in food production, although how this concern compares with other food concerns is not entirely clear. FAS Online notes “Poultry production in the Netherlands remains flat as future growth in this sector is tempered by consumer concerns about animal welfare issues and the impact of production on the environment.” (March 27, 2000). Blandford and Fulponi (2000) cite surveys which indicate that 80 percent of EU consumers are concerned about animal welfare when asked, but when asked to list their greatest concerns about food, only 5 percent volunteer animal welfare as a concern.

There are indications that consumers in industrialized nations are willing to pay more for products that feature higher degrees of animal welfare. In a survey taken in 1995, 67 percent of U.K. consumers surveyed indicated that they had purchased free range eggs or chickens in the previous year, which suggests that given a choice, consumers are, in some instances, willing to pay the extra expense of food produced with techniques that are perceived to be more friendly to animals (index to International Public Opinion, 1997/98). Bennett (1997), in a survey of British consumers, finds that consumers would be willing to pay 6-30 percent more for eggs, if such an increase were the result of a ban on battery cages (towers of small cages used to house individual hens) for hens.

Bennett and Larson, in a 1996 survey of U.S. college students, find that students were willing to pay 18 percent over market price for free range eggs and willing to pay taxes of about \$8.00 per person to fund practices that they believe will improve conditions for veal calves and hens.

However, consumers cannot tell by looking at a product how it is made, so they might lack adequate information to purchase the goods they prefer. Akerlof (1970) finds that if consumers can’t determine the characteristics of the goods that they purchase, then goods with undesirable qualities will flood the market and consumers will be discouraged from buying. Firms have some incentives to provide consumers with information about products they purchase. If people value goods produced with perceived high standards of animal welfare more than those produced with what are perceived to be lower standards, then they will pay more for the higher standards. If the extra amount that people are willing to pay is greater than the cost of providing the perceived higher standards, then producers have an incentive to produce according to such standards. Producers whose production technologies meet higher standards of animal welfare have an incentive to reveal that to the consumer with a label or advertisement, thus providing the information without any need for government involvement (see Ippolito and Matthias, 1990; Grossman, 1981). For example, McDonald’s publicly states that it only purchases meat that has been slaughtered in accordance with strict standards designed to improve welfare, and some studies indicate that humanely raised animals provide more meat of higher quality (Bjerklie, 2000). Indeed Browne *et al.* (2000) note that firms engage in “socially responsible sourcing” because they fear damaging their reputations. So why does the government need to regulate animal welfare?

Two potential problems could interfere with the firm’s communication of information to consumers (Golan, Kuchler and Mitchell, 2000). First, the higher price that consumers are willing to pay for goods produced with high standards creates incentives for firms to commit fraud or to mislead consumers. If firms can convince consumers that they have used production methods that adhere more closely to animal welfare standards, even when they have not, then the firms can charge the higher price without paying the higher production costs. While there are incentives for consumers and rival firms to uncover fraud, and court systems to enforce truth-in-advertising laws, cases of

Animal Welfare Laws

Consumers that voice farm animal welfare concerns focus on a number of issues. Many of these issues are summed up by the Five Freedoms, a list outlined by a British Government commission investigating animal welfare in the 1960s. These include the freedom from thirst, hunger, and malnutrition; freedom from discomfort; freedom from pain, injury, and disease; freedom to express normal behavior (with adequate space and company of the animal's own kind); and the freedom from fear and distress (Winter, Fry, and Carruthers, 1998). Consumer groups are concerned about animal welfare on the farm, during transport, and during slaughter.

Animal welfare laws regulating the treatment of farm animals used for agricultural production have been in existence for some time, and are part of the legal code of a number of nations. Some laws simply generally prohibit cruelty to animals, including farm animals. Others specify with great precision the methods to be used in handling and housing animals.

In the United States, most animals used for food are covered by the Humane Slaughter Act of 1958 (amended

1978), which specifies how animals must be treated during the slaughtering process. Many U.S. States have additional laws on general and farm animal welfare. Additionally, many U.S. producer groups, like the American Meat Institute and the United Egg Producers, issue voluntary welfare guidelines for the handling of animals.

A number of nations, including Japan, Australia, and New Zealand, have animal welfare laws. New Zealand has recently revised its animal welfare laws to include the Five Freedoms. During the 1980s, European countries signed a small flurry of treaties specifying how animals were to be treated. Most of the signatories to these treaties were members of the Council of Europe, a regional organization with a membership that extends beyond the EU, and some of the more recent EU legislation is intended to put into practice the requirements of those conventions.

The following is not an exhaustive list of animal welfare laws (table I-1), but will give the reader some idea of the scope of such laws. (See Blandford and Fulponi, 2000, for a lengthier discussion.)

Table I-1—Examples of animal welfare laws

Type of law	Law or Country	Requirement
Laws that define and require general standards of treatment.	California Penal Code, Maine Statutes.	Requires that all animals be allowed adequate food, exercise, and freedom from torture and overwork.
	Japan's Law Concerning the Protection and Control of Animals, 1973.	Requires that animals not be treated cruelly or abandoned.
Laws that regulate slaughter.	U.S. Humane Slaughter Act of 1958.	Specifies how animals must be treated during the slaughtering process.
	European Convention for the Protection of Animals for Slaughter; EU Directive 93/119/EC.	Specifies rules for slaughterhouse conditions and the slaughtering process.
Laws that regulate the area and methods for confining animals.	Australia.	Specifies minimum cage sizes for hens of 450-600 square centimeters.
	Australia.	Prohibits hog tethering.
	European Convention for the Protection of Animals Kept for Farming Purposes; EU Council Directive 98/58/EC, 1998.	Outlines general requirements for keeping animals on farms, including the provision of food, freedom of movement, inspections, lighting which is altered to resemble night and day, air circulation and pens that can be cleaned.
	EU Council Directive 1999/74/EC, 1999.	Mandates hen cage sizes that allow laying hens a minimum of 550 square centimeters in which to move around by the year 2003.
Laws that govern animals during transport.	European Convention for the Protection of Animals During International Transport; EU Council Directive 91/628/EEC.	1991 regulations for the treatment of animals during transport, which specify the intervals during which animals were to be fed and the characteristics of the space in which they could be confined.

fraud are costly to prove. Additionally, sometimes the firm's communication can be made deliberately vague. If a retailer sells chickens labeled "free-range", what does "free-range" mean? Does it mean that the chicken had 25 square feet in which to roam, or an enclosed space of 5 cubic feet?

Secondly, while firms have an incentive to tell consumers about desirable qualities of the products they sell, they don't have an incentive to reveal undesirable qualities (Golan, Kuchler and Mitchell, 2000). This should mean that firms that sell products with good qualities will tell consumers about these qualities via ads and labels. Firms that sell products with undesirable qualities just won't say anything to the consumer. An informed consumer might conclude that the firms that don't provide information about positive qualities are providing lower quality goods. Ippolito and Matthias (1990) find that in the market for cereals, the more healthful cereals were labeled with health claims, and the less healthful ones were unlabeled. Consumers, they found, assumed that the unlabeled cereals had undesirable qualities. However, Zarkin and Anderson (1992) suggest that if consumers believe a product to universally have a desirable quality, firms won't bother to label. A government might decide to regulate production if it can't rely on firms to communicate quality information to consumers. In order to determine whether there are incentives for firms to reveal desired information about animal welfare, one would have to consider consumers' initial beliefs about current production practices and whether there are adequate incentives or institutions to safeguard against fraud.

Social Benefits

In addition to the private benefit that some consumers receive by purchasing goods made with more stringent animal welfare practices, there are associated social benefits. If some consumers are concerned with the welfare of animals, they are usually concerned with the welfare of all animals, not just the ones used to make goods that they themselves purchase. Bennett and Larson (1996) find that if battery cages were banned, about 10 percent of consumers surveyed felt that they would get some additional benefit from the fact that other people also wouldn't be buying battery-produced eggs. That is, if Consumer X cares about chicken welfare and buys some of his eggs from farms that raise free-range chickens, he gets the benefit of what he perceives to be an increase in animal welfare

for those chickens. He also gets welfare from the free-range eggs purchased by everyone else, because in his mind, all of those chickens experience increased welfare as well as the ones that produced his eggs. However, Consumer X also buys some eggs from confined hens, because they are cheaper. At some point, the extra cost of the free-range eggs becomes greater than the benefit that Consumer X receives from the perceived improvement in hen welfare. From the point of view of people who care about chicken welfare, though, Consumer X should weigh the cost of free-range eggs against the sum of *everyone's* benefits from their perceptions of improved chicken welfare, not just his own personal benefits from improved chicken welfare. From the standpoint of the society as a whole, Consumer X is consuming too few free-range eggs and too many eggs from confined hens. Indeed, even if Consumer X cares about chicken welfare, he could decide to consume all conventional eggs, since he will receive benefits from everyone else's consumption of free-range eggs without paying any of the costs. Because consumers don't take the preferences of other consumers for animal welfare into account, then fewer free-range eggs will be purchased than society would like.

When consumption of goods by one person affects a lot of other people, government action is sometimes necessary. Consumers, if left to their own devices, will only take their own welfare into account when deciding what to consume. They won't think about damage that their consumption does to others in the form of pollution, noise, reductions of perceived animal welfare and other costs, so they consume more than their fellow citizens would like. The government may intervene to ensure that quantities produced and consumed more closely match the preferences of the society as a whole. The government sometimes does this by taxing the costly behavior. In other cases, the government might regulate the behavior, or subsidize less costly behavior.

Governments sometimes find these interventions to be difficult, as they must balance the welfare of members of society that want the regulations and the welfare of those that don't want such regulation. For instance, if the government forces all firms to conform to certain animal welfare standards, and these standards are very costly, consumers that don't care about animal welfare might pay more for food, without feeling like they received any real benefit for their extra expenditure.

How do governments go about weighing these different interests? Governments might attempt to measure costs and benefits of alternative animal welfare regulations with surveys or studies. A government can attempt to quantify and measure benefits from animal welfare changes, but this task is not easy. It is sometimes difficult to select criteria for animal welfare. Should one measure improved health, reduced agitation, or food intake? Research is required to determine which production practices satisfy the chosen criteria better. After the magnitude of a change in animal welfare has been determined, the government must then determine how much its citizens benefit from such changes. In other cases, governments effectively rely on groups with different preferences to communicate the strength of those preferences via lobbying. In the case of animal welfare, governments generally hear from farm animal producer groups, and animal rights groups, that is, consumers who care about animal welfare. Although consumers who have no preferences about animal welfare are also affected by legislation, they generally do not band together since the effect on each consumer has thus far been too small to spur them into political activism.

Interest groups have indeed influenced animal welfare legislation. The influence has been slightly different in the EU compared with the United States. Meat packers and the Livestock Conservation Institute in the United States supported the Humane Slaughter Act in 1958 and in 1978, as did the American Humane Association and several other animal protection groups; the industry argued that the law was a reflection of best practice for the industry (Francione, 1996). *The Economist* notes that animal rights activist groups in Britain have focused more on farming, while American animal rights groups have focused on the welfare of laboratory animals (1995). In 1994, animal rights advocates convinced McDonald's to require its suppliers to adhere to animal welfare guidelines, after having initially threatened to put the resolution before the company's shareholders (Francione, 1996). Additionally, the animal welfare movement in the EU includes a very broad base of support, with participation from people who have not been politically active on other issues. It appears that groups in the EU are more focused on encouraging the government to regulate, while in the United States, there is a more narrow focus on non-regulatory measures. This is borne out by the fact that voluntary guidelines are encountered more frequently in the United States, while regulation is more prevalent in the EU.

How Animal Welfare Laws Affect Production Costs

Animal welfare laws generally impose restrictions on livestock and dairy producers and processors that tell them under what conditions they may keep their animals, how often the animals must be fed, and how they may be slaughtered. Farmers, like most other firm owners, generally use the lowest cost technology to produce their products. Some animal-friendly technologies are already low-cost. Most livestock industry representatives note that keeping animals healthy improves production quantities. Some studies indicate that better treatment means higher yields (Bjerklie, 2000). If producers aren't already using the animal friendly technology, it might be because the technique was costlier, or delivered a lower quality good. Mandating the switch in production methods usually increases costs. In some cases, the cost increase is insignificant, but in other cases, switching technology can be quite expensive.

This increase in costs occurs through a number of different channels. Keeping animals in larger spaces means either that additional land must be purchased or fewer animals may be kept. This increase in resources per animal increases the costs of producing each animal or unit of animal product, which can, in turn, result in higher prices for the consumer.

How much does adherence to stricter animal welfare standards cost, and do citizens consider the standards to be worth the extra expenditure? The effect on costs is probably dependent on the type of regulation, and estimates of the size of the cost impact vary. Some studies in the United Kingdom indicate that a ban on battery farming can raise egg production costs by 8-30 percent; consumer willingness to pay might be high enough to cover these costs (Bennett, 1997). Blandford and Fulponi (1999, 2000) cite a study by McInerney (1995), which finds that adding some practices that are believed to be animal welfare enhancing would increase a consumer's food bill by only 0.25 percent, but they also note that an array of studies in EU countries suggest that costs might rise by anywhere from 5-17 percent. They also note that some analysis suggests that feed needs per animal might rise, leading to higher grain prices, which could even spill over into world grain markets and require those in poor, food-importing countries to pay more for grain.

If private benefits to consumers are not enough to outweigh animal welfare costs, the government must decide whether the benefits to individual consumers, plus the benefits to society of perceived improvements in animal welfare, outweigh the costs of imposing the regulations. An animal welfare regulation improves social welfare if the sum of all of the benefits to consumers of increased animal welfare is greater than the sum of the increased costs to the consumer and producer. This needs to be evaluated for each regulation.

Additionally, a country might care about how those costs are distributed. Food items considered as a whole, and some individual food items, have an inelastic demand; i.e., quantity demanded doesn't change very much with price. Bennett (1997) notes that when demand is inelastic, the costs of a battery cage ban would fall on the domestic consumer, who would see an increase in price, rather than on the domestic producer, who won't see a large drop-off in demand as prices rise. Since food is a much larger share of a poor person's budget and demand for some higher priced food items is more elastic among lower income consumers, industrialized nations passing animal welfare regulations might need to look at the impact of increased food prices on their poorest citizens. Indeed, willingness to pay for animal welfare is correlated with income (Bennett, 1997; Blandford and Fulponi, 2000).

Enforcement of animal welfare laws tends to vary somewhat, and if enforcement is low, cost effects could be smaller. Also, if cost impacts are high, producers have the incentive to attempt to evade enforcement. Most countries require that slaughter of animals be carried out in licensed facilities, so that inspection is facilitated. However, problems can still arise, especially if small producers slaughter animals in unlicensed and undocumented facilities. The EU Commission notes that for journeys originating outside the EU, regulations for animal welfare during transport are hard to enforce, and violations may occur (Press Release, February 17, 2000). A survey done by the Food Safety Inspection Service (FSIS) of a non-representative group of 61 slaughter plants in the United States found 48 had no evidence of inhumane handling, and 13 had incidents of inhumane handling (FSIS, 1998). McDonald's U.S. suppliers have increased their compliance with welfare guidelines since McDonald's began auditing firms (Bjerklie, 2000).

Implications for Trade

Domestic Industries

In general, any policy that imposes costs on a domestic firm that foreign firms do not face can potentially put domestic firms at a disadvantage. Because the domestic goods will be costlier, consumers are likely to purchase less expensive foreign goods instead of domestic goods (Blandford and Fulponi, 1999).

Domestic firms understand this consequence of differences in regulation. Thus, when a country passes legislation that increases costs for domestic producers, the producers sometimes apply political pressure to block imports or seek off-setting compensation from countries that don't have similar regulations. When the restrictive legislation has an objective that benefits consumers, the domestic firms are frequently joined by consumer groups in their lobbying efforts. Vogel (1995) refers to this as a "Baptist-bootlegger coalition", so named for joint efforts by Baptist temperance activists and underground liquor producers to lobby to keep Prohibition laws in place, because the restrictions kept liquor illegal, which, in turn, kept prices of illegally produced alcohol high. Despite the different objectives of the two groups, one piece of legislation served them both. Farmers' groups and animal welfare groups have an incentive to lobby for a ban on imports that don't comply with animal welfare laws. In the United States, for instance, the Humane Slaughter Act requires imported meat to have been slaughtered in accordance with certain standards.

The EU included in its 1998 law governing farm animals a provision to study the differences between the EU's laws and those of its trading partners, the effect of the new laws on the competitiveness of EU agricultural products, and the potential for "obtaining wider international acceptance of the welfare principles" (Council Directive 98/58/EC). The EU's proposal to the World Trade Organization (WTO) on animal welfare voices concerns about competitiveness of countries with costly animal welfare standards and suggests the formation of international animal welfare agreements, among other policies, to deal with the problem. The EU is therefore aware of the possibility that its more stringent laws could have an effect on whether it can compete with countries with different standards. The EU's only attempt thus far to restrict imports on the basis of animal welfare has been the

banning of imports of furs produced by countries that don't ban leghold traps. Tentative agreements are in place to allow trade among the EU and the United States and the EU and Canada, as the United States and Canada have signed an agreement defining humane trapping standards. The EU's legislation seems to imply that it would like to try to work out similar international standards with trading partners on farm animal welfare.

Trading Partners of Countries with Stringent Regulations

If countries with stringent animal welfare laws require their trading partners to adhere to those laws, such requirements could have an impact on imports from countries that can't meet the animal welfare standards. The reduced demand from the import-restricting country could reduce the prices of animal products in the exporting country. The domestic prices in the country restricting trade could rise, since supply is restricted to the more expensive domestic production. How large the impact is depends on the volume of trade that would occur in animal products in the absence of such regulations.

About 21 percent of the value of 1999 U.S. agricultural exports came from animal products (USDA-ERS, 2000a). The United States exported (to all countries) about 11 percent of its meat production (by volume) in 1999 and imported a quantity of beef and pork comparable with 8 percent of domestic production (USDA-ERS, 2000b). Current U.S. exports of animal products are not large compared with total production, and animal product exports do not come anywhere near constituting a majority of U.S. agricultural exports by value. Thus, importing nations' animal welfare laws would affect a fraction of current U.S. exports and production.

The size of the effect that a change in these trade volumes would have depends on the responsiveness of price to a change in demand. If one considers the most extreme example, where Country 1 bans the import of Country 2's animal products, the portion of Country 2's production that it exports to Country 1 would have no immediate buyer. In response, the world animal product market would have extra goods on it, and prices would fall outside of Country 1. This price decrease would cause some of Country 2's producers to pull their goods off the market and some consumers, attracted by the lower price, would buy more. If suppliers are very responsive to price, and can pull

their goods off the market quickly, or if a small decrease in price makes consumers buy a lot more, price won't fall too much. However, if Country 2's producers are stuck trying to unload the animal products as soon as they can, since livestock is costly to store, or if the rest of the world has as many animal products as it wants, price tends to fall more, and Country 2's producers bear more of the costs.

Countries are beginning to discuss the effect of animal welfare legislation on developing nations. Consumers in developing countries don't have the extra income to pay for more expensive animal welfare standards. Thus, their domestic standards might not meet the standards of their trading partners. Some developing countries are concerned about potentially having to meet the stringent standards of wealthier nations. Additionally, some developing countries have expressed skepticism about the discussion of animal welfare in the WTO. The EU's position, outlined in their proposal to the WTO on animal welfare, states that intensive agriculture used by industrialized nations is much more likely to violate the EU's animal welfare laws.

Alternatives to Regulation

A criterion that policymakers, and the WTO, frequently apply to a trade-restricting regulation is whether regulations are the least trade-distorting mechanisms to achieve desired animal welfare objectives. In other words, is there a policy that informs consumers about the animal welfare effects of the goods they buy, and improves animal welfare by the socially desirable amount, without restricting trade? Two policy alternatives that are sometimes proposed, and which are included in the EU's proposal on animal welfare to the WTO, are labeling and targeted subsidies.

Labeling

Labeling is frequently suggested as a way of dealing with differences in product or process standards between trading partners. If the EU governments demanded or even allowed disclosure about animal welfare practices on food labels, would that provide information and improve animal welfare? If firms labeled their products with animal production techniques that they used, this would provide consumers with information. Indeed, as noted above, producers already have incentive to provide this information. Additionally, however, steps would have to be taken to prevent the misuse of labeling or confusion among consumers. Vague terms like "free-range" and "cruelty-

The WTO and Animal Welfare

In deciding whether or not animal welfare standards requirements for imports are legal, the World Trade Organization (WTO) might apply a number of standards. One important standard is that of national treatment. A country may not hold imports to standards that domestic firms do not have to meet. If the rules for the production of imports were the same as the rules for domestically produced goods, animal welfare import regulations would not be in violation of this standard. However, in practice, foreign firms could be at a disadvantage if they do not have access to the same inspection regimes that domestic firms have. If firms must prove that they are complying with the regulations, and domestic firms are certified by government inspections, foreign firms that don't have access to the domestic inspectors will be at a disadvantage. It might be difficult for a country to provide evidence of animal friendly production methods to a trading partner halfway around the world.

Another potential area of conflict between the WTO and animal welfare requirements for imports might be the attempt to regulate processes. The WTO is usually open to a country's placing restrictions on *product* quality, particularly when there is documented evidence of health and safety questions. However, restrictions on the *production processes* by which goods are manufactured are regarded differently. Some argue that process restrictions are never legal under the WTO, while other scholars argue that there might be some cases where the restrictions are consistent with WTO regulations. There have been a number of high profile WTO cases that dealt in some part with production processes, some with animal welfare implications like the Tuna-Dolphin case or the Shrimp-Turtle case, both challenges to U.S. restrictions on imports of seafood.

The WTO considers national treatment and production process versus production quality to be important issues in evaluating the legality of a country's requirements for its trading partners. However, clear standards for applying these principles to a given trade regulation is still evolving as the body of WTO case law grows.

free" would probably need to have standardized meanings for consumers to be able to understand them.

Blandford and Fulponi (1999) suggest that third-party accreditation could be used to ensure that labels mean what consumers think they mean. Those meanings would have to apply to goods coming from all countries, which could mean negotiating with other countries about meanings. Hobbs (1995) and Blandford and Fulponi (1999) note that marketing meat that is produced in accordance with animal welfare regulations can be more costly, as firms must separate their meat from mass-produced meat, arrange for separate shipping and packaging, and monitor production practices to make sure that they conform with standards of animal welfare.

While clear labels can provide information to consumers, they don't necessarily allow a society to achieve the desired level of some social goal. Even if consumers are well-informed and are able to purchase goods with animal welfare standards that they prefer, there is no guarantee that they will change their purchasing behavior as much as society would want. One consumer might be reluctant to buy a free-range steak because it is more expensive, but the extra expense might be small compared with the extra benefit that all of those who value animal welfare receive. Society might like the consumer to buy that steak, but even though it is labeled and he knows that it is free-range, he chooses not to buy it because the extra costs outweighs his extra personal benefit from consuming it. Labeling is sufficient in some cases to deal with the consumer information problem, but not with the problem of social goals (Golan, Kuchler and Mitchell, 2000).

Subsidization

Targeted subsidization to cover the costs of meeting animal welfare standards, coupled with labeling, is sometimes also suggested as a way of dealing with different beliefs about proper production standards. Under this policy, (Bennett, 1997; Blandford and Fulponi, 1999) a government would underwrite the producer's added costs of switching to higher animal welfare standards. If a chicken farmer needed to install larger hen cages or must keep fewer animals on his property, the government could subsidize all or part of the cost. In this case, labels could provide consumers with information about production practices. The subsidy reduces the cost difference between products

that are produced with higher animal welfare standards and those with lower standards. Consumers are therefore more likely to choose products produced with high animal welfare standards, because there is less of a price differential, and it is possible for society to achieve a more socially desirable level of animal welfare. The smaller price differences between the imported goods and the domestic goods would reduce the political incentives to try to keep the imported goods out. The smaller price increases also make the policy less costly to poorer members of a society.

Will subsidies result in trade distortions by encouraging production that might not have taken place without subsidies? In a recent debate in the United Kingdom, one Member of Parliament suggested that general livestock subsidies be lowered to reduce incentives for farmers to overproduce, thereby reducing intensity of farming, and increasing animal welfare. Another countered that preserving animal welfare is a more costly method of production, so that increased aid to farmers is needed to compensate them for that extra expense (Select Committee on Agriculture, 2000). Which argument is correct?

It is true that animal welfare laws might raise production costs, and subsidies generally help farmers cover costs. However, giving a farmer a general subsidy with no restrictions does not necessarily lead to the implementation of animal welfare standards, as the farmer can spend the subsidy on any production costs. General subsidies, by encouraging farmers to produce more, can also potentially distort trade by artificially reducing production prices.

It is possible that a non-targeted agricultural subsidy per unit of land or unit of output could even harm animal welfare. Some argue that agricultural subsidies, by encouraging farmers to increase output, encourage intensive production and mechanization, or “factory farming”, and that such practices reduce animal welfare. To the extent that moving toward intensive production cuts costs, farmers have an incentive to make such changes anyway. However, subsidies might be the cause of such structural change, if they encourage intensification at the expense of other methods of production. One mechanism for this occurs when high agricultural subsidies make land more expensive, so farmers are inclined to force more animals into a given amount of space (Winter, Fry and Carruthers, 1998).

Targeted subsidies that require farmers to use the money given to comply with animal welfare standards are the only way to guarantee that farmers use subsidies in the manner intended. If the subsidies are given per animal, they could potentially increase production by lowering production costs per animal. However, targeted payments come with a requirement of higher cost production techniques, which can cancel out the incentive to increase production, but only if the government estimates the size of the payment correctly.

Subsidies must be paid for, however, so this policy is more likely to be more costly to the government budget than simply setting standards that farmers must meet. It is also difficult to determine the level of animal welfare desired by society, and therefore difficult to figure out how big the subsidy should be. Oversubsidization means that the government is spending more money to preserve animal welfare than the society would like, and is therefore sacrificing the ability to spend on other services that society desires more.

Conclusion

Concerns about animal welfare have prompted many industrialized nations to pass laws concerning animal welfare in research, commercial use, and farming. These laws seek to satisfy the desire for increased animal welfare on the part of individual consumers and societies as a whole. The laws could potentially raise production costs, thus making goods more expensive for domestic consumers. If countries with stringent animal welfare laws require trading partners to meet animal welfare requirements, in order to protect their domestic industries producing at a higher cost, world trade flows may be affected. The extent of these effects will depend on the relative sizes of trade in animal products. Policy alternatives to animal welfare regulations include labeling and subsidization of animal-friendly production methods. Labeling can help meet individual animal welfare goals, but not social goals. Subsidization can help meet both goals, and its effects on world trade depend on methods of implementation.

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