

Low Animal Welfare Havens, Will they Be a Problem and how Can it Be Dealt with?

«Havres de non protection des animaux – poseront-ils problème et comment y remédier?»

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Résumé

Les futurs coûts associés au respect des standards obligatoires de protection des animaux de l'Union européenne pour la volaille et les œufs sont importants et pourraient mener au transfert de la production vers des pays tiers. Cet article compare systématiquement les politiques compensatoires possibles. Certaines politiques comme les accords multilatéraux et l'étiquetage pourraient offrir un certain support mais ne seraient pas efficaces. Par contre, les paiements compensatoires sont efficaces mais désavantagent les pays tiers qui respectent des standards équivalents. La discrimination tarifaire pourrait donc être une meilleure alternative. Un important désavantage serait toutefois ses hautes exigences institutionnelles. D'autres aspects à investiguer incluent la quantification des transferts potentiels ainsi que les effets et coûts de transaction associés aux différentes politiques.

Mots clé: Protection des animaux, normes de production, coûts de mise en conformité, étiquetage, paiements compensatoires

Summary

Future cost of compliance with obligatory animal welfare standards in the EU for poultry and egg production are significant and may lead to relocation of production to third countries. This article systematically compares potential compensating policies. Some policies, like multilateral agreements and labeling, may be supporting, but not be able to prevent relocation comprehensively. Compensatory payments, in contrast, are effective but disadvantage third country producers which comply with equivalent standards. Therefore, tariff discrimination may be a better alternative. A major drawback of tariff discrimination, however, are its severe institutional requirements. Future research questions include quantification of potential relocation and effects as well as transaction costs of various compensating policies.

Keywords: Animal welfare, process standards, cost of compliance, labeling, compensatory payments

1 Introduction

In the process of economic development, awareness of animal welfare issues and thus demand for animal welfare standards usually increases.¹ As a consequence, animal welfare standards display a high degree of international heterogeneity. Recent examples are the EU ban of conventional cages for layer hens beginning in 2012 which goes far beyond standards in most other countries, and the German prohibition of the housing of layer hens in cages at all after 2006, which goes even beyond EU standards. Compliance with such standards will impose substantial costs on producers. Therefore, concerns that animal production may be induced to move to countries with lower welfare standards may be well founded – a new variation of the well-known 'pollution haven hypothesis,' which has figured prominently in the debate on the effects of increasing heterogeneity of national environmental standards that has emerged since the mid-1980s. To date, the effect of higher environmental standards for agriculture appears not to have been large, due to modest compliance costs.² This may change, however, with the introduction of high animal welfare standards.

To deal with these concerns, various compensating measures to inhibit the relocation of production, such as labeling, compensatory payments to producers, and tariff discrimination, are currently being discussed among agricultural economists as well as in international agricultural policy and by NGOs. One of the drawbacks for most of them is that they do not comply with existing WTO rules.

This paper concentrates on four aspects with respect to a 'low animal welfare haven hypothesis.' Section 2 investigates the empirical relevance of the topic from a EU perspective. First, animal products are identified which will have substantial additional production costs due to compliance with existing or future animal welfare legislation. Second, the existing EU border measures for those products are looked at to

¹ Blandford et al. (2002) provide an overview of this process in the EU.

² See, for example, Grote et al. (2001: 259) who estimate the cost share of meeting animal welfare and environmental standards in the EU for cereals, rapeseed, and poultry meat to be below 5%. Hirschfeld (2001) estimates a cost share for meeting environmental standards for the German agricultural sector of around 3.5% (preliminary results). For a literature overview on the empirical evidence for the environmental pollution haven hypothesis that is not limited to the agricultural sector, see Nordström and Vaughan (1999: 36-46).

see whether reduced competitiveness due to higher animal welfare standards is a problem at all. In Section 3 of the paper, various rationales for policies to compensate for those additional costs and thus prohibit the relocation process are discussed. In Section 4, alternative compensating policies are discussed and assessed against the background of i) their potential to achieve the primary aim of avoiding the relocation of production as a result of higher animal welfare standards, ii) their impact on the interests of trading partners, iii) their institutional implications, and iv) their current and potentially future compatibility with the multilateral WTO framework. In Section 5, some conclusions are drawn and questions for further investigation are raised.

2 Empirical Relevance from an EU Point of View

2.1 Cost of Compliance

The EU has an extensive body of animal welfare legislation which consists of EU Directives, with their binding objectives, which must be realized by member states through national legislation; And EU Regulations, which are directly applicable in all member states. In addition, some member states apply stricter legislation for certain farm animals. In this paper, standards laid down in EU legislation are reviewed systematically whereas higher national standards are reported only incidentally.

General rules concerning the welfare of farm animals are laid down in EC Directive 98/58/EC,³ which is based on the European Convention for the Protection of Animals kept for Farming Purposes. In addition, specific legislation exists for some farm animals. For cattle and sheep, no animal-specific welfare legislation is in force at EU level except for calves. Consequently, an EU report which analyses the potential for trade distortion resulting from animal welfare legislation comes to the conclusion that 'competitive distortions are most likely to arise in the more intensive forms of agricultural production, notably the pig and poultry sectors' (Commission of the European Communities, 2002: 3).

For pigs, the basic EC Directive 91/630/EC⁴ has been amended in 2001 and requires group housing for sows, minimum floor space per animal, the provision of material for investigation and manipulation, and minimum light intensity and periods. National legislation is considerably above EU level in some countries in terms of minimum floor space, choice of investigation material, cooling facilities (water sprayers), and daylight, as well as floor texture. For example, in Denmark and parts of Germany the space requirement is up to 50% above the EU level, which is close to the optimal level for economically efficient production (Fritzsche, 2002). The cost of extending the minimum space requirements is the most significant among these measures. Fritzsche and the Scientific Veterinary Committee (Commission of the European Communities, 1997) estimate the cost of extending the current minimum space by 41% and 30%, respectively, at about 4% of current production cost. Furthermore, Fritzsche estimates the cost of water sprayers at 0.2% of production costs, investigation material at 0.2-0.8%, and daylight requirements at 0.15%. The Scientific Veterinary Committee (Commission of the European Communities, 1997) estimates total cost of the EU illumination requirement at 0.4% of production costs, compared to an industry minimum of 20 lux for one hour per day. All this shows that the cost of compliance with current legislation even in those EU countries with national standards significantly above EU level is 6% of production cost at maximum.

For chicken kept for meat production (broilers), no animal-specific welfare legislation is currently in force at the EU level, although national legislation and agreements exist in some member states. However, the EU Commission intends to put forward a legislative proposal in 2004, in order to address the problems identified by the work of the Scientific Committee on Animal Health and Animal Welfare (Commission of the European Communities, 2000). The major animal welfare problems identified are mainly based on two factors: the intense and almost exclusive selection in breeding on growth and feed conversion, and extremely high stocking densities (*ibid.*: 110). The Scientific Committee also estimates the cost of compliance with potential legislation on reduced stocking density and the use of lower growth strains. A reduction in stocking density by 22% may cause additional production cost between 4.2 and 5.2%, and a reduced growth rate may add 5.2% of production cost (*ibid.*: 148).⁵

For layer hens, the cost of compliance with existing EU legislation is already significant and will increase in the future. Cage space per layer hen is one of the important factors determining production cost, and from a purely economic point of view 350-400 cm² per layer hen gives the highest income for poultry farmers (Horne and Bondt, 2003). Currently, the EU standard of minimum cage space is 550 cm² per layer hen. This compares to 310 cm² in Russia, China, Japan, and Brazil, and 350 cm² in the United States (Rauch, 2001). In many other countries no specific legislation on animal welfare standards for layer hens exists (Commission of the European Communities, 2002). Furthermore EU Directive 99/74/EC⁶ prohibits the housing of layer hens in conventional cages from 2012 on. After 2012, cages with at least

³ Official Journal of the European Communities (OJ) L 221, 08.08.1998: 23.

⁴ OJ L 340, 11.12.1991: 31.

⁵ This is data for France, which has been chosen as an 'average EU member' in terms of production conditions. Results vary significantly between Northern and Southern member states.

⁶ OJ L 203, 03.08.1999: 53.

750 cm² cage area per layer hen, a perch, nest box, and litter, will be the minimum requirement (so-called 'enriched cages'). The German initiative to prohibit the housing of layer hens in cages after 2006 goes far beyond the EU level and requires the housing of all layer hens in aviaries or other alternative housing systems. Various authors estimate the additional cost resulting from the use of enriched cages compared to the current situation at a significant share of current production cost: Damme (2000) estimates 20%, Horne and Bondt (2003: 23-5), 13%. Blandford et al. (2002) report similar magnitudes from other sources. The housing of layer hens in aviaries instead of conventional cages may add 21% (Horne and Bondt) to 25-50% (Damme) to production costs.

Summarizing the information above it is clear that it is especially in egg production that future cost of compliance with animal legislation in the EU is high, as it will add about 15% or more to production costs. For broilers, this may be a 10% increase, while for pigs it is expected to be significantly lower with strong differences between member states. Due to these significant cost differences, concerns that egg and chicken meat production may be induced to move to countries with lower welfare standards may be well founded. In addition to the high cost of compliance, egg and broiler production are generally organized under an industrial model, i.e. production is not linked to land and is highly concentrated, thus creating considerably more potential for relocation than smaller structured, and more land-based production systems. There is already some evidence of such a shift from the EU to third countries (Blandford et al., 2002: 91-92).

2.2 EU Trade Policies

The potential of relocation of EU production due to animal welfare standards not only depends on the level of cost of compliance, but also on EU external trade policies. For eggs as well as poultry meat the EU is currently applying export subsidies. This will change with the implementation of the Doha Round when export subsidies will be fully abolished. Therefore, export subsidies can no longer be used to compensate for higher animal welfare standards, and cost of compliance would thus directly translate into a reduced competitiveness on world markets. With regards to imports, EU MFN tariffs for eggs and chicken meat are roughly at a level of about 30 to 40% *ad valorem* equivalent and thus still allow for the compensation of more than the compliance cost with animal welfare legislation in the EU. Even if they were reduced by 50% under the current round of trade negotiations in the WTO, the rate proposed by Harbinson (WTO, 2003) for tariffs between 15 and 90% under the tiered reduction formula agreed on by WTO members (WTO, 2004a: Annex A para 28), MFN tariffs would still be above or in line with the cost difference resulting from animal welfare legislation. Nonetheless, the EU is currently importing chicken meat at the MFN tariff level, and any shift of the domestic supply curve to the left caused by compliance cost would lead to lower production and higher imports at the MFN tariff. For eggs in the shell and egg powder, current imports are far below tariff rate quota (TRQ) limits at reduced tariff rates. As there is 15% and more water in the above TRQ MFN tariffs, a rise in production cost would thus result in increasing imports up to the TRQ limit.

Thus, the significant cost of compliance with EU animal welfare legislation for chicken meat and layer hens will potentially affect trade and result in partial relocation of production if no policies are implemented to compensate for these effects. The following section deals with the question of whether and how compensating policies could be justified.

3 Rationales for Compensating Policies

The answer to the question, of whether compensating policies should be taken, depends much on the motivation for the implementation of domestic obligatory animal welfare standards.

Bennett (1995) argues that animal welfare can be considered a public good, as the well-being of animals does not just affect members of society as consumers, but is also an argument in the utility functions of nonconsuming members of society. If one follows this argument, animal welfare could be compared to global environmental goods, as the individual would thus not just care about the animals directly producing the products he or she consumes, but also about the treatment of farm animals in general, and possibly of animals worldwide. If standards for such products differ between countries, this can lead to a suboptimal allocation of resources. Countries with standards that are 'too low' overproduce, and those with higher standards underproduce. Meinheit (1995) shows that trade restrictions can be justified by economic theory as internalizing the costs of providing such global environmental goods as a second best option. Mann (2004) convincingly argues that animal welfare should not be considered a public good. This would stretch the idea of external effects providing a *prima facie* case for government intervention beyond its limits, and would lose much rigor if defined to include psychological external effects in addition to technological effects, which are usually covered in the economic concept of public goods (Black, 2003).

If, on the other hand, one considers animal welfare a private good, there is no reason for obligatory animal welfare standards at all. Products which are produced according to above average animal welfare standards are rivals in consumption (more production of such goods is more expensive) and consumers who do not pay a price premium can be excluded from consumption. And indeed, niche markets for products produced at high animal welfare standards are widely found (Neuland, 2004; Royal Society for the Prevention of Cruelty to Animals, 2004). The only reason for government intervention could potentially be some control over a voluntary labeling scheme, such that consumers' trust

in a label would be sufficient. Of course, in such a case, no compensating policies with respect to internationally traded products would be necessary. However, as Blandford and Fulponi (1999: 411) state, 'the welfare of farm animals can be viewed as ethical arguments of the utility function. However, ethical arguments do not easily fit the common characterizations of either public or private goods.'

Two other rationales of obligatory animal welfare standards can be found. First, ethics can lead to the conclusion that animals have a moral standing and that human beings therefore have certain duties to animals.⁷ If certain duties to animals are considered a justified moral view, it follows that the 'right' level of minimum animal welfare standards needs to be established for all members of society, although this does not provide much guidance with respect to how imports should be treated. Should a society only be responsible for its own production methods, no import policies would be justified. Or if a society were responsible for production methods of all goods it consumes, this would potentially allow for an import ban of products produced below certain animal welfare standards. If society is considered responsible for the consequences arising from the production of goods in third countries, however, it seems equally justified that society should be responsible for the consequences arising from not importing these products. These consequences may, for example, include negative income effects for third country producers. How then, should these effects be weighted?

A second rationale for domestic mandatory animal welfare standards is that the government acts in order to implement 'reflective preferences' of consumers, which may differ from their market preferences (Mann, 2004). Brennan and Lomasky (1984) argue that reflective preferences for some products may be closer to those revealed by voting in the political process than to those revealed in the marketplace. If animal welfare is considered such a good, high animal welfare standards set by the government could be considered a self-binding measure by a society to not follow market preferences.⁸ Like the ethic reasoning above, this approach provides little guidance with respect to the treatment of international trade.

As a conclusion, the treatment of animal welfare as a purely private or a public good seems inappropriate. The ethic as well as the self-binding approach presented above, in contrast, provide a valid rationale for obligatory animal welfare standards. Unfortunately, both rationales for domestic obligatory standards provide little guidance with respect to the application of such standards to traded products. A more pragmatic reasoning is based on the fact that the political aim underlying animal welfare standards may at least partially be undermined if production simply relocates to countries with lower standards (Niedersächsische Regierungskommission 2001; Isermeyer and Schrader, 2003). An additional concern is that the WTO process may be discredited if consumers get the impression that it inhibits, among other things, the development of stricter domestic rules on animal welfare (Swinbank, 2000: 19). These arguments may determine the demand for compensating policy options in the future simply because policy makers will be reluctant to enforce higher animal welfare standards domestically if this causes production to relocate. It seems that the fact that domestic production may be replaced by imports causes more concern than a declining export market share due to reduced international competitiveness (for example, WTO, 2000). Therefore, potential compensating policies explicitly designed to maintain a certain export share are included in the following discussion.

4 Possible Policy Instruments to Compensate for Cost Differences

4.1 Overview

Whatever the justification of compensating policies, this section looks at different policy instruments and evaluates them with respect to i) their potential to achieve the primary aim of avoiding relocation, ii) their impact on the interests of trading partners, iii) their institutional implications, and iv) their current and future compatibility with the WTO framework. Policies analyzed include 1) multilateral agreements, 2) government supported voluntary labeling of animal-friendly imports, 3) obligatory labeling of non-animal-friendly imports, 4) compensation of domestic producers through producer subsidies, 5) tariff differentiation according to product-specific animal welfare level within WTO tariff bounds, 6) tariff differentiation according to product-specific animal welfare level in addition to WTO-bound tariff levels, and 7) import bans. Table 1 displays an overview and assessment of potential instruments organized in rows, with the criteria mentioned above in columns.

⁷ See Sandoe et al. (1997) for an introductory overview and Weikard (1992) for a more in depth treatment of ethical justification of animal welfare measures.

⁸ For a composition of various factors which may lead to the deviation of market and reflective preferences see Birner et al. (2002). For a discussion of the relationship of self-binding actions and individual autonomy see Elster (1979: 36-111).

Table 1: Overview of Potential Instruments for Preventing Relocation of Animal Production Due to Compliance Cost with Domestic Standards

	Effectiveness in preventing relocation	Averse effects on exporting trading partners in combination with high domestic standards? ^a	Institutional implications	Current WTO compatibility	Potential future WTO compatibility	Other aspects
Multilateral agreements	<ul style="list-style-type: none"> • Good for trade with members • Questionable for trade with non-members 	<ul style="list-style-type: none"> • Members: probably not • Non-members: potentially positive effects on noncomplying suppliers 	<ul style="list-style-type: none"> • Mechanisms on mutual recognition 	<ul style="list-style-type: none"> • OK, treatment of non-members unclear 	<ul style="list-style-type: none"> • Potentially more precise rules on treatment of nonmembers 	<ul style="list-style-type: none"> • Feasible only among countries with comparable levels, or at a very basic level of standards
Voluntary/positive labeling	<ul style="list-style-type: none"> • Poor 	<ul style="list-style-type: none"> • Potentially positive effects on noncomplying suppliers 	<ul style="list-style-type: none"> • Certification system for complying imports 	<ul style="list-style-type: none"> • Unclear, but tolerated 	<ul style="list-style-type: none"> • Potential clarification 	
Obligatory/negative labeling	<ul style="list-style-type: none"> • Poor 	<ul style="list-style-type: none"> • Potentially positive effects on noncomplying suppliers 	<ul style="list-style-type: none"> • Certification system for complying imports 	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • Difficult 	
Domestic producer payments	<ul style="list-style-type: none"> • Good with respect to imports as well as exports 	<ul style="list-style-type: none"> • No for noncomplying suppliers if compensation has correct level • Yes for complying suppliers 	<ul style="list-style-type: none"> • Authority to determine the level of payments 	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • Under discussion (Harbinson proposal) 	<ul style="list-style-type: none"> • Domestic price below marginal cost
Tariff discrimination above WTO bound	<ul style="list-style-type: none"> • Good with respect to imports 	<ul style="list-style-type: none"> • No for noncomplying suppliers if tariff has correct level • No also for complying suppliers 	<ul style="list-style-type: none"> • Certification system for complying imports • Authority to set level of tariffs and equivalence requirements 	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • Difficult 	
Tariff discrimination below WTO bound	<ul style="list-style-type: none"> • Good with respect to imports 	<ul style="list-style-type: none"> • No for noncomplying suppliers if tariff has correct level • No also for complying suppliers 	<ul style="list-style-type: none"> • Certification system for complying imports • Authority to set level of tariffs and equivalence requirements 	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • Difficult 	<ul style="list-style-type: none"> • Erosion due to multilateral reduction of bound tariffs
Import ban	<ul style="list-style-type: none"> • Good with respect to imports 	<ul style="list-style-type: none"> • Yes for noncomplying suppliers • No for complying suppliers (potentially positive) 	<ul style="list-style-type: none"> • Certification system for complying imports 	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • Difficult 	<ul style="list-style-type: none"> • Potential overcompensation

^a This assessment is based on the assumption of no comparative advantages in implementing animal welfare standards and does thus not include any effects due to such comparative advantages, which may have different effects on different countries and producer groups.

Source: own composition.

4.2 Multilateral Agreements

Multilateral agreements are one of the three measures proposed by the EU for dealing with the problem of heterogeneous animal welfare legislation in the WTO (WTO, 2000). The basic idea is simple: in a world of uniform or at least equivalent animal welfare standards no trade frictions would occur and no additional policy instruments would be needed. But such agreements are hypothetical, at least for countries with significantly differing states of economic development. Demand for higher animal welfare standards increases with increasing income, and cultural differences play a major role (Fraser, 2001). A multilateral agreement on a level comparable to EU animal welfare standards and including a large number of WTO members is therefore not feasible. At most, for country groups which put similar value on animal welfare rules, such agreements are conceivable. The European Convention for the Protection of Animals Kept for Farming Purposes of 1976 is such an example and although the Council of Europe includes only 45 countries from a relatively homogeneous region (in 1976), the Convention sticks to general principles which are subject to very different interpretations in different signatory states. Although such multilateral agreements are widely considered to play an important role in improving animal welfare worldwide (Knierim and Jackson, 1997), they do not cope with the most significant trade problems - those resulting between countries with especially high and low animal welfare standards. Finally, high domestic animal welfare standards combined with a multilateral agreement among only a few countries may have a positive effect on non-members; if their products are not banned they could gain from improved competitiveness.

More than 200 multilateral agreements on environmental issues already exist, but the compatibility with the WTO system for those agreements, which include trade measures, is not completely clear. Problems are especially expected if a member country of a multilateral agreement would take trade measures against any non-member country. No dispute has arisen so far, and the WTO Committee of Trade and the Environment has established basic principles which should be taken into account in case of such a dispute (WTO, 2004b).

4.3 Labeling

A second option proposed by the EU (WTO, 2000) is the labeling of products according to the animal welfare standard at which they are produced. Two options exist: voluntary labeling and obligatory labeling. Voluntary or positive labeling is already practiced today for organic agricultural products, but also for products which are produced above the legislative minimum standards of animal welfare, for example under the German Neuland and the British Freedom Food program (Neuland, 2004; Royal Society for the Prevention of Cruelty to Animals, 2004). Labeling aims at dealing with the market imperfection of asymmetric information. As the animal welfare standard in the production process is a credence good, the market would tend to provide low qualities only if no market segregation based on credible labeling would take place.⁹ This is where government intervention can come in: if private sector activities do not lead to the establishment of a transparent and credible labeling system, the market outcome can be improved by government involvement in protecting a label and monitoring the certification and auditing process. This has also been proposed for the current labeling of animal-friendly products in Germany (Niedersächsische Regierungskommission, 2001: 49).

A major drawback of the voluntary labeling approach is its relatively low degree of effectiveness with respect to its primary aim of preventing relocation. This low effectiveness stems from two factors. First, additional product information at the point of sale affects consumption decisions only to a limited degree. Many reasons, such as information overload, repression, and custom, contribute to market preferences deviating from reflective preferences (Birner et al., 2002; Blandford et al., 2002:81). Second, the high degree of processing and out-of-home consumption for many products renders labeling ineffective, as it is difficult to communicate any value added from high animal welfare in highly processed products which consumers usually do not perceive as linked to animal production, like cookies. For example in Germany, only about 40% of egg consumption is bought as eggs in shell by households (ZMP, 2004: 100). Tacken et al. (2003: 31-37) report from interviews with buyers on the market for egg products like fluid egg or egg powder, that the housing system for hens is of minor importance as a buying factor and is expected to remain so in the future.

An alternative to voluntary labeling is obligatory or negative labeling, under which all products which do not fulfill a certain standard need to be labeled. Obligatory labeling can be expected to be more efficient with respect to its primary aim, as more consumers may be prevented from buying a product by a label which states 'not produced according to EU animal welfare legislation' than by the simple nonexistence of a positive label.

⁹ Akerlof (1970) first described this market result for the second hand car market.

From an institutional point of view, labeling requires a certification process for those eggs which are to be marketed as animalfriendly eggs in the high standard country. Such certification must operate in third countries as well. The requirements and difficulties of such a process are discussed below in the tariff discrimination section.

From a WTO point of view, the status of labeling based on voluntary process standards like organic production or animalfriendly produced goods is unclear. The TBT Agreement is ambiguous on this issue.¹⁰ The WTO secretariat, in an analysis of the negotiating history, comes to the conclusion: 'The negotiating history suggests that many participants were of the view that standards based inter alia on PPMs [Process or Product related Measures] unrelated to a product's characteristics should not be considered eligible for being treated as being in conformity with the TBT Agreement' (WTO, 1995a: 2). Nonetheless, voluntary or positive labeling is at least tolerated and has not been subject to the dispute settlement process even in cases of government involvement such as the international certification of organic products.

This would probably be different with obligatory or negative labeling. The GATT Article I on Most-Favoured-Nation-Treatment states that 'like products' need to be treated equally, independent of their origin. In addition, GATT Article III states that imported products have to be treated equally to 'domestic like products' (WTO, 1995b). With respect to the 'like products' criterion, the negotiation history of the GATT suggests that 'products which are intrinsically comparable will...be considered alike, regardless of differences in the manner in which they have been produced' (Scott, 1999: 2). Therefore, negative labeling, e.g. of imported eggs from battery production systems in contrast to domestic eggs from alternative husbandry systems, is in conflict with the legal provisions of the GATT. Article XX of the GATT on general exceptions offers a set of measures which would be necessary, among others, to 'protect public morals, ...animal...live or health.' This Article has never been used as a basis for measures to protect animal welfare standards, so no precedents exist. Various interpretations of Article XX come to the conclusion that the coverage of animal welfare measures under Article XX is ambiguous, but not impossible (Blandford et al., 2002: 95-96; Swinbank, 2000:12).

4.4 Domestic Compensation Payments for Producers

As a third policy measure, the EU has proposed compensation payments to domestic agricultural producers and several authors have argued for the implementation of such payments by the EU (Isermeyer 2001; Isermeyer and Schrader, 2003). Without a doubt, such payments would be effective with respect to their primary aim, preventing relocation of production, if the level of compensation payments equals compliance cost with animal welfare legislation. They would even enable a country to maintain its exports under higher animal welfare standards, in contrast to other measures which impact only the level of imports.

It has been argued that compensation payments could harm third country suppliers of products that meet high animal welfare standards (Grethe, 2001: 23). This is because such producers would need to satisfy standards comparable to those of the importing country, but would not be eligible to receive payments to cover the extra costs of doing so. This concern is shared by trade representatives of third countries (GTN, 2003). It is important to note that it is not automatically the case that third country suppliers produce at lower animal welfare standards than producers in the EU. Although legislation is more strict in most countries, natural and economic conditions, especially in developing countries, can sometimes lead to more animal-friendly husbandry systems than in the EU. An example is the grazing of cattle in large parts of Latin America in contrast to the intensive cattle production systems in closely confined pens with slatted flooring common in the EU. Also in intensive animal production systems, climatic conditions can sometimes lead to more animal-friendly systems in third countries. For example, chickens for meat production in Brazil are typically kept in open stables at 12-15 animals per square meter (Grote et al., 2001: 88), whereas typical German husbandry systems consist of closed stables with about 20 animals per square meter. Thus, third countries may have a comparative advantage in providing high animal welfare standards based on natural and economic conditions stemming from climate or low wages in labor-intensive husbandry systems.

Another problem with compensation payments is that the product price does not fully reflect the marginal cost of production. This leads to a distorted marketed quantity above the economic optimum, and related consumer and producer welfare losses. Animal welfare would be partly paid by taxpayers instead of consumers of the respective products. From an institutional point of view, compensatory payments would require a process of determination of the cost of compliance.

Compensation payments for applying high animal welfare standards do not explicitly conform to current WTO legislation. Rules on domestic support are laid down in the respective parts of the Uruguay Round Agreement of Agriculture (URA)

¹⁰ See Grote et al. (2001: 24-28) for a more detailed discussion.

(WTO, 1995b). Subsidies, which are explicitly excluded from any reduction commitments and therefore are in long term compliance with WTO legislation, are defined in the so-called green box (Annex 2 to the URA). Annex 2 defines some general requirements for green box policies, for example they must have 'minimal trade-distorting effects,' must be financed from 'publicly funded government programme...not involving transfers from consumers,' and must 'not have the effect of providing price support.' As these general rules leave much room for interpretation, a list of potential policies and respective criteria to be fulfilled for eligibility with the green box is provided. Payments under environmental programs are explicitly included with the requirement that 'the amount of payment shall be limited to the extra costs of loss of income involved in complying with the government programme' (Annex 2, para 12(b)). No reference is made in Annex 2 to animal welfare, and, although payments could be designed such as to meet the general rules of the green box, this seems to imply that compensation payments for animal welfare standards do not currently fall in the green box. This appraisal is based on the very general nature of the basic rules for green box policies, and the long and detailed policy list provided in Annex 2. Other authors support this conclusion as well (Swinbank, 2001; Blandford et al., 2002: 93). Many NGOs are calling for explicit inclusion of animal welfare payments in the green box (Stevenson, 2000). This has also been suggested by the EU (WTO, 2000). Swinbank (2001: 18-19), on the other hand, rejects such an inclusion due to the disadvantage which results for third country producers complying with the standard.

In spite of the major drawbacks of compensation payments described above, the inclusion of such payments in the green box seems to be the most likely approach to be agreed upon in the current Doha Round negotiations. It has even been included in the proposal for 'modalities' for the liberalization for agricultural trade put forward in March 2003 by the Chairman of the negotiating group on agriculture, Stuart Harbinson (WTO, 2003). Although this element is not part of the Framework for Establishing Modalities in Agriculture (WTO, 2004a) which only includes the succinct sentence that 'non-trade concerns... will be taken into account.'

But even without inclusion of such payments in the green box, countries can use their bound total Aggregate Measure of Support (if any) or their scope for *de minimis* measures, to install such payments without resorting to the green box. Actually, the EU has recently explicitly included compensatory payments for compliance with animal welfare standards in its list of policies, which may be cofinanced by the CAP budget under the so-called second pillar of the CAP (Commission of the European Communities, 2003).

4.5 Tariff Discrimination

A further instrument to prevent relocation of production due to cost of compliance with animal welfare standards is tariff discrimination (Grethe, 2001; Blandford et al., 2002). 'Animal welfare tariffs' would be charged only on products that do not comply with the animal welfare standards of the importing country or equivalent standards. Grethe (2001) highlights that such tariff discrimination would address the problems arising from compensatory payments; third country producers which comply with equivalent standards would not be disadvantaged and domestic prices would reflect marginal cost. A major drawback of such an approach, however, are the severe institutional requirements.

First, institutions and procedures must be established in order to determine the level of tariffs and the equivalence of different animal welfare standards in different countries. This process is of course in danger of being captured by rent-seeking domestic producer interests, which would be interested in having the cost of compliance (and thus resulting tariff levels) as well as equivalence requirements assessed as high as possible. To cope with this problem, the process of determining cost of compliance and equivalence requirements must be allocated to an institution which is independent from producer interests. Furthermore, some international involvement or even surveillance would be required. Potentially the entire process could be located at an international institution. For the determination of equivalence, problems arise from the difficulties of unambiguously assessing different husbandry systems with respect to their degree of animal friendliness. For example, the question of whether a layer hen husbandry system is more or less animal friendly if it provides 30% more floor space than enriched cages in the EU yet has no nests, perches, or litter, cannot be answered unanimously by ethologists. Therefore, any tariff discrimination needs to be limited to significant differences in animal welfare standards on which some consensus can be reached.

Second, a process of determining compliance with domestic or equivalent standards of third country producers must be established. The international certification of organic products is an example for such a process. Like animal welfare standards, organic standards are mainly process standards. In some countries, certification is completely in the hands of private institutions. In others, like the EU, the procedure is organized in two steps of certification by private certifiers and

accreditation by government-controlled accrediting institutions (EU Directive 2092/91).¹¹ It can be observed that, after many years of experience, the system is workable. That is, the compliance with standards is ascertained at a relatively low cost, usually less than 1% of product value (Grethe, 2001: 25).

Currently, tariff discrimination according to the animal welfare level adhered to by producers clearly conflicts with WTO legislation. This is because products produced at different animal welfare standards are still considered 'like products' and any discrimination would conflict with Articles I and III of the GATT (see above). In addition, maximum tariff levels for all agricultural products have been bound with the implementation of the Uruguay Round. Any 'additional' animal welfare tariff would conflict with these tariff bindings. Blandford et al. (2002) propose an alternative approach in which bound tariffs for conforming imports are established below WTO bound rates, so that a margin of tariff preference is provided. This would have a comparable economic effect and applied tariffs would not conflict with WTO bindings. Still, such tariff discrimination would conflict with GATT Articles I and III. Furthermore, tariff discrimination below WTO bounds would be subject to erosion in the course of further multilateral tariff reduction.

4.6 Import Ban for Noncomplying Products

As a last option, although more a theoretical one due to the frictions which would potentially arise in the WTO, countries which apply high domestic animal welfare standards could ban imports which do not comply with domestic or equivalent standards. An import ban would of course be efficient in preventing relocation of production. Domestic producers may be even over compensated compared to other measures, as those noncomplying third country suppliers which could compete even in case of compensation payments or tariff discrimination would be excluded from the market. An import ban, however, does probably not comply with WTO legislation unless Article XX were changed, which is currently not on the agenda and probably not an option in the future (see above). The EU explicitly states that it does not aim at an import ban for products which do not comply with domestic animal welfare standards (WTO, 2000).

5 Conclusions and Outlook

The future cost of compliance with obligatory animal welfare standards in the EU for poultry and eggs are significant, up to 20% of production costs. Without accompanying policies, this will lead to lower EU exports and higher EU imports of these products, compared to a situation without such standards.

Based mainly on the perception that the political aim underlying animal welfare standards may at least partially be undermined if production relocates to countries with lower standards, various compensating policies are currently under discussion. Some of these policies, such as multilateral agreements and labeling, may be supporting, but cannot comprehensively prevent relocation. In contrast, compensatory payments to producers are effective and already implemented by the EU. Although their potential inclusion in the green box seems the most likely approach to be agreed upon to deal with different animal welfare standards in the WTO, compensatory payments have major drawbacks. First, they disadvantage third country producers which comply with equivalent standards and receive no payments. This problem becomes the more distinct the higher the comparative advantage of third country producers in providing a high degree of animal welfare. Second, compensatory payments lead to the domestic market price being below marginal cost of production. Therefore, tariff discrimination may be a better alternative as it would avoid both problems. A major drawback of tariff discrimination is its severe institutional requirements and its lack of WTO compatibility.

In parallel to the options for public policies discussed in this article, private industry initiatives may evolve quickly. For example EurepGAP has recently established the Integrated Farm Assurance scheme under which complete farms, including animal production are certified. EurepGAP standards for animal production in third countries include animal welfare requirements comparable to those in the EU (EurepGAP, 2004). If such schemes covered high shares of EU imports, the effect could be equivalent to a legislative import ban. Such schemes would not conflict with WTO rules, as they are purely private quality assurance schemes, nor would they require intergovernmental coordination.

Thus some questions arise for future research. First, the quantification of potential transaction costs involved in different policy options described above would be an important contribution to the discussion. Second, it would be interesting to analyze pros and cons of public solutions presented here compared to the potential development of private initiatives like EurepGAP.

¹¹ OJ L 198, 22.07.1991: 1.

A third area for future research is the assessment of the quantitative magnitude of the degree of relocation which can be expected under different scenarios of the level of animal welfare standards as well as accompanying policies. Such questions could be analyzed based on economic equilibrium models which allow for product discrimination according to animal welfare standards in production as well as in consumption. Studies at hand remain scarce and do not cover the topic comprehensively. Rau (2003) simulates potential relocation of German and European egg production due to the ban of conventional cages by shifting constant elasticity egg supply functions leftward to reflect cost of compliance, yet this model does not include product differentiation in consumption, nor product differentiation in third country production. Horne and Bondt (2003) analyze potential relocation of production of eggs under the EU requirement of enriched cages by increasing capital cost in a general equilibrium framework and conclude that 'the GTAP model gives an impression of the impact of increased production cost due to improvement of animal welfare' (ibid.: 40). This, however, seems premature, as no product differentiation at the consumption side is modeled (thus the only buying criterion for consumers are prices), and any product discrimination in third countries (for example Brazilian producers able to produce eggs either at EU-equivalent or at lower animal welfare standards) is neglected. Comprehensive depiction of substitution possibilities between products produced at high and at low animal welfare standards in consumption as well as in production for those countries with low domestic minimum standards, seems indispensable for a comprehensive analysis. Next to the empirical foundation of substitution parameters, the empirical foundation of potential shifts in demand due to decisions at the industry level, e.g. the announcement of major Dutch retailers to renounce the sale of eggs from cages (Lebensmittelzeitung, 2004), would be a challenge in comprehensively modeling the effects of animal welfare standards and accompanying policies on international trade.

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