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A Trade Regime for Sub-National Exports Under the Agreement on the Application of Sanitary and Phytosanitary Measures

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Introduction

International trade can be a significant factor in the spread of diseases from one region of the world to another. As such, efficacious international movement controls on potential disease spreading entities such as people, animals, plants or products from plants and animals is a critical component of good disease management. Collectively, in international trade law these policies are known as sanitary and phytosanitary (SPS) measures. Many of these controls are implemented based on national borders as they are convenient separators of government responsibility. While governments have a legitimate obligation to prevent disease entry, spread and establishment in their country, they are also frequently pressured to utilize health regulations as disguised trade barriers to provide protection to their national producers from international competition (Kerr, 2004). To prevent this, international efforts were undertaken to promote measures being applied only when there is a scientific justification. One of the first steps taken was to create international expert bodies that could bring together technical expertise from around the world to form recommendations regarding what would constitute good scientific disease management practices. These included, but were not limited to, disease-related trade restrictions. Effective enforcement, however, was difficult as the international institutions involved lacked a binding dispute settlement mechanism (Kerr, 2004).

As governments increasingly agreed to constrain their ability to utilize traditional protectionist measures, such as tariffs and quotas, through consecutive negotiating rounds at the General Agreement for Tariffs and Trade (GATT), illegitimate barriers to trade, such as SPS measures being applied when not scientifically warranted, were seen as a rising problem in international trade relations. Members decided to negotiate an agreement within the GATT, the precursor to the World Trade Organization (WTO), which would govern the use of SPS measures, allowing Members to enact them but only to the extent necessary to protect human, animal or plant health. The significance of having an agreement on the application of SPS measures in the newly created WTO was that it would now be subject to the WTO's binding dispute settlement procedures, forcing governments to abide by the rules agreed upon or face retaliation instead.

In the negotiated agreement, one provision is that countries should be able to export from uninfected regions of their country if they could be effectively segregated from their infected counterparts. This marked a departure from traditional approaches to SPS measures in which nation-wide bans from the infected country were the norm. Being able to export from non-infected regions can have significant economic benefit for a large exporting nation (such as Canada) that could easily experience a localized, controlled outbreak. However, as accepting imports from sub-national areas is a novel approach to import management, practices and strategies to create regions with a distinct disease status, as well as administrative procedures to recognize these regions, are still the subject of negotiation. Serious consideration of this issue has been taking place at the WTO for several years but little progress has been made. Canada is also beginning to study how it could implement a domestic regionalization strategy in the event of a disease outbreak. In addition to exploring why recognizing sub-national

disease regions can be beneficial, this paper models the economic implications of sub-national disease regions for international trade and domestic policy and summarizes the debate at the WTO surrounding recognition by trading partners of these regions and reports on the steps Canada has taken to implement its international obligations.

Canadian Agricultural Trade

The Canadian agriculture sector is very trade dependent – while agriculture accounts for only about 2.2 percent of Canada's GDP, it accounts for about ten percent of its total exports. For example, in 2001, Canada's net exports of products such as beef and pork were over 40 percent of total production (Serecon Management Consulting Group, 2002). The United States is Canada's most important trade partner as about 60 percent of agri-food exports are destined for the US market; other important markets include the EU, Japan, Mexico, China, Hong Kong, Taiwan, Korea and Brazil (Yeung et al., 2005). Canada's expanding export markets have provided significant benefits for the Canadian livestock industry, but it also carries with it considerable economic vulnerability. The degree of this vulnerability was made abundantly clear in Canada when BSE was discovered in a Canadian cow. Within days of the May 20th, 2003 announcement that a Canadian animal tested positive for BSE, 34 countries imposed complete or partial bans against imports of Canadian cattle and beef and the political process of having them lifted has been extremely slow and arduous. The Canadian cattle industry experienced losses estimated at over \$6 billion (CACH, 2004) and now recognizes the impact disease outbreaks can have on its ability to export and the dramatic effect on profitability. The industry also realized the importance of international trade law in regulating the use of border measures and that stronger international rules could reduce the risks border measures can represent. Although two of Canada's most important markets are its NAFTA partners, the US and Mexico, improvements using NAFTA institutions are unlikely (Kerr, 2001) and, as a result, this paper focuses on initiatives that would take place in multilateral rule-making bodies.

The SPS Agreement and International Disease Control

During the negotiation of the Uruguay Round, parties to the General Agreement on Tariffs and Trade (GATT) recognized the importance of creating rules to ensure trade barriers put in place to protect human, animal and plant health were not used as illegitimate barriers to trade. The result was the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). The SPS Agreement states Members can apply SPS measures to protect human, animal or plant life or health but only to the extent necessary as determined by scientific principles. These measures must not arbitrarily or unjustifiably discriminate between WTO Members where identical or similar conditions exist, including compared to their own country. The purpose is to prevent measures from being applied in a manner that constitutes a disguised restriction on international trade (WTO, 1994).

The SPS Agreement does not dictate the sanitary and phytosanitary (SPS) measures a country should apply but states that Members must follow international

scientific guidelines in drafting and implementing their import regulations. The SPS recognizes three international standard setting bodies as the relevant international experts.¹ The SPS Agreement calls on countries to harmonize their SPS measures on “as wide a basis as possible” by basing them on international standards, guidelines or recommendations. Members have the latitude to use the most efficacious policy instrument suitable for their situation when adhering to the international standards. Hence, the concept of “equivalence”, whereby members accept alternative approaches as providing the same level of protection, becomes of central importance.

The SPS Agreement obligates countries to base their SPS measures on the risk posed and evaluate these based on available scientific evidence and the costs faced in the event of a disease outbreak. When determining the appropriate level of protection that should be provided, Members are to include minimization of trade disruption as one objective. A central provision of the Agreement states, “Members shall ensure that [SPS] measures are not more trade-restrictive than required to achieve their appropriate level of sanitary or phytosanitary protection, taking into account technical and economic feasibility” (Article 5, par 6, Agreement on the Application of Sanitary and Phytosanitary Measures).

Although controlling disease movement into a country is a laudable goal of national governments, border measures can also be captured by protectionist interests (Kerr, 2004). While the most efficacious disease management approach would be based solely on the dynamics of the disease, divisions of government jurisdiction often means national borders are utilized extensively for disease management. While national borders can be a convenient way to implement disease management protocols, they are often mere lines drawn on a map that do not correspond with a science-based disease management strategy². In large, geographically diverse countries such as Canada, a particular disease outbreak may be confined to a very small area or be unable to survive in others³ but countries have traditionally based their risk analysis for the purpose of creating import regulations on a country as a single geographic unit. This can result in significant economic costs without any increased efficiency in controlling the spread of a disease (Loppacher and Kerr, 2005). This was recognized when the SPS Agreement was being drafted and provisions regarding evaluations based on sub-national areas were created.

Regionalization in the SPS Agreement

In recognition that national boundaries may be inappropriate devices to manage the spread of disease and that diseases may be localized to sub-national areas,

¹ The international standard setting bodies are the Codex Alimentarius Commission for standards related to human health, the World Animal Health Organization (originally known as the Office International des Epizooties or OIE) for standards related to animal health and diseases, and the International Plant Protection Convention (IPPC) for standards related to plant health and diseases.

² International boundaries may have an impact on disease spread if it corresponded to a natural barrier such as a mountain range which constrain animal movement or a very large body of water such as an ocean. This is not the case with the border, for example, between Canada and the US.

³ For example, there may be areas of cold climate where disease bearing pests cannot survive.

countries agreed to include the concept of ‘regionalization’ in the SPS Agreement. Regionalization allows countries to have a different disease status for different areas within their borders. Thus, if an outbreak occurs in a country and it can be controlled and localized to specific areas, constraints on international trade need only apply to products originating from the actual area(s) affected rather than the entire country. This is enshrined in Article 6: Adaptation to Regional Conditions, Including Pest- or Disease-Free Areas and Areas of Low Pest or Disease Prevalence. Article 6 states that Members are to adapt their SPS measures to the conditions of the exporting area, whether it is part or all of a single country or several countries. These areas should be evaluated based on the prevalence of diseases or pests, the eradication and control programmes present and the criteria and recommendations from relevant international organizations. Areas can be defined based on geography, ecosystems, epidemiological surveillance and effectiveness of SPS controls. Exporting members have the obligation to provide necessary evidence to support claims of the disease status of an area, and demonstrate that they are likely to remain disease-free or have low disease prevalence.

The concept of regionalization was included in the SPS Agreement because of the significant economic benefits that could be gained from its application. After a disease outbreak, when exports are restricted from only a small area of the country rather than the whole, welfare gains from trade are not completely eliminated, although they will likely be reduced. Both producers in the exporting country and consumers in the importing country are better off.

Economic Analysis of Applying Regionalization

The economic effects of allowing sub-national regions of exporting countries to be designated as having a sufficiently low probability of a disease outbreak or occurrence that trade partners will accept imports from the region can be illustrated using a multiple market, partial equilibrium model. In Figure 1, the market in the Exporting Country is divided between an area where a disease outbreak has occurred in Panel A (“Infected Area”) and an area where a disease outbreak has not transpired in Panel B (“Non-Infected Area”). For the moment it is assumed that the Infected Area is determined by veterinary criteria and not by pre-existing sub-national administrative units, such as provinces or states, in the Exporting Country. This assumption will be dealt with in some detail in subsequent discussions. Prior to a disease outbreak, both the Infected Area and the Non-Infected Area are export competitive in the international market. Panel C depicts the “Rest of the World” which has trade relations with the Exporting Country.⁴ This model does not take into account the added complexity of multi-product exports⁵, or capacity constraints that may arise in the exporting country when borders are closed.⁶

⁴ All countries in the “Rest of the World” are assumed to have the same sanitary or phytosanitary regime for the product in question and, thus, in this sense can be treated as a single market.

⁵ Such as exports of live animals and meat.

⁶ Such as capacity to slaughter animals that can no longer be traded.

In the absence of imports from the Exporting Country, supply in the Rest of the World is depicted as S_{row} in Figure 1. Demand in the Rest of the World is D_{row} . If products are available to the Rest of the World at any price lower than P_1 , it will be willing to import as long as products entering its customs territory comply with its sanitary or phytosanitary regulations. At any price above P_2 in the Exporting Country, product will be offered for export.

As P_1 and P_2 diverge, there is an opportunity for trade between the Exporting Country and the Rest of the World. In the Panel C of Figure 1, S_T denotes the total supply in the Rest of the World when trade with the Exporting Country is not restricted. S_T is comprised of domestically produced products originating in the Rest of the World, S_{row} , to which imports are added. Thus, the market clears in the Rest of the World where S_T equals D_{row} . The price in the Rest of the World and the Exporting Country is P_0 .⁷ Total consumption in the Rest of the World is Q_{row}^5 – which is comprised of Q_{row}^1 produced domestically and imports of Q_{row}^5 minus Q_{row}^1 . Prior to a disease outbreak, imports originate in both areas of the Exporting Country. This is depicted in Panel C where, at any price imports from the Non-Infected are equal to the horizontal distance between S_{row} and $S_{row}+S_{nia}$. Similarly, imports from the (not yet) Infected Area are equal to the horizontal distance between $S_{row}+S_{nia}$ and S_T . Hence, at P_0 imports from the Non-Infected area are equal to Q_{row}^3 minus Q_{row}^1 (and equal to Q_{nia}^2 minus Q_{nia}^1 of exports in Panel B), while imports from the (not yet) Infected Area are equal to Q_{row}^5 minus Q_{row}^3 (and equal to Q_{ia}^2 minus Q_{ia}^1 of exports in Panel A).

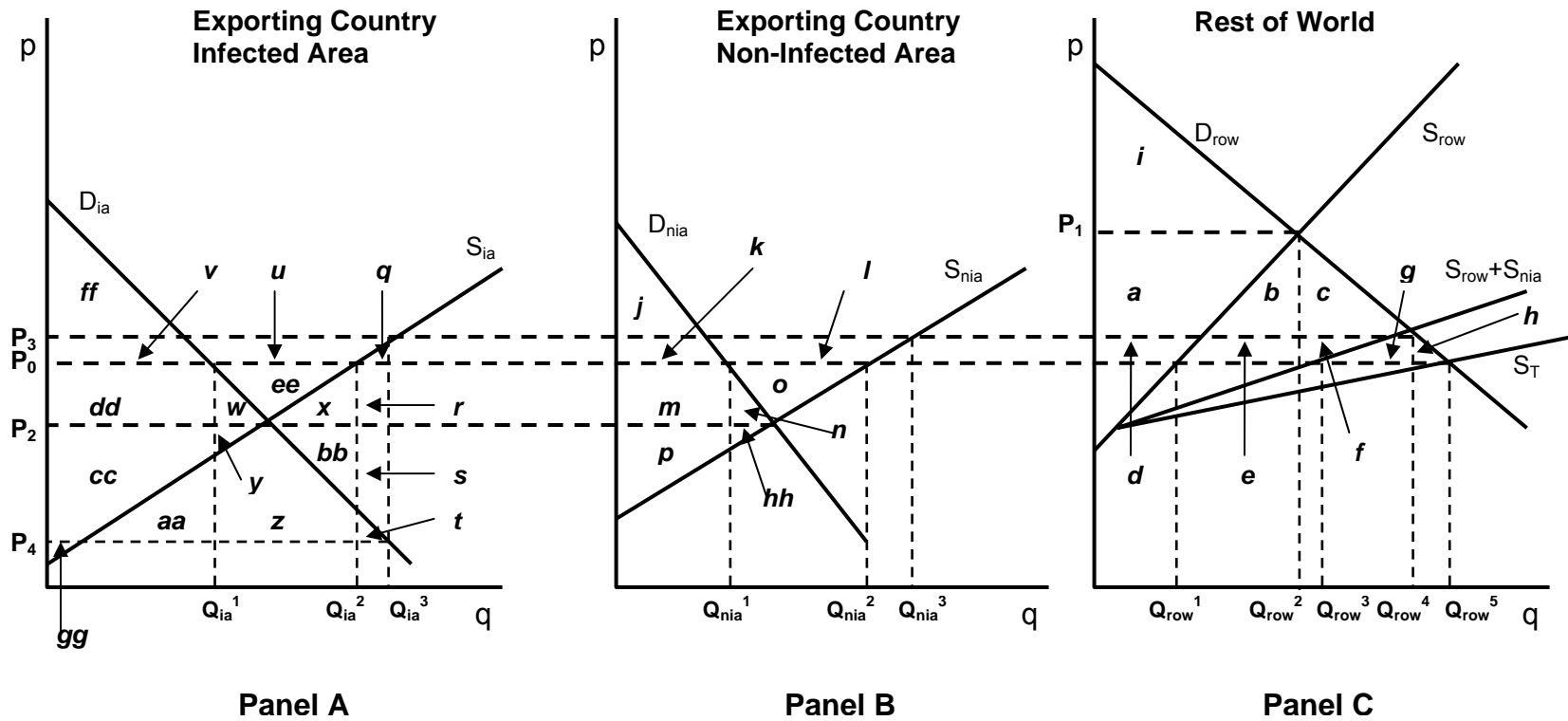
In the period prior to a disease outbreak, the Exporting Country's total welfare is the sum of the welfare in its two areas. The producer surplus in the (not yet) Infected Area is **gg + cc + y + dd + w + ee** and the consumer surplus is **ff + v**. In the Non-Infected Area the producer surplus is **p + hh + m + n + o** and the consumer is **j + k** (giving a total welfare in the Exporting Country of **gg + cc + y + dd + w + ee + ff + v + p + hh + m + n + o + j + k**).

Now, assume that an outbreak of a disease occurs in the Infected Area and not in the Non-Infected Area. For the moment, assume that this disease is not directly harmful to human health⁸ but the tradable product will act as a vector for the disease creating a risk of transfer to other areas that are disease-free, either domestic or foreign. As a result, importers in the Rest of the World are allowed to embargo imports under the WTO SPS Agreement.

⁷ Transportation and transaction costs are assumed to be sufficiently small to be ignored.

⁸ Or that the risk to humans can be reduced to acceptable levels through relatively low cost procedures. An example might be the removal of “specified risk materials” such as the brain and spinal cord among others in the case of *Bovine Spongiform Encephalopathy* (BSE). Foot and mouth disease is an example of a disease where the risk to humans is minimal but most tradable products represent a risk to animals in disease-free areas. The case of a direct threat to human health will be dealt with later in the paper.

Figure 1 – Segregated Domestic SPS Markets and International Trade



If sub-national regions cannot be designated as disease-free then all imports from the Exporting Country will be embargoed whether they originate in the Infected Area or not. As a result, both areas of the Exporting Country move to their autarky equilibrium with price declining to P_2 .⁹ In the Infected Area there is a decline in producer surplus from $gg + cc + y + dd + w + ee$ to $gg + cc + y$ and an increase in consumer surplus from $ff + v$ to $ff + v + dd + w$. The net loss in welfare in the Infected Area is ee . In the Non-Infected Area, producer surplus declines from $p + hh + m + n + o$ to $p + hh$. There is an increase in consumer surplus from $j + k$ to $j + k + m + n$. As a result, the net loss in welfare in the Non-Infected Area is equal to area o . The welfare loss to the Exporting Country arising from the disease outbreak and the resultant trade embargo is $o + ee$.

It is important to point out that if the Exporting Country wishes to compensate its producers, there is no “incentive-based” reason for a particular policy design. The Exporting Country can choose to compensate its producers in ways that do not distort markets – for example, direct transfers to support producers’ income. If the Exporting Country chooses to support its producers in other ways, by supporting the price for example, it will be of no consequence from the trade perspective or the domestic management of the disease. As will become clear, when the case of sub-regional areas being allowed to export is discussed, there are important incentive considerations that will have to be considered in domestic policy design in the Exporting Country.

In the case of the import embargo, the effect on the Rest of the World can also be observed. If imports are embargoed, the Rest of the World moves to a situation of autarky. Price increases to P_1 and there is a decrease in consumer surplus of $a + b + c$ and increase in producer surplus of $d + a$.¹⁰

Now assume that sub-national regions can be declared disease-free when there is a geographically limited disease outbreak in the Exporting Country. Also assume, for the moment, that domestic policy initiatives in the Exporting Country can contain the disease within the Infected Area to the satisfaction of authorities in the Rest of the World and, thus they will be willing to allow imports of product originating in the Non-Infected Area. In addition, also assume that the Infected Area can be isolated at no additional budgetary cost.

⁹ The analysis has been deliberately simplified by having the autarky price be the same in both the Infected Area and the Non-Infected Area. This means that there is no incentive for product to move between the two areas of the country. This simplification is made so that the international effects can be concentrated upon – there is no domestic policy question relating to putting measures in place domestically to prevent the movement of products from the infected area to the non-infected area. As depicted there is no economic incentive to move products between the two areas of the country. This simplification does not materially alter the results as far as the trade effects and trade policy are concerned but it simplifies the exposition considerably. The Exporting Country may still wish to put in place policies to contain the disease within the Infected Area for domestic policy reasons but exports from the entire country will still be embargoed.

¹⁰ This was the gain that some American producers expected from the closure of the US market to Canadian product as a result of BSE and why organizations such as R-CALF were so tenacious in their attempts to prevent the border from re-opening. For a discussion of the North American BSE case see (Loppacher and Kerr, 2005).

Imports from the Infected Area are no longer allowed into the Rest of the World market. As a result the supply curve in the Rest of the World will shift from S_T to $S_{row}+S_{nia}$, price in the Rest of the World increases to P_3 , which becomes the price received by producers in the Non-Infected Area. The Infected Area would move to its autarky position with price declining to P_2 . There would be an increase in producer surplus equal to $k + l$ in the Non-Infected Area which is partially offset by a decline in consumer surplus equal to k , leading to a net increase in welfare of l . As in the previous case, welfare declines by ee in the Infected Area. Again, producers suffer a decline in surplus equal to $dd + w + ee$.

In the Rest of the World, producer surplus increases by d while consumer surplus declines by $d + e + f + g + h$, yielding a welfare decrease of $e + f + g + h$. When this is compared to the case where no sub-national regions are allowed, it is easy to see why producers in the Rest of the World will work against allowing sub-national regions to export – they forgo producer surplus equal to a .¹¹

It is now necessary to return to the assumption that isolation of the Infected Areas is costless, or at least can be accomplished without significant increases in monitoring and enforcement costs. This assumption is unrealistic due to the incentives that are created to smuggle product from the Infected Area to the Non-Infected Area. With the Non-Affected Area allowed to export, there is a price differential equal to P_3 minus P_2 between the Infected Area and the Non-Infected Area. Therefore, if producers in the Infected Area can move and sell their product in the Non-Infected Area, they can obtain the premium associated with P_3 .¹² While smuggling¹³ may take additional resources to avoid detection, smuggling costs can increase costs for producers in the Infected Area by anything up to the difference between P_3 and P_2 and smuggling will be profitable. It could be argued that increased enforcement of internal restriction on the movement of product could eradicate smuggling, but economic studies of smuggling suggest that its total elimination is seldom possible – the usual optimizing result is some positive level of smuggling (Saba et al., 1995). In this case, however, smuggling must be totally eliminated because the movement of even one unit of the infected product could potentially be enough to lead to the infection of the disease-free area, leading to a loss in the ability to export. The result would be to move to the case where sub-national

¹¹ The SPS rules also allow temporary embargoes on a national level until the policy initiatives in the Exporting Country can be assessed as to their efficacy. Producers in importing countries, hence, initially gain area a and well as d but will lose a once exports can resume from the Non-Infected Area. They have an incentive to lobby for delay. This may explain why it often takes a long time for sub-regional areas to regain their “fit to export” status from importers when there are lapses in sub-regional areas. See Kerr et al., (2005) for a discussion of the issues associated with delaying the opening of borders in the wake of a disease outbreak.

¹² Note, there is no need for producers to be the smugglers. If there is an arbitrage opportunity independent smugglers could buy product at the low price in the Infected Area and smuggle the product to the Non-Infected Area to sell at the high price. As long as they can offer producers P_2 or higher smuggling can be expected. For convenience we assume that producers in the Infected Area engage in smuggling.

¹³ We will define smuggling as the movement of product contrary to some specified rules prohibiting such movement. This is a very broad definition and means smuggling is any kind of movement of product that should not be occurring, whether or not this is done for financial gain from arbitraging markets.

exporting regions are not allowed – the total embargo of imports by the Rest of the World. The alternative is to design policies to remove the incentive to engage in smuggling.

Removing the incentive to smuggle requires the prices in the Infected Area and the Non-Infected Area to be equalized, which can be accomplished through a deficiency payment policy. The Food and Agriculture Organization (FAO) of the United Nations' Animal Health Manual for the Preparation of Foot-and-Mouth Disease¹⁴ Contingency Plans states:

Failure to pay adequate and timely compensation will seriously compromise [foot and mouth disease] eradication campaigns by causing resentment in communities and a lack of cooperation and will act as a spur for the illegal smuggling and clandestine sale of animals from infected areas to avoid losses (FAO, 2002).

The policy would have to guarantee producers in the Infected Area price P_3 , resulting in a production output increase from Q_{ia}^2 to Q_{ia}^3 . Failure to allow producers in the infected area to increase output to the point where marginal cost equals price, perhaps by tying compensation to historic levels of output, or introducing a quota on eligibility for the subsidy to reduce payments and output in the Infected Area, would still provide an incentive for smuggling because the marginal cost of producing the additional output would be less than the price received when product is smuggled into the Non-Infected Area. Given that only small quantities being smuggled are sufficient to cause the loss in exporting status, it would seem unwise not to allow P_3 to apply to all of the product that producers within the Infected Area wish to supply.¹⁵ Some resources would be required for monitoring and enforcement of the ban on product movements to prevent mistakes, but these would likely be small in the absence of an economic incentive to smuggle.

It would seem that the price paid to producers in the Infected Area should be directly tied to daily market prices in the Non-Infected Area and paid on the basis of the day producers choose to market. Payments calculated using average prices or some other criteria are likely to lead to perceptions that individual producers may be able to take advantage of arbitrage opportunities through smuggling.¹⁶ Of course, if prices in the Infected Area are set higher than those in the Non-Infected Area, product will be moved from the Non-Infected Area to the Infected Area to take advantage of the higher returns being guaranteed by the government. Such movements will increase the

¹⁴ Foot and Mouth disease is a highly contagious disease with significant costs associated with an outbreak. This disease in particular will be dealt with in much greater detail later in the paper.

¹⁵ The government in the exporting country would have to be sure that P_3 minus the smuggling cost (SC) is less than the marginal cost for every infra-marginal animal to ensure that smuggling would not take place. As the government is unlikely to know the smuggling cost with any accuracy this seems a risky strategy. Further, producers may not know their smuggling costs *ex ante* leading to experimentation with smuggling until the true costs become known. Even if the smuggling activity proves to be unprofitable, if the smuggling is successful in moving product to the Non-Infected market, its export status may be lost.

¹⁶ This is similar to the feeling by some producers that individually they would be able to do better marketing privately than if they receive a pooled price from the Canadian Wheat Board.

budgetary cost of the deficiency payment. Getting the price regime “right” will be central to the success of a strategy aimed at expediting sub-national exports.

If the government guarantees producers in the Infected Area price P_3 , Q_{ia}^3 will be produced. Producers in the Infected Area will gain $v + u$ while consumers will lose surplus equal to v . If Q_{ia}^3 is supplied, the market clearing price is P_4 . Thus, the cost of the government program is the rectangle defined by $(P_3 - P_4) \times Q_{ia}^3$ or $v + u + q + dd + w + ee + x + r + cc + aa + y + z + bb + s + t$.¹⁷ This subsidy is required to allow the wishes of WTO Members, as expressed in the SPS, that exports take place from disease-free areas to be achieved. Hence, subsidies provided for this purpose should be considered non-actionable (receive Green Box status) even if they are coupled.

This compensation policy produces a welfare loss of $x + r + q + bb + s$ in the Infected Area.¹⁸ Having the policy accomplish its objective, however, leads to a welfare gain of I in the Non-Infected market. The net welfare change in the Exporting Country therefore becomes $-(x + r + q + bb + s) + I$. It may well be that $-(x + r + q + bb + s) + I$ is negative and larger than $ee + o$, which is the welfare loss associated with not choosing to move to a system of regional exporting. Hence, it is not unambiguously welfare enhancing for an exporting government to support, or choose, a policy whereby sub-regions can export. Of course, it is well known that governments may not make policy based on maximization of social welfare as defined by economists. If governments are interested in minimizing the budgetary cost of a policy then the deficiency payment for the Infected Area plus the enforcement costs associated with restricting the movement of product may be expensive compared to the type of compensation that might have to be paid to producers in both the Infected Area and the Non-Infected Area when imports from the entire country are embargoed. Of course these are both empirical questions that require further investigation.

It does seem clear, however, that the smaller the Infected Area relative to the national market, the smaller will be the relative welfare or budgetary cost of sub-national exports. This is for two reasons, the obvious one being that the smaller the market in the infected area, the lower the welfare cost in that market. Second, the less exports are disrupted, the smaller will be the increase in price above P_0 (i.e. $P_3 - P_0$ will be smaller) reducing the size of $q + r + s$ ¹⁹ in the case of welfare and the budgetary cost (because the rectangle defined by $(P_3 - P_4) \times Q_{ia}^3$ will be smaller²⁰).

¹⁷ If there is an adverse consumer reaction to products that are infected either because consumers are poorly informed or because the risk preferences of some consumers exhibit a lower tolerance than those deemed acceptable by the government, then demand curve D_{ia} will shift to the left, the price consumers are willing to pay will fall below P_4 and the cost of the subsidy will increase. In the United Kingdom there was an adverse consumer reaction when BSE in beef was linked to *variant Creutzfeldt-Jakob* (vCJD), its human disease counterpart.

¹⁸ This is because for any production beyond the autarky equilibrium in the Infected Area the cost of producing the extra unit of output (as seen on the supply curve) exceeds its value to consumers (as seen on the demand curve).

¹⁹ Of course the welfare gain in the Non-Infected Area, I , will also be smaller.

²⁰ Note, not only will P_3 be lower but P_4 will be higher as Q_{ia}^3 moves closer to Q_{ia}^2 .

This result suggests that the policy for controlling the movement of product from the Infected Area to the Non-Infected Area should be premised on science-based disease control criteria and not on pre-existing administrative units, sub-national political jurisdictions (i.e. states or provinces) or geographically strategic points. It would only be coincidence that an area defined by science-based segregation criteria would coincide with an arbitrary geographic jurisdiction²¹. Hence, not using science-based criteria will always lead to an overly large area being selected for segregation and too much product being removed from the export market – thus increasing both the welfare cost and the budgetary cost of pursuing a policy of sub-national exports. If, as suggested above, a successful policy must be based on removing the incentive to smuggle rather than efforts to control smuggling, the major budgetary cost will be associated with the deficiency payment, and while some monitoring and enforcement will be necessary to prevent mistakes being made, they can be put in place on an *ad hoc* basis. A strong case for that there would be cost-reducing efficiencies associated with pre-existing administrative or geographically convenient areas would have to be made if they are to be given preference over science-based segregation.

If the product is directly dangerous to humans then it would have to be withdrawn from the market. Government will have to acquire the product and destroy it. This is likely to be a short run problem as once a production cycle is finished the government would be able to ban production until the disease has run its course or effective measures are put in place. If sub-national markets are not allowed to export the domestic supply (and exports) disappear from Figure 1, domestic demand in the (previously) Exporting Country will have to be supplied from the Rest of the World. Price in all three markets would be higher than P_1 .

If exports are allowed from sub-national disease-free areas, supply in the Infected Area, S_{ia} , will have to be removed from the market (and no longer exported) and demand in the Infected Area supplied from the Non-Infected Area²². In this case, as S_{ia} is entirely removed from the market, the price will rise higher than P_3 . As with the previous case, it is important that the incentive to smuggle is eliminated for product that is already in the production cycle. The price at which the government buys hazardous products for removal from the market must compensate producers to an equal degree as that being received by those in the Non-Infected Area.

Once the production cycle is finished in the Infected Area, no production should take place until the disease has run its course or has been eliminated. It should be easier to enforce a total production ban than to enforce a prohibition on the diversion of existing livestock to non-infected areas. The compensation that would have to be paid would only have to equal the producer surplus they are foregoing by not producing.

The policy for this period needs to be designed so that producers do not have an incentive to covertly produce and smuggle product to the Non-Infected Area. Providing

²¹ See Kerr (2004) for a discussion of arbitrary administrative boundaries and disease control

²² Or possibly, in part, from the Rest of the World if the surplus available in the Non-Infected area is not sufficient to satisfy demand in the Infected Area at the three market equilibrium price.

producers with offsetting income will not likely be sufficient to eliminate the incentive to covertly produce and smuggle – the producer’s plant, equipment, and other investments will be there and idle. If covert production and smuggling can be profitably engaged in, this will be extra income for the producer beyond what can be earned from the government provided income support and, therefore, the incentive remains. One option would be to increase enforcement effort and penalties. The decision to engage in covert production and smuggling will be determined by the relative returns from those activities, R_{Sm} , compared to the probability of detection ρ ($\rho \leq 1$) and the penalty cost P_c . Hence, covert production and smuggling will only be engaged in if $R_{Sm} \geq \rho \times P_c$. Increasing the resources dedicated to detection and enforcement can also increase the value of ρ and penalties can be made very high but, again, it can only take a small inflow of smuggled material for the Non-Infected Area to lose its export status.²³

In certain cases, a policy that needs to be seriously considered as an alternative is for the government to allow production to take place and then pay producers the price received in the Non-Infected Area and take possession of the product to destroy it. The incentive to engage in covert production and smuggling is therefore eliminated. This policy option would entail a budgetary cost greater than $P_3 \times Q_{ia}$ ³ ²⁴ in Figure 1 in addition to disposal costs. Of course, the desirability of this policy option²⁵ will depend on the relative size of the Non-Infected Area to the Infected Area. If the infected area is small, the cost might be less than those associated with a vigorous enforcement strategy. This bolsters the case for science-based rules for market segregation as the smaller the Infected Area, the lower the subsidy and disposal costs.

Improving Disease Management Utilizing Regionalization

Applying the concept of regionalization also has economic welfare implications because of the impact on incentives for the industry to undertake certain disease management practices. After the severe economic losses following the discovery of Bovine Spongiform Encephalopathy (BSE) in Canada, the industry began to speculate that they would have been better off had the disease been covered up. Alberta’s Premier Ralph Klein stated, “I guess any self-respecting rancher would have shot, shovelled and shut up, but he didn’t do that” (as reported by CBC, 2003). While the frustrations that leads to this attitude towards the management of diseases is understandable, the problem with this type of approach is that, contrary to Premier Klein, risk communication is an absolutely critical component to the efficient management of risks. For example, additional safeguards can be put in place to prevent the disease spreading in the plant or animal population and to prevent its spread to humans. If producers conceal a disease outbreak because of the economic impacts, valuable opportunities for proper management of the disease may be missed.

²³ While it might seem that eliminating covert production and smuggling would be relatively easy, the experience in attempting to control marijuana “grow operations” and cross border movements of product might provide some insights into the efficacy of such efforts.

²⁴ Remember the price in this case will be higher than P_3 and the quantity produced will also be greater than Q_{ia} ³ as a result. There is also no revenue arising from sales to consumers in this case (i.e. revenues similar to $P_4 \times Q_{ia}$ ³ do not accrue to producers and must be provided through the subsidy)

²⁵ Which will certainly be seen as being “wasteful” by some critics.

When facing the threat of market disruption and significant economic losses from international applications of SPS measures after the discovery of a disease in the national herd, exporters must make a strategic decision. The exporter can choose an 'honest' strategy and reveal the presence of the disease, likely resulting in "temporary"²⁶ trade disruptions until disease-free status can be regained²⁷. In addition, if the importing country believes the exporting country has the proper incentives and safeguards in place to protect human and animal health, they are more likely to ban only the animals, meat and by-products that pose a risk of spreading the disease²⁸. Proper management of the disease will likely mean domestic consumers retain their confidence in the institutions put in place to protect them and will not lose confidence in their domestic food supply, leaving domestic demand unaffected. Instead, the exporter could choose a 'cheat' strategy and attempt to conceal the outbreak. If the exporter chooses this route, the impact on producer welfare in the country will depend on whether or not the 'cheating' is discovered and if the disease spreads. If it is not discovered, producer surplus will be maximized as there will be no adverse trade effect. If, however, the cheating is discovered, major and long term border closures will likely result. Importing countries will lose confidence in the veterinary service of the exporting country and even after the disease outbreak is brought under control, importers will be less likely to trust that the disease is in fact eradicated. Hence, it will likely take a much longer time to reopen the border because trust will have to be re-established first. In addition, domestic consumers may lose confidence in the safety of the domestic food supply so domestic demand could decrease, further depressing prices. Regardless of whether the cheating is detected or not, sizeable economic losses could occur to both the exporting and importing countries if it results in the unchecked spread of the disease.

The actions of the exporter will depend on several factors. Firstly, as the probability of cheating being detected increases, the incentive to do so will decrease. Secondly, as the possibility of disease spread and the economic losses associated with disease spread increases, again, the incentive to conceal the disease will decrease. Finally, the decision of the exporter will depend on how the producer surplus in each outcome changes. As shown above, if regionalization can be used, the decrease in producer surplus after the discovery of a disease in the domestic herd may well be smaller than if exports from the entire country are affected. The smaller the 'temporary and moderate' expected trade disruption is after the announcement of a disease, the less likely it is that the exporter will risk facing the long term, severe trade effect

²⁶ The amount of time that must pass before market access can be expected to be restored varies widely depending on the characteristics of the disease. For example, a country can regain disease-free status with respect to rinderpest after 21 days without an outbreak if it employs 'stamping out' practices but it takes seven years without a case of BSE to be considered BSE free (CFIA, 2003).

²⁷ Even if country does not have disease-free status with respect to a particular disease, the animals affected and their meat and by-products may be able to be exported. Conditions, however, are usually imposed and these conditions will not be removed until disease-free status is regained.

²⁸ For example in the BSE case, many countries banned all exports of live cattle and beef following Canada's announcement even though some products carry almost no risk of spreading the disease. The excellent relationship Canada has with the US allowed Canada to resume exports of boneless meat in August 2003 when no other country has ever regained market access to the US after a domestic BSE case.

combined with decreased domestic demand and increased possibility of disease spread. Thus, the incentive to conceal a disease outbreak is lessened through regionalization. The issue of the incentive to cover up the existence of a disease outbreak is modeled more formally in Appendix A.

The ability of a country to regionalize and be allowed to resume exports from certain areas of the country will also impact the decisions a country makes after a disease outbreak. Countries will often undertake better disease management practices to eradicate a disease in a particular area in order to regain export status. When this strategy is successful, it encourages the expansion of the disease-free areas. Eventually, this may lead to the complete eradication of the disease within the country which may not have been feasible if it was necessary to eradicate the disease nationwide before exports could resume. This strategy has been used extensively in South America in the fight against foot and mouth disease (FMD). For example, Brazil first obtained recognition of an FMD free zone in 1998 and has continually expanded these regions which now account for 50 percent of the national territory, 75 percent of all bovine farms and 84 percent of the bovine population in the country. This has allowed strong export growth, fuelling the expansion of the industry which is now the second largest producer in the world (second only to the US). This would not have been possible if complete eradication was necessary before exports could resume and had led to significantly lower disease prevalence in the country overall (WTO, 2005a). For more details on Brazil's experience, see Appendix B.

Work at the WTO SPS Committee

The implementation of Article 6 was identified by the Committee on Sanitary and Phytosanitary Measures (SPS Committee) as an issue that required further work during the First Review of the SPS Agreement in 1999 and it has been an agenda item of every single meeting of the Committee of the WTO since 2003. While all countries are officially supportive of the basic principles of creating sub-national zones in a country according to the disease status of the area, exporting countries often experience great difficulty in getting sub-national zones recognized by trading partners. Discussions on regionalization have centred on this topic. In the 1999 review, the SPS Committee noted that Members faced difficulties with implementing the Article on regionalization (WTO, 2004i). Some of the issues that caused difficulty for Members included excessively lengthy administrative processes for the official recognition of a region from which exports would be accepted by importing countries, divergences in interpretation and implementation of international guidelines, and the complexities involved in risk assessment. Discussion of these problems appears to have resolved little. The Second Review of the SPS Agreement stated that exporting countries still suffered from delayed recognition of their pest or disease-free status by importing countries and that procedural issues remained a major impediment (WTO, 2005d). It is difficult to discern if the problems in obtaining recognition relate to protectionist rent seeking by producers in importing nations (i.e. the potential loss of area *a* in Figure 1 if there is a disease outbreak in a foreign supplier's territory) or worries about the efficacy of measures put in place to isolate the disease. Given that the SPS and the Codex, World Animal Health

Organization, and the IPPC are science-oriented, they have not dealt with the problem from an incentives perspective, instead, they focus on monitoring and control measures. Therefore, importing countries may be wise in their caution.

Member's Experience with Regionalization

Members were called on to submit documents to the SPS Committee outlining some of their experiences with regionalization in an effort to encourage transparency and allow countries to learn from others' experiences. The majority of the submissions came from the European Union and Southern American countries. A short summary is provided below and more detail is provided in Appendix B.

European Union Submissions

Regionalization is an important risk management tool utilized in the EU. Disease status varies significantly among EU Members due to different ecological conditions, geographic barriers, and historical disease control mechanisms. As there are no border controls after the completion of the Internal Market in 1992, regionalization is used extensively as both a disease management tool and to facilitate exports. In the case of animal diseases, the EU applies this concept for FMD, classical swine fever, avian influenza, Aujeszky's disease, and Infectious Bovine Rhinotracheitis (IBR) (WTO, 2003j). When conducting risk assessments to determine the appropriate SPS measures to employ, the primary element taken into consideration is the competency of the certifying authority involved (WTO, 1998). Regionalization was an important control technique in the FMD epidemic in 2001, proving to be a successful strategy which allowed them to control the spread of the disease and safely resume trade more quickly, both within and outside of the EU (WTO, 2003j). The EU raised a number of cases in which they feel they should be granted recognition for disease-free areas for diseases such as avian flu, classical swine fever, and FMD, but have not (WTO, 2005e). They also highlight the numerous cases of recognizing others' efforts at regionalization to emphasize the importance of reciprocity in recognition efforts (WTO, 2003j).

South American Submissions

The most significant plant or animal health problem faced by South American countries, including Argentina, Colombia, Brazil, Paraguay, Peru and Chile is FMD. These countries have all applied regionalization to control and attempt to eradicate this disease, at least from certain areas of the country. Various approaches have been utilized such as numerous control points strategically located according to epidemiological status of zones, vaccination within certain areas, large buffer areas between infected and disease-free zones, official quarantines, creating information systems for better control and animal movement controls. Regionalization has proved to be a very effective disease management tool and regaining access to foreign markets was frequently cited as the most important incentive for implementing the programs. Complete eradication remains the goal for each of the national governments but it has thus far has proved unattainable, partially due to recurring outbreaks in neighbouring countries.

While these countries have had success in obtaining recognition for their FMD-free areas, complaints have also been raised regarding areas that have not been recognized or import measures that are felt to be too restrictive. For example, Brazil noted that while they have a large proportion of their cattle population recognized as FMD-free, only two of the seven major bovine fresh meat importers buy from them²⁹. In addition, even the two countries that are open to Brazilian fresh meat exports apply trade restrictions related to FMD. In their submission, Brazil states, “one can draw the conclusion that the most important restriction for Brazil’s exports of fresh bovine meat is still the lack of recognition of Brazil’s FMD-free zones, established in accordance with OIE standards” (WTO, 2005a).

Another illustrative example of the problems exporters often face when attempting to obtain recognition of disease or pest free areas was provided by Argentina. Argentina declared provinces in Northwest Argentina as free from citrus canker, a plant pest. Argentina entered negotiations with one WTO Member (which was not identified) to obtain recognition of the different status for the disease-free region versus the region affected by the disease. This Member has modified its import requirements twice but always recognized the different status of the regions concerned and did not disrupt the flow of goods. However, with a different unidentified Member, Argentina was not able to export, despite efforts beginning in 1995. In 1999 the Member recognized Northwest Argentina as free from citrus canker, five years after the regional reference body recognized Northwest Argentina as disease-free. As a result of recognition being granted, Argentina drew up a Work Plan for the export of fresh lemons, oranges and grapefruit. However, the Member never approved the Work Plan and trade did not occur (WTO, 2003f).

Mexico Submission

Mexico’s submission highlights the administrative delays countries often face. The Mexican Ministry of Agriculture embarked on a plan to establish fruit fly-free areas or areas of low prevalence with the objective of obtaining recognition from the US. Fruit affected included apples, grapefruit, apricots, oranges, peaches, plums, persimmons, pomegranates and mandarins. Up until October of 2003, Mexico had requested the US recognize additional pest free areas six times. Although the Mexican government followed the same guideline for establishing and declaring all fruit fly-free zones, all of these cases took at least two and a half to five years from the time Mexico made the request to the US before obtaining recognition (WTO, 2003i).

United States Submission

The US has faced considerable criticism for failing to fairly recognize others’ disease-free areas. As such, the US submission to the SPS Committee focuses on this.

²⁹ The seven major beef importers are Canada, Japan, Korea, Mexico, Russia, the European Union and the U.S. The European Union and Russia accept fresh meat from Brazil. Other countries, for example the United States, import large quantities of beef that has been processed, killing the FMD virus and nearly eliminating any chance of disease spread.

Regulations were first created in 1987 by the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) to allow importation of fruits and vegetables from definite areas or districts. This was in response to Mexican lobbying. Further regulations and amendments were published in 1997. Similar to the EU, one of the most important factors is the credibility of the authorizing authority in the exporting country. Other factors the US considers include risk assessments, evaluation of veterinary or phytosanitary infrastructure in exporting region, risk management options in the country, and availability of scientific information (WTO, 2004f).

Proposals for Improving Implementation of Article 6

Submissions to the SPS Committee stressed the frequency of countries successfully creating disease-free areas within their national borders only to face significant delays in obtaining recognition by their trading partners. Currently, there are no extensive guidelines or rules that countries must follow for recognizing regionalization. This creates significant opportunity for protectionist-motivated administrative delays. The proper implementation of regionalization depends on a number of factors, all of which can vary significantly and affect how regionalization should be implemented. The technical complexity makes it impossible to create ironclad regulations that do not allow for the use of any discretion on the part of the responsible government agency. However, it is possible to ensure rules are in place to reduce the ability of governments to apply rules in a discretionary manner and to make import regulations more predictable and transparent. Comprehensive discussions of regionalization that began in 2003 have centred on this issue and how to best create rules and procedures to promote a reasonable balance between the benefits of enhanced trade and the increased risk of potential costs due to a disease spreading. Unfortunately, little progress has been made despite being on the agenda of every SPS Committee meeting since 2003. A summary of issues raised and countries' positions is provided below and details of the submissions made to the SPS Committee and progress in the negotiations are provided in Appendix C.

Chile has been one of the most active participants in discussions on how to improve the implementation of Article 6. Chile strongly supports creating significantly more detailed guidelines to prevent what it perceives to be very serious delays in the recognition process. Chile has highlighted a number of factors which could be the cause of delays in an attempt to properly address them. Some of these are the responsibility of the exporting party, such as quality and timeliness of information provided or lack of adequate channels of communication and some of which are the responsibility of the importing country, such as lack of transparency in information procedures, requests for irrelevant information, and lack of harmony in procedures (WTO, 2003a). Chile has repeatedly made calls for a set procedure to be agreed upon, with possible timeframes given to some or all of the steps that are to be followed. Many countries, for example Peru, Argentina, China, Mexico, Brazil, Colombia, Costa Rica, Uruguay, and to a lesser degree, the European Union, strongly support this position and have made numerous submissions with various alternatives. These submissions vary

mostly in ambition level and were not substantially divergent in overall purpose (WTO, 2005f).

While a large number of countries support the idea of creating rules within the SPS committee to improve implementation of Article 6, others, primarily Canada, the United States, New Zealand, and Japan feel work should not occur at the WTO but be left to the relevant international standard setting bodies (the OIE and IPPC). In addition, Australia proposes that no efforts should be taken at the SPS Committee until the OIE and IPPC have had time to review the issues, possibly establish new guidelines and report back to the Committee. Canada was the first country to formally espouse this position in a submission prior to the March 2004 meeting. Canada reminds Members that Article 12 of the SPS Agreement encourages the SPS Committee to maintain close contact with the relevant organizations to ensure that unnecessary duplication of effort is avoided. Canada stated that as such, the SPS Committee shall urge the OIE to continue, as appropriate, to draw up guidelines on animal health and inform the Committee of their activities. Canada espoused that the role of the SPS Committee should be to facilitate information exchange by collecting and disseminating information from countries regarding their experiences with a view to developing best practices. Canada, and the countries supporting this position, argued that as regionalization was a technical issue, it was best dealt with by the OIE. They also suggested it was not feasible to create general guidelines with timelines due to the differences in specific diseases and pests as well as in regulatory systems of countries (WTO, 2004I).

There are several core issues that have been the centre of discussion at the SPS Committee. Firstly, there are no administrative procedures in the form of an international standard or guideline for recognition of disease-free areas. This includes the lack of defined time limits for responses. There is, however, no agreement on where these standards and guidelines should be created, the WTO or OIE. Peru suggested it was necessary to differentiate between the procedures and time frames that are required for disease-free areas to be established and declared (which would be governed by the OIE) and the procedures and time frames required for the evaluation and recognition of disease-free areas by an importing Member (which they argue should be created by the SPS Committee) (WTO, 2004a). Secondly, Members are concerned about the limited utilization of official recognition by the OIE. This is because the OIE carries out evaluations and grants recognition of sanitary status for only four diseases³⁰, but some importing Members do not automatically or speedily accept such recognition. Several Members have proposed that additional important diseases should be included, for example, avian flu, and that a special, expedited process should be created for importing countries to accept regionalization claims that have already been supported by the OIE. Finally, Members are concerned about the uncertainty involved in obtaining and maintaining disease-free status. This is a result of many factors including that administrative procedures required by importing Members can lack transparency, be complex, expensive, slow, and not always clearly defined, there are currently no clearly defined time limits for responses, the time taken to recognize an area can vary from a

³⁰ Currently the OIE provides verifications only for foot and mouth disease, bovine spongiform encephalopathy (BSE), rinderpest and contagious bovine pleuropneumonia.

few months to several years and, finally, administrative procedures between Member lack consistency (WTO, 2004e).

A number of key issues have continued to be reiterated by a variety of countries. The US stresses the importance of the strength and credibility of authorities responsible for animal health in the exporting region and that regionalization decisions must be made in an open and transparent manner (WTO, 2004f). China suggested that all Members should publish their own recognition agencies, standards, procedures and estimated time period for each step and notify them to Members through the Secretariat to improve predictability. Chile stated that when importing countries chose to apply a higher level of protection with stricter admission requirements than the international norms, these countries should have to justify that situation or propose changes within the OIE if there is a firm scientific basis for such a change (WTO, 2004b).

Despite a lack of process at the SPS Committee, there is a general consensus that more detailed guidelines regarding regionalization need to be created. Where there is not consensus, however, is determining where those guidelines should be created and their scope. Some members, primarily the Latin American countries, have strongly pushed for detailed rules to be created in the WTO SPS Committee. The representatives from those countries view the greatest deficiency in the rules that currently exist is a lack of administrative guidelines which leads to reduced transparency and predictability. They recognize the OIE is the optimal body for determining technical regulations and want to encourage continuing work in that arena but they are concerned that any improvements in technical regulations will be ineffective without improved administration guidelines. Other countries, such as the US and Canada, advocate that work should be completed at the OIE. These countries believe that there is a very close connection between technical procedures and appropriate administrative procedures and, thus, administrative procedures would be best determined by the international body that has the greatest technical expertise in the area. They also state that they are concerned that work at the SPS Committee would be a duplication of effort and could particularly harm small developing countries that have limited veterinary capacity to dedicate to these negotiations. It may be possible that these countries are also reluctant to create the administrative rules at the WTO, which would result in them being subject to the WTO's binding dispute settlement procedure. Politicians have tended to act in a more precautionary manner than necessary to cater to public perception that everything possible must be done to protect human and animal health in the country (Loppacher and Kerr, 2005). While constraining governments' ability to act in an arbitrary manner is one of the fundamental principles of participation in the WTO, politicians may be reluctant to relinquish this control in matters that are perceived by the public to impact human or animal health. The wrangling over procedures and efficacy of measures suggests that there is a deep suspicion that the activities of foreign disease control authorities cannot be trusted to ensure the disease-free status of a sub-regional area. While there may be honest competency questions regarding science-based disease control institutions in some countries, there is seldom a problem in recognizing the national competency of these same authorities. In other words, the same authorities that can declare a national level disease-free status cannot be trusted to

declare a sub-national area disease-free. This suggests that it must be difficult to achieve and maintain regional disease eradication, and may also imply that the incentives to smuggle have not been effectively dealt with.³¹ In other words, it is unlikely that regulation alone will ever provide the degree of assurance required by importers. This needs to be formally recognized and put on the agenda to break the logjam that currently effects the negotiations.

Considering the stalemate that arisen between countries regarding where administrative guidelines should be created, either at the SPS Committee or the OIE, it is important to examine what has been attempted and accomplished at the OIE. Even without a clear mandate from the SPS Committee, the OIE has been undertaking work on this issue. The following section examines this work.

Work at the OIE

At the 73rd Annual General Session of the OIE held on 22-27 May 2005, the OIE responded to requests from the WTO to further the work on regionalization by adopting a new chapter³² in the Terrestrial Animal Health Code that specifically deals with zoning and compartmentalisation³³. The OIE states that the procedures in the Chapter are best implemented by trading partners before a disease outbreak. Chapter 1.3.5 notes the benefits of zoning to encourage more efficient use of resources within certain parts of a country to allow trade in certain commodities from the zone and states that the procedures needed will vary according the mixture of circumstances present. It states the limits of the zones can be based on natural, artificial or legal boundaries so long as animals and herds belonging to the subpopulation can be clearly recognized as such (which highlights the importance of a national identification program). There is no single sequence of steps which must be followed in defining a zone but the recommended steps were provided. These steps are a very general procedure to follow and the only mention of time frames is that after an importing country makes a determination regarding if it will accept the exporting country's regionalization effort, it should notify the exporting country within a "reasonable period of time" (OIE, 2005c). Greater detail is provided in Appendix D.

These newly created guidelines do little to provide the types of administrative guidelines that many countries are looking for. Although a very vague sequence of steps is provided in the newly adopted Chapter, it is worded as a mere possible procedure to follow, not anything that countries must follow and is so vague as to have little consequential impact. The issues raised by a number of countries in the SPS Committee meeting regarding the absence of extensive guidelines for obtaining

³¹ Unless the intent by importers is simple protectionism – allowing producers in their country the opportunity to capture area *a* in Figure 1

³² The entire text of the Chapter can be found online on the OIE's website at http://www.oie.int/eng/normes/mcode/en_chapitre_1.3.5.htm

³³ For the purposes of the Terrestrial Code, zoning and compartmentalisation are procedures implemented by a country with a view to define subpopulations of different animal health status within its territory for the purpose of disease control and/or international trade. Zoning is when the subpopulation is based on geography and compartmentalisation is based on management systems related to biosecurity.

recognition of disease-free regions once they are established have not been addressed, and again, there is no mention of incentives to smuggle.³⁴ If administrative disease control measures are not foolproof, removing incentives to cheat seems to be the most logical way to increase their efficacy. Admittedly, this is not in the usual purview of science-based organizations like the OIE.

US Requirements for Recognizing a Disease-Free Region

As Canada's largest trading partner and single largest destination for exports of animal and animal products, the regulations of the US are of paramount importance for Canada's trade in these products. These regulations are created by the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS). The APHIS rules have 11 factors which they consider when completing a risk assessment on a sub-national zone relating to: the capabilities of the certifying authority and diagnostic laboratories; the disease status of the zone in question and surrounding zones and the barriers between these zones (including movement controls); animal management practices such as active disease controls, vaccination, demographics and marketing practices; and the policies and infrastructure for animal disease control in the region (Scott Wolfe JDG Consulting Group, 2004). These are all science-based criteria.

Exporters' experiences with obtaining recognition from APHIS have been mixed. Brazil, for example, has been granted permission to export only processed meat from certain recognized FMD free regions. This processing is usually thermal processing, which destroys any traces of the FMD virus that may be present in the meat. While other countries, such as the EU, accept fresh beef from certain regions in Brazil, the US does not (Ag News Brazil, 2005). As discussed above, Mexico has worked diligently to expand the regions recognized by the US as fruit fly-free areas. Administrative delays have been significant as each of the six requests before October 2003 took at least two and a half years to obtain recognition (WTO, 2003i). Canada has had success in exporting from non-diseased regions of the country to the United States when there have been contained disease outbreaks in certain areas, particularly with the avian flu outbreaks in British Columbia. In the most recent outbreak in November of 2005, the US initially closed the border only to birds from British Columbia. After it was determined the strain found in the infected birds was the low pathogenic variety and information was provided regarding the measures Canada took to contain the disease, the US reduced the restriction to cover only a 5 km zone surrounding the premise where the outbreak occurred (APHIS, 2005).

By making their risk evaluation criteria for regionalized risk assessments public, the US has equipped countries to design their systems *ex ante* to comply with US standards. Obtaining recognition of disease-free areas from the US is often one of the primary objectives of countries that are designing and implementing zoning strategies, including Canada. While Canada knows it must primarily adhere to all OIE standards if a region is to be declared disease-free, in work completed so far, it has been very cognizant of specific criteria the US uses and has worked to incorporate these into the

³⁴ Although this may be contained under the risk assessment umbrella.

strategies it is developing. Canada is also aware of the importance of reciprocity and has worked with the US to recognize its regionalization efforts.

Canada and Zoning Thus Far

The Canadian Food Inspection Agency (CFIA), which is responsible for animal health in Canada, generally strives for national eradication of diseases and thus, does not utilize regionalization extensively. Canada desires to use zoning as a 'fallback' strategy. Ideally, the CFIA would like to achieve disease-free status on a national basis but, should this fail, would create zones to both control the outbreak and regain the ability to export from the majority of the country. Canada has utilized zoning in the past and has also recognized other countries' efforts at regionalization, especially the US. Canada applied the zoning principle as a disease management tool with bluetongue in the Okanogan Valley in British Columbia, brucellosis in the 1980s, and avian flu in British Columbia.

Canadian Recognition of Other's Regionalization Efforts

Canada has recognized the regionalization efforts of several exporters to allow them to access to the Canadian market despite existence of a disease in the country. Canada has recognized certain US states as free from avian flu for poultry and pseudorabies in swine, allowing imports from these states. Canada also recognizes the Mexican state of Sonora as free from Classical Swine Fever. The most significant regionalization program between the US and Canada was for feeder cattle with respect to anaplasmosis brucellosis and bluetongue which began in 1997. Canada is recognized as free from both these diseases while the US is not. The northwestern states pushed for negotiations to eliminate the requirement for individual animal testing for these diseases which was economically prohibitive for large scale importation of animals destined for slaughter. An agreement was reached to allow cattle from Montana and Washington to move into Alberta and Saskatchewan during October to March. Full access was not granted as these cattle were designated as "restricted feeders". Restricted feeders could be imported for the purpose of feeding but only into approved feedlots where they were placed in segregated pens and given antibiotic treatment on arrival. During the first year of the program, fewer than 1,000 head of cattle were imported under the Northwest Cattle Project as producers struggled to comply with the restrictions placed on the movement of cattle after their importation. Practical application of the requirements to import US cattle proved to be more onerous and costly than anticipated by the Canadian feedlot industry. Cattlemen on both sides of the border began complaining that the program as implemented was not workable (Annand, 2001). In 1998, the program was expanded and the name was changed to the Restricted Feeder Cattle Import Program (RFCIP). It was extended to include Hawaii, North Dakota and Idaho and removed or relaxed many of the requirements of the original program, especially after the antibacterial treatment was completed. While the program was viewed as a success for both sides, it still imposes significant administrative costs on Canadian importers, partially dampening enthusiasm for importing feeder cattle from the US (Annand, 2001). The onerous paperwork that had

to accompany these imports may have been sufficient to ensure producers followed all conditions of the cattle's importation, but one suspects at least small numbers of cattle have not been handled in complete accordance with the regulations established. There is, however, no evidence publicly available to either support or refute this statement.

Canada has not recognized some successful zoning initiatives in certain countries. For example, the OIE recognized the zone south of the 42° parallel in Argentina as an FMD-free zone where vaccination is not practiced (OIE, 2005b). However, the CFIA states "the country is not recognized free of FMD". Processed meat can be imported as the processing kills any FMD virus that may be present in the meat but no fresh meat can be imported from Argentina, including from the zone the OIE has recognized as FMD-free (CFIA, 2004).

Regionalization Within Canada

Serious examination of the possibility of creating animal disease zones within Canada began in approximately 2000. The CFIA has completed two major reports on the topic (CFIA, 2001 and CFIA, 2002). Efforts have focused on the possibility of a foot and mouth disease (FMD) outbreak, which Canada is recognized as being free of. FMD is an OIE List A disease, meaning it is highly contagious and has significant economic impact. Estimated costs of a small scale FMD outbreak under optimistic conditions would be \$13.7 billion and a large scale outbreak would cost Canada \$45.9 billion. This is many times the losses that have been experienced in the wake of BSE which has been estimated to be about \$6 billion. An effective zoning policy was estimated to reduce these costs by up to 45 percent or up to \$20.7 billion (Serecon Management Consulting, 2002). A multiple stakeholder advisory group called the Canadian Animal Health Coalition (CAHC) has been at the forefront of Canadian regionalization efforts thus far. The CAHC members recognize the economic benefits regionalization may provide, but also want to avoid unnecessary inter-provincial or other domestic trade barriers (CFIA, 2001).

The approach – pre-outbreak or post – Canada should take is the subject of considerable debate. In a pre-outbreak situation, domestic trade could be constrained and lead to additional unnecessary costs to the industry but could result in improved control mechanisms and could be proven effective to trading partners *a priori*. In the event of a disease outbreak, exports from the disease-free area will likely be disrupted much less and normal export resumed in a shorter period of time. If a post-outbreak strategy was employed, domestic trade would not have to be constrained when unnecessary but trading partners may question if Canada possessed sufficient knowledge and experience with regards to industry demographics, surveillance, identification, and movement controls. As such, recognition of disease-free areas cleared for export may take significantly longer (CFIA, 2001).

In a study by the CFIA in 2001, a number of deficiencies were noted that would impede Canada's ability to successfully implement zoning. Some of the deficiencies noted were: lack of national retrospective traceability for all susceptible species, lack of

continuous movement controls and vehicle disinfection at the boundary of the zone, lack of self-containment within the zone for the entire production cycle of each susceptible species, and meeting OIE surveillance standards within the zone. A system of retrospective traceability would have developmental costs of about \$100 million, movement controls at the perimeter were expected to cost about \$10 million a year, and surveillance for all separately husbanded, susceptible species were expected to cost about \$1 million per zone.

Early detection of a disease outbreak is one of the most critical components if a disease is to be zoned. The CFIA recognizes that regional disease detection and investigation systems will need to be strengthened if Canada is to rely on passive disease surveillance as their early warning system for the presence of disease. One tool Canada will be able to utilize is the four brand inspection services in British Columbia, Alberta, Saskatchewan, and Manitoba – designed to curtail horse and cattle rustling. Each of these organizations stated they believed they were capable of providing the destination of all cattle sold out of the province for the three weeks prior to a disease outbreak within a three day turnaround. This could be critical when trying to claim a disease has been contained to a certain region. Self-containment within the zone also presents significant challenges to the Canadian industry (CFIA, 2001). As was discovered after the US border closure because of BSE, Canada has insufficient slaughter capacity in the cattle industry, a problem that would be compounded the smaller the disease-free zones became. The industry also learned that modifying the location of members of the supply chain can take a very long time.

The CFIA attempted to quantify the economic benefits of zoning but due to the wide variety and uncertainty of potential disease outbreaks and management, they state it is very hard to quantify the economic benefits of zoning. A large number of estimates were made using different assumptions and many of the estimated benefits ranged from millions to billions of dollars. In addition, zoning could have significant social well-being implications, for example, lower stress on farmers and the negative impacts that it can have on their mental and physical wellbeing (CFIA, 2001). The CFIA makes reference to the issue of compensation for those negatively impacted by a disease only in regards to animals that are destroyed as part of the disease control program. Incentives to prevent circumvention of their administrative measures must be an important factor in the efficacy their proposed programs.

Lessons from Other Countries

In the fall of 2003, a delegation of 17 representatives from Canadian industry and government travelled to the Netherlands, Belgium and the European Union on a zoning fact-finding mission to try to learn from their experience. The mission was part of the overall Canadian Animal Health Emergency Management (CAHEM) Zoning Project. The project's objective was to create a workable plan for implementing a zoning strategy in Canada. The delegation learned a number of key lessons and insights that were highlighted in the mission report including (CAHC, 2003):

- For zoning to be effective in the long run, it must be accompanied by livestock identification, traceability and a system of movement controls.
- Zoning systems must be continually modified and improved.
- The human resources needed to support the active zone are significant and industry partnering is critical.
- Zones must be established before there is a disease outbreak to create workable plans and to reduce uncertainty. If pre-outbreak rules are too tough, however, industry will balk at them and not support the initiative. In addition, regulations must be simple enough to assure compliance.
- Farmers did not have a very positive view of the bureaucracy involved and Canadian participants were very concerned over the paper trail required.
- Rumours of outbreak will cause premature movement which could be minimized by a clear communication plan (CAHC, 2003).

Where Would Optimal Zone Limits be in Canada?

After examination of Canada’s existing veterinary infrastructure and legislation, the CFIA determined the political boundaries of the provinces would likely be the most reasonable delimitation of zones in Canada. There have been several geographical situations identified that may allow further subdivisions to be possible, for example, Vancouver Island, Cape Breton Island or the lower peninsula of Ontario. In addition, there are some circumstances where it may be more advantageous to group provinces or parts of provinces together as one zone, for example, the area east of the Rocky Mountains combining with Alberta to make a zone or the three prairie provinces creating one zone. When implementing a zoning strategy, strict movement controls are required, especially for OIE List A diseases³⁵. As the number of points that could be used to cross between zones³⁶ (and thus, must have control mechanisms) increases, so too does the cost of implementing a zoning strategy. The following table provides the number of primary and secondary roads crossing provincial boundaries in Canada (CFIA, 2001).

Table 1 Approximate Number of Interprovincial Primary and Secondary Crossings

BC-AB	AB-SK	SK-MB	MB-ON	ON-QC	QC-Atlantic
7	20	12	1	18	10

Source: CFIA, 2001

As one can see in the table, there is only a single road crossing from Manitoba to Ontario. The town of West Hawk Lake, on the Manitoba side of the border, is closest to

³⁵ OIE List A diseases are diseases which are very rapidly spread with serious socioeconomic or public health consequences. The list includes, *inter alia*, African Swine Fever, Avian Influenza, Foot and Mouth Disease, Newcastle Disease and Rinderpest.

³⁶ This discussion assumes movement is due to human involvement, for example, a producer shipping their cattle herd to slaughter. It is not valid for animal movement that occurs naturally, for example, wild bird migration.

this crossing. West Hawk Lake (WHL) was identified by the CFIA as the best place to implement a zoning boundary in Canada.

West Hawk Lake

There are a number of characteristics which make WHL a good potential site for a control point in implementing a zoning boundary. The primary reason was that it is the only crossing between the East and West, as mentioned above, and most livestock movement between the possible zones use this road. WHL would become a stationary point where all animal movements are recorded. This data, along with animal identification, would allow tracking and tracing of animal and product movement between the zones. During outbreak periods, the role of WHL would be analogous to an international border, prohibiting or tightly controlling movement of products into the disease-free zone so as to maintain its status. The estimated net present value of start-up costs and annual operational costs of WHL is approximately \$19.1 million while net benefit over the next 20 years was estimated to be between \$5 billion and \$20 billion depending on the magnitude and characteristics of a disease outbreak. As such, Canada has chosen to move forward on this initiative and is currently in a pilot test phase³⁷ (Scott Wolfe JDG Consulting Group, 2004).

Other Potential Zone Borders Examined

Canada has also examined other potential zoning borders that could be utilized. The key criteria they consider are the natural physical boundaries, the potential for easily collecting animal and animal product movement data, the potential for easily enforcing operations at the border, existing, or potential for, inspection stations, meeting OIE guidelines and requirements, meeting APHIS requirements, and the magnitude of economic benefits possible. They examined creating zones encompassing Prince Edward Island, the Maritimes, Quebec and Ontario, Saskatchewan, Vancouver Island and British Columbia to determine if they were both feasible and economical. Zoning Prince Edward Island, the Maritimes and Vancouver Island was determined to be possible but that economic benefits may be limited. Zoning Quebec and Ontario was viewed as having high economic benefits but very high operational costs as well but that these costs may be justified. While zoning Saskatchewan was determined to have substantial economic benefits, it was viewed to be not very feasible to implement. Finally, zoning British Columbia was assessed as having both moderate costs and benefits (Scott Wolfe JDG Consulting Group, 2004).

In the work that has been completed thus far, efforts have focused almost entirely on creating control points at zone borders. However, as discussed earlier, history suggests if there is an economic incentive to smuggle, despite the best control plans, some smuggling is likely to occur. While the CFIA plans to create a control point at WHL are a good first step, without policies to remove the incentive to smuggle from the infected region to the non-infected region, smugglers will almost certainly discover

³⁷ For a full descriptions on the rational and proposed operational details of WHL, see Scott Wolfe JDG Consulting Group, 2004

deficiencies that they can exploit. Even if these deficiencies are very limited and very little smuggling takes place, with a highly contagious disease like FMD, it would only take one infected animal to spread the disease to the previously disease-free area and lose the benefits of regionalization. Hence, compensation is an essential co-requisite to administrative measures. The compensation plan must be decided on before an outbreak occurs and clearly communicated to the industry to relieve fears in the event of a rumour circulating about a disease outbreak. Without a guarantee that their livelihood will be safeguarded regardless of the discovery of a disease within a zone, producers may rush to move animals or animal products out of the infected zone which could result in the disease spreading to the other zone(s).

Conclusion

The ability to create sub-national disease-free zones can provide significant economic benefits for an agricultural exporting nation such as Canada. In addition, the economic incentives created by the ability to export from certain regions of a country can encourage governments and industry to undertake substantially improved disease management practices including eradication and reporting. The World Trade Organization's Agreement on the Application of Sanitary and Phytosanitary Measures created in 1995 established rules which stated that importing Members should recognize the disease status of an area which may be all of a country, part of a country, or all or parts of several countries. While this Agreement has been in place for ten years, countries continue to experience difficulties in obtaining recognition of disease-free areas from their trading partners. Many of the concerns raised were by the European Union and Southern American countries with respect to foot and mouth disease. The SPS Committee has been examining this issue in earnest continually since 2003. Discussions have primarily centred on whether or not the SPS Committee should create administrative guidelines to improve implementation of the regionalization article of the SPS Agreement. Many developing countries, the most active of which is Chile, propose that technical guidelines should be created in the OIE and administrative guidelines should be created by the SPS Committee, as the main problems with obtaining recognition have not been on technical grounds but on administrative procedures. Canada stated that it felt that the SPS Committee should not develop guidelines as this was the expertise of the OIE and work done at the SPS Committee would simply be duplication of effort, a proposal supported by several Members, including the US. During the May 2005 General Session of the OIE, a new chapter on regionalization was adopted by the OIE Members. The new chapter obligates countries to carry out a risk assessment when assessing a trading partner's request for recognition of a disease-free area, in addition to proposing a possible sequence of events that *could* be followed. Members are not, however, required to follow the procedure suggested. This new chapter will likely change little with respect to the administrative delays countries face when attempting to have a disease-free area recognized by their trading partners. In almost all of the submissions to the SPS Committee regarding Member's experience with regionalization, Members highlighted a number of examples where disease-free status was obtained (and in some cases recognized by the OIE), but continued to face significant delays in being granted

recognition by their trading partners. These delays can be extremely costly for industry in the exporting country and can be captured by protectionist interests in the importing country to slow the process down so that they may enjoy higher prices in their home market. Canada has experienced this first-hand after the discovery of BSE in the national herd, facing significant administrative delays to be recognized by the US as a 'minimal risk country', resulting in a prohibition of live cattle exports for almost two years.

The WTO SPS Committee has a major role to play in helping to increase the transparency and consistency of the application of the regionalization chapter. The WTO's expertise is not in creating scientific guidelines, which is precisely why it defers to international scientific organizations. What the WTO is highly adept at is controlling the use of administrative procedures that can, or are, being used as illegitimate barriers to trade. The OIE has responded to calls from the SPS Committee to develop new and relevant guidelines for declaring a region disease-free. These rules, however, are scientific guidelines, not administrative guidelines, and are not capable of ensuring that once a country has made the investment to create a disease-free area, it will be recognized by its trading partners. Exporting Members would be significantly better off if there were transparent and predictable procedures they knew their trading partners were obligated to follow. Concerns of Canada and other Members that work on regionalization at the SPS Committee would be duplication of effort with work done at the OIE are failing to realize that so long as the mandate was administrative guidelines, this work would be complimentary to the work done at the OIE, not overlapping. The point is underlined by the recent apparent unwillingness of the OIE to step up to the request to provide such administrative guidelines. It would be in Canada's best interest to have these guidelines and as such, they should encourage their development and play an active role in their formation to ensure that obtaining recognition from trading partners is as expedient and predictable as possible, while still ensuring animal and human health is protected to the necessary degree.

Canada has been undertaking serious work to advance their capabilities in regionalization since 2000 and have made significant progress during that time. As a net exporter of many animal products and live animals, the economic benefits from zoning could be as high as \$20 billion for Canada in the event of a wide-spread outbreak of foot and mouth disease. Similar gains might be expected from regionalization in plant protection. While Canada does not currently have a zone border in place in the livestock industry, it is in the pilot project phase for West Hawk Lake which would see the creation of one zone comprising everything west of the Manitoba-Ontario border and one zone comprising everything east of the Manitoba-Ontario border. While this geographic bottleneck may well be the most efficient place to control smuggling when large incentives are involved, it points out the cost of having to rely on administrative measures. In essence, Canada would be divided into only two markets. There is no scientific disease management basis for this division. It might well be that without incentives to smuggle the disease could be isolated relatively easily, for example, in a small area of Saskatchewan. The number of producers negatively impacted could be small. Having all of Western Canada excluded from exporting greatly

increases the economic losses associated with the outbreak and the size of the inevitable compensation, no matter how it is paid.³⁸ While significant examination has gone into the development of plans of how this zone border would work, especially in the time period immediately following discovery of a disease outbreak (Scott Wolfe JDG Consulting Group, 2004), it seems to be a “second best” solution. There has been little work on creating strategies that will reduce the incentives to smuggle that are created when zones have differing disease status and ability to export which results in a price differential between the markets. These need to be developed before an outbreak occurs so they are ready to be implemented quickly, preventing smuggling from occurring at the very onset of an outbreak.

As an export dependent sector, stakeholders in the various agricultural commodities that rely on exports need to continually ask the “what if?” questions and have programs and policies in place to address these contingencies. Canada did not give sufficient consideration to the possibility of discovering BSE within its national herd, creating a crisis which they were not only ill equipped to handle, but was also worsened by the unforgiving standard they previously imposed on all other countries that had ever discovered a case of BSE (Loppacher and Kerr, 2005). The lessons of being unprepared are fresh in the beef industry’s mind, as well as throughout the broader agricultural sector and thus, should assist in securing the necessary resources to ensure agriculture is prepared for the next potential disease outbreak.

Canada has significantly advanced its preparedness to implement regionalization in the last five years. This could be a great benefit to the Canadian industry as control plans have been established and could be implemented quickly, limiting the spread of the disease. Obtaining recognition from trading partners, particularly the US, may take time after the outbreak as Canada will have to prove the safeguards they have put in place to maintain the disease-free zone are working as intended. Canada will benefit significantly if there are more concrete standards created at the WTO establishing the procedure importing countries must follow in accepting or rejecting Canada’s request for recognition of their disease-free area. Canada must continue working to develop their own systems to create disease-free zones, create and communicate a compensation package before an outbreak occurs to prevent smuggling, provide reciprocal treatment to our trading partners that can demonstrate the safety of their products and support the

³⁸Further, a significant limitation of WHL is the fact that 80 percent of the cattle population is in the western zone while almost 70 percent of the human population is in the eastern zone. If a disease outbreak occurs in the western zone, zoning will have done little to protect Canada’s export market as there would be little capacity to export from the eastern region and the majority of the industry could be worse off. This is because if a disease outbreak occurs in the west, they could lose not only their access to international markets but also to 70 percent of the domestic consumers as well. This is not to say that without a formal regionalization program in place there would be free and unfettered access to other regions of the country as movement controls would still be needed to control the disease outbreak. If this occurred, industry members in the west will not be supportive of regionalization and significant economic incentives to cheat will have been created. Compensation packages will be required if the movement restrictions are to be honored. As discussed in the economic model above, additional delimitation of zones will result in greater economic benefits as the area facing export restrictions becomes smaller.

ongoing work occurring at the WTO SPS Committee and the OIE to further the international agreements with respect to regionalization.

Beyond these initiatives, it seems that the issue of economic incentives needs to be formally added to the international agenda. The analysis in this paper suggests that it is an essential co-requisite to strengthening administrative measures. Neither can be fully effective without the other. It appears that putting in place the SPS Agreement and the formal recognition of the Codex, OIE, and IPPC as the standards setting organizations with the laudable ambition of having a science-based, rather than arbitrary, trade regime for SPS issues, has in this case led to an exclusive focus on science-based administrative measures. As a result, important economic facets of disease control on a sub-national basis are perhaps being ignored. The summary of SPS, OIE, and national submissions to those bodies provided in this paper and the appendices serve to illustrate the exclusive focus on administrative measures. There is no mention anywhere of the economic aspects of disease control.

Unless the economic aspects of disease control can be incorporated into the SPS, initiatives to strengthen administrative controls domestically will not bear fruit. It seems clear that some WTO Member States that are active at the SPS understand that exclusive reliance on administrative measures can never ensure a sufficient level of confidence in a sub-national region's disease-free status. How else can one explain the apparently endless negotiations? While those involved may not be able to articulate their concerns, the existence of economic incentives to cheat must be an important factor. Thus, it seems that questions of economic incentives and how to deal with them need to be an integral part of the negotiations. It is clear that much more research will be needed on the design of compensation schemes, although some basic principles have been outlined in this paper, as well as research into the resource trade offs that will be involved in the interaction between economic incentives and administrative measures. The first step, however, is to recognize the importance of economic incentives in sub-national disease control.

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Appendix A: Economic Incentives to Conceal Disease Outbreaks

International reaction to announcements of a disease outbreak and the trade restrictions that follow can create incentives to conceal a domestic outbreak due to fears of losing access to export markets. After the severe economic losses following the discovery of Bovine Spongiform Encephalopathy (BSE) in Canada, the industry began to speculate that they would have been better off had the disease been covered up. Alberta's Premier Ralph Klein stated, "I guess any self-respecting rancher would have shot, shovelled and shut up, but he didn't do that" (as reported by CBC, 2003). While the frustrations that leads to this attitude toward the management of diseases is understandable, the problem with this type of approach is that, on the contrary, risk communication is an absolutely critical component to the efficient management of risks. For example, in the case of BSE, after the agency responsible for food safety in Canada, the Canadian Food Inspection Agency (CFIA), became aware of the presence of BSE in the domestic herd, new safeguards were implemented to reduce the risk of spreading BSE to humans by banning the parts of cattle that carries the infective agent from the human food supply. If producers conceal a disease outbreak because of the economic impacts, valuable opportunities for proper management of the disease may be foregone.

When facing the threat of market disruption and significant economic losses from international applications of SPS measures after the discovery of a disease in the national herd, exporters must make a strategic choice. The exporter can chose an 'honest' strategy and reveal the presence of the disease. This will likely result in "temporary"³⁹ trade disruptions until disease-free status can be regained⁴⁰. In addition, if the importing country believes the exporting country has the proper incentives and safeguards in place to protect human and animal health, they are more likely to ban only the animals, meat and by-products that pose a risk of spreading the disease⁴¹. Proper management of the disease will likely mean domestic consumers retain their confidence in the institutions put in place to protect them and will not lose confidence in their domestic food supply so domestic demand is unaffected. Instead, the exporter could choose a 'cheat' strategy and attempt to conceal the outbreak. If the exporter chooses to cheat, the impact on producer welfare in the country will depend on whether or not the cheating is discovered and if the disease spreads. If it is not discovered, producer surplus will be maximized as there will be no adverse trade effect. If,

³⁹ The amount of time that must pass before market access can be expected to be restored varies widely depending on the characteristics of the disease. For example, a country can regain disease-free status with respect to rinderpest after 21 days without an outbreak if it employs 'stamping out' practices but it takes seven years without a case of BSE to be considered BSE free (CFIA, 2003).

⁴⁰ Even if country does not have disease-free status with respect to a particular disease, the animals affected and their meat and by-products may be able to be exported. Conditions, however, are usually imposed and these conditions will not be removed until disease-free status is regained.

⁴¹ Using the example of BSE again, many countries banned all exports of live cattle and beef following Canada's announcement even though some products carry almost no risk of spreading the disease. The excellent relationship Canada has with the US allowed Canada to resume exports of boneless meat in August 2003 when no other country has ever regained market access to the US after a domestic BSE case.

however, the cheating is discovered, major and long term border closures will likely result. Importing countries will lose confidence in the veterinary service of the exporting country and even after the disease outbreak is brought under control, importers will be less likely to trust that the disease is in fact eradicated. Hence, it will likely take a much longer time to reopen the border because trust will have to be re-established first. Confidence in the relevant regulatory agency was frequently cited as one of the most important considerations of exporters' claims of disease-free areas, whether national or sub-national. In addition, domestic consumers may lose confidence in the safety of the domestic food supply so domestic demand could decrease, further depressing prices. Regardless of whether the cheating is detected or not, sizeable economic losses could occur to both the exporting and importing countries if the cheating results in the unchecked spread of the disease. A decision tree is provided below to illustrate.

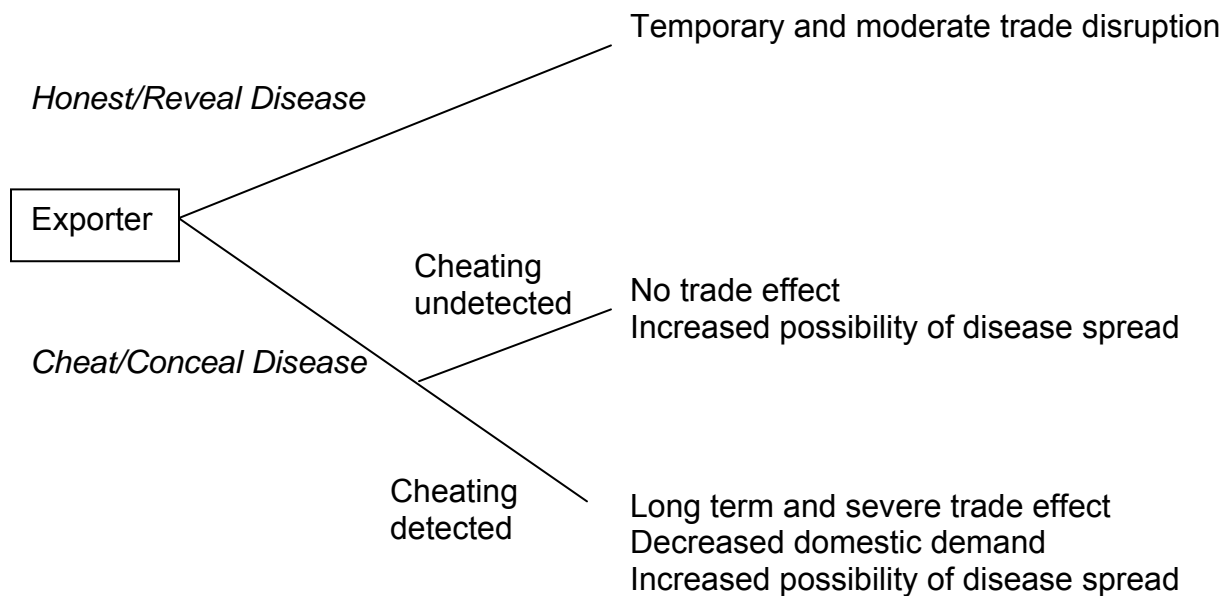


Figure 1 Mapping outcomes and the incentive to cheat

The actions of the exporter will depend on several factors. Firstly, as the probability of cheating being detected increases, the incentive to cheat will decrease. Secondly, the dynamics of the disease in question will affect the incentive to cheat. As the possibility of disease spread and the economic losses associated with that disease spread increases, again, the incentive to cheat will decrease. Also, if failing to reveal the disease is viewed to have a negative impact on human health, the incentive to cheat will decrease. Finally, the decision of the exporter will depend on how the producer surplus in each outcome changes. As shown above, if regionalization can be used, the

decrease in producer surplus after the discovery of a disease in the domestic herd may well be smaller than if exports from the entire country are affected. The smaller the 'temporary and moderate' expected trade disruption is after the announcement of a disease, the less likely it is that the exporter will risk facing the long term, severe trade effect combined with decreased domestic demand and increased possibility of disease spread. Thus, the incentive to conceal a disease outbreak is lessened through regionalization.

Appendix B: Member's Experience with Regionalization

European Union Submissions

Regionalization is an important risk management tool utilized in the EU. When the EU saw the completion of the Internal Market in 1992, all border controls, including veterinary and phytosanitary checks, were abolished. There is significant variance among Member States in the EU pertaining to their animal health situations arising from a number of factors including ecological conditions, geographic barriers and historical disease control mechanisms. As such, the application of SPS measures based solely on national borders or on the EU as a whole would not be appropriate and thus regionalization is utilized. Although the concept of regionalization had been present in the EU SPS legislation long before the establishment of the internal market, after the border controls were abolished, the policy was reinforced and extended to cover all the pests and diseases of major concern. In the case of animal diseases, the EU applies this concept for FMD, classical swine fever, avian influenza, Aujeszky's disease and Infectious Bovine Rhinotracheitis (IBR). Depending on the characteristics of the disease, the EU may require the creation of buffer zones that partially restrict trade in areas that separate infected areas and areas that trade freely (WTO, 2003j). In a submission to the SPS Committee, the EC stated,

We consider regionalization for infected regions as the application of strict controls to a country or part of a country where a disease exists, in order to control and eradicate it while preventing the spread to other areas, thus permitting free movement of animals and products outside the affected areas, irrespective of the country's borders and without risk of extension of the disease to other areas.
(WTO, 1998)

The EU believes a risk assessment should be conducted to identify the risk present in a zone or region to determine the appropriate SPS measures to utilize to protect human and animal health. The EU outlines a number of elements that should be considered in the risk assessment but states that that the primary element to be taken into consideration is the competency of the certifying authority involved. When applying regionalization in the EU, geographical features, vector studies, meteorological conditions, epidemiological data and administrative boundaries are used to define a region. The EU Food and Veterinary office carries out inspection missions to check on implementation by member States. Monitoring inside and outside the area must be carried out routinely (WTO, 1998 *G/SPS/GEN/101*). Regionalization was an important control technique in the FMD epidemic in 2001. After cases were discovered, the region surrounding the outbreak would be prohibited from exporting any live animals, fresh meat and meat products, milk and milk products and other animal products. This allowed trade between unaffected member States and with third countries to continue unaffected. As the epidemic was brought under control, disease-free areas were slowly expanded as the disease situation would allow. The EU states regionalization provided

a focus for targeted measures in areas affected by the disease but allowed disease control and prevention strategies to be gradually repealed without impacting areas that were already free of FMD. It allowed trade to resume in a much shorter time period than would have otherwise have been possible (WTO, 2003j). While not mentioned in this science-based submission, compensation for producers affected by FMD was apparently sufficient to remove the incentive to smuggle.

The EU states that it places a high priority on having external trade partners recognize their regionalization and is willing to recognize regionalization in other trading partners' territory. The EU has brought a number of concerns to the SPS Committee regarding "unjustified" import restrictions. Some of the issues they raised included import restrictions on exports from Germany, Belgium and the Netherlands due to highly pathogenic avian influenza although they had regained their disease-free status in November 2003, restrictions on exports from France, Italy and Spain due to classical swine fever and restrictions on exports from anywhere in the EU because of foot and mouth disease despite the fact all States were officially free of FMD. They stated that the EU continued to recognize areas as being disease-free in several WTO Members' territory when these Members failed to recognize regionalization in the EU. The EU continues to promise to provide all necessary information to demonstrate its disease-free status to any WTO Member (WTO, 2005e). Countries for which the EU had applied regionalization up to the end of 2003 include Argentina, Australia, Botswana, Brazil, Bulgaria, Canada, Columbia, Costa Rica, Czech Republic, Egypt, Kyrgyzstan, Mexico, Paraguay, Peru, Russia, Saudi Arabia, Slovakia, South Africa, Turkey, United States and Venezuela on diseases such as FMD, bluetongue, classical swine fever, African Horse sickness, Newcastle disease, dourine, Venezuelan equine encephalomyelitis and general health conditions for horses (WTO, 2003j).

South American Submissions

Argentina Submissions

The most significant animal health problem faced by Argentina is foot and mouth disease. The National Foot-and-Mouth Disease Eradication Plan was started in April 2001 with the objective of eradicating FMD from Argentina and to move toward the creation of subregional blocs which could be internationally recognized as FMD-free areas. A number of policy measures accompanied the plan such as establishing regions, controlling the movement of animals and animal products, creating information systems and managing the vaccination program. One region south of the Río Negro and the Province of Neuquen has been declared FMD-free where vaccination is not practiced⁴². The entire bovine population is vaccinated in all other areas. A variety of surveillance strategies have been implemented. There are now 61 markets open to

⁴² Vaccination is an important component of preventing FMD in regions where complete eradication is unlikely. As such, the OIE recognizes two types of regions: FMD-free where vaccination is not practiced and FMD-free where vaccination is practiced. The distinction is made because additional safeguards must be undertaken in the region that practices vaccination to ensure the animals have not come in contact with the FMD virus as the vaccination prevents infection and clinical signs from developing but the animals could spread it to non-vaccinated animals.

bovine meat from regions in Argentina. Argentina has welcomed the inspection by international experts from the EU, the US, Chile, Russia, Thailand, Philippines, Morocco, Ecuador, Venezuela, Paraguay, Uruguay and Brazil (WTO, 2003e).

Argentina also submitted information that is very illustrative of the types of problems exporters encounter when attempting to utilize regionalization. Argentina declared provinces in Northwest Argentina as free from citrus canker, a plant pest. Argentina entered negotiations with one WTO Member (which was not identified) to obtain recognition of the different status for the disease-free region versus the region affected by the disease. A large amount of information was exchanged to facilitate this process and even though this Member has modified its import requirements twice, it always recognized the different status of the regions concerned and did not disrupt the flow of goods. However, with a different unidentified Member, despite efforts beginning in 1995, Argentina was not able to export to the Member. In 1999 the Member recognized Northwest Argentina as free from citrus canker, five years after the regional reference body recognized Northwest Argentina as disease-free. As a result of recognition being granted, Argentina drew up a Work Plan for the export of fresh lemons, oranges and grapefruit. However, the Member never approved the Work Plan and trade did not occur (WTO, 2003f).

Colombia Submissions

Colombia has also struggled significantly with FMD within its borders. Colombia first had a zone recognized by the OIE as FMD-free without vaccination in 1997 and this status has since been renewed annually. In May 2001, 2003 and 2005 additional zones were recognized by the OIE as FMD-free with vaccination. There is one zone in the center of the country that is classified as the endemic zone. The last outbreak occurred in February 2005, 29 months after the last confirmed outbreak (OIE, 2005a). Approximately 50 percent of Colombia's bovine population is located in the zones recognized as being FMD free which makes up about 24 percent of the total land area of the country. Colombia has established 58 control points that are strategically located in accordance with the epidemiological status of the zones, movement patterns and productions systems. These control points ensure compliance with established standards (WTO, 2004g).

Paraguay Submissions

Paraguay is officially recognized by the OIE as a FMD-free country with vaccination. Programs to control FMD were created in the 1960s and following their success, programs to eradicate FMD were established in 1992. Paraguay first received OIE recognition as FMD-free with vaccination in 1997. The vaccination program was terminated in 1999 in the hopes of obtaining recognition as FMD free without vaccination. However, disease outbreaks in Argentina and Brazil in 2000 in provinces bordering Paraguay necessitated the reimplementing of vaccination. In September of 2002, a Brazilian vet called by a Brazilian rancher whose property straddled the Brazil/Paraguay border found a FMD suspect animal on the Paraguay side. Brazil and Argentina immediately banned all exports of Paraguayan meat and animal products. As a landlocked country with no access to the sea, the inability to transport through

these countries meant a virtual blockade of their agricultural exports until an agreement was reached at the beginning of November with the Argentinean government which allowed Paraguay to export products that posed no risk of transmitting FMD to third countries. Regionalization was utilized to isolate the affected area from areas authorized to export to its most important export market, the EU (WTO, 2002).

Peru Submissions

Similar to the other South American countries whose concerns at the SPS Committee have already been highlighted, Peru's most significant animal health problem is FMD. As of August 1, 2003, 93 percent of Peruvian territory, accounting for 83 percent of Peru's bovine population is a zone recognized as FMD-free without vaccination. Peru was able to achieve this by adapting a Regulation on the Control and Eradication of Foot-and-Mouth Disease. As part of this plan, Peru upgraded, expanded and refined their epidemiological surveillance system. In addition, Peru created and implemented intensive and systematic vaccinations in border areas considered to be at high risk and quarantine protection measures for areas that have been declared free of the disease (WTO, 2003h). Peru has also implemented plans for the control and eradication of poultry diseases. One of the primary objectives of the program is to obtain recognition of zones free from Newcastle disease and avian influenza so their poultry products can gain access to the world's most demanding markets (WTO, 2003g).

Brazil Submissions

Brazil's successful regionalization of FMD has allowed it to become the second largest producer of beef in the world after the US. As mentioned above, Brazil has been working to control FMD for almost 40 years and adopted the goal of eradication in 1992. Their first FMD-free zone was recognized in 1998 which has since grown to the point where now about 50 percent of the national territory, 75 percent of all bovine farms and 84 percent of the bovine population are in FMD-free zones. Brazil utilizes large buffer zones based on natural and geographical barriers, official quarantine and animal movement control and a vaccination coverage of about 95 percent of the country's cattle population to maintain their FMD-free zones. Using exports of fresh bovine meat as an example, Brazil found a direct correlation between the enlargement of the FMD-free zone and the increase in the number of importing countries. Brazil has moved from 36 importing countries accepting Brazilian exports at the end of 1998 to 109 countries in 2005. A significantly contentious issue for Brazil is, however, that only two of the seven major bovine fresh meat importers buy from Brazil⁴³. In addition, even the two countries that are open to Brazilian fresh meat exports apply trade restrictions related to FMD. In their submission, Brazil states, "one can draw the conclusion that the most important restriction for Brazil's exports of fresh bovine meat is still the lack of recognition of Brazil's FMD-free zones, established in accordance with OIE standards" (WTO, 2005a).

⁴³ The seven major beef importers are Canada, Japan, Korea, Mexico, Russia, the European Union and the U.S. The European Union and Russia accept fresh meat from Brazil. Other countries, for example the United States, import large quantities of beef that has been processed, killing the FMD virus and nearly eliminating any chance of disease spread.

Mexico Submission

Mexico's submission focused on their efforts to establish fruit fly-free areas. The Mexican Ministry of Agriculture plan was to eradicate the pest in regions where the ecological conditions allowed and reduce the population density in the others. Recognition by the US is Mexico's primary goal as the vast majority of Mexican exports are destined for the US. This recognition allows Mexico to export products which host the pest such as apples, apricots, grapefruit, oranges, peaches, plums, persimmons, pomegranates and mandarins. Up until October of 2003, Mexico had requested the US recognize additional pest free areas six times. All of these cases took at least two and a half to five years from the time Mexico made the request to the US to obtaining recognition (WTO, 2003i). Given that the Mexican government follows the same guidelines for establishing and declaring all fruit fly-free zones before requesting recognition from the US, a minimum delay of two and a half years after repeating the process six times suggests administrative delays are very significant.

United States Submission

The US submission to the SPS Committee focuses on accepting other Member's requests to have a region recognized as disease or pest free. The United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) amended its regulations in 1987 to establish criteria under which importation of fruits and vegetables from definite areas or districts would be allowed. This was a result of lobbying from the Mexican government. APHIS published a statement in 1997 setting out its policy regarding recognition of animal disease freedom on the basis of areas defined by factors other than national borders. A significant factor for the US in recognizing regionalization is the credibility of the veterinary service in the exporting country. Other factors the US considers include risk assessments, evaluation of veterinary or phytosanitary infrastructure in exporting region, risk management options in the country and availability of scientific information (WTO, 2004f). In the 2004 Trade Policy Review of the United States, the EU asked the United States for the reasons for the "continuing lack of U.S. recognition of the principle of regionalization, as incorporated in the WTO SPS Agreement, in cases of the outbreak of an animal disease" (WTO, 2004m). The US responded by highlighting an example where APHIS had recognized regionalization in Europe with respect to animal diseases. The US has recognized Austria, Belgium, Greece, Portugal, the Netherlands, and certain regions of Germany and Italy as free of Classical Swine Fever (WTO, 2004m).

All reference information in Appendix B is available in the reference list following the main paper.

Appendix C: Chronology of Negotiations on Regionalization at the SPS Committee

The implementation of Article 6 was identified by the Committee on Sanitary and Phytosanitary Measures (SPS Committee) as an issue that required further work during the First Review of the SPS Agreement in 1999 and it has been an agenda item of every single meeting of the Committee of the WTO since 2003. While all countries are officially supportive of the basic principles of creating sub-national zones in a country according to the disease status of the area, exporting countries often experience great difficulty in getting sub-national zones recognized by trading partners. Discussions on regionalization have centred on this topic. In the 1999 review, the SPS Committee noted that “recognition of pest or disease-free areas or areas of low pest or disease prevalence could facilitate trade in agricultural products” but that “Members faced difficulties in implementing the Article” (WTO, 2004i). Some of the issues that caused difficulty for Members included excessively lengthy administrative processes for official recognition of a region from which exports would be accepted by importing countries, divergences in interpretation and implementation of international guidelines, and the complexities involved in risk assessment. Discussion of these problems appears to have resolved little. The Second Review of the SPS Agreement completed in 2005 stated exporting countries still suffered from delayed recognition of their pest- or disease-free status by importing countries and that procedural issues were still a major impediment (WTO, 2005d). The following details the progress of the discussions.

Negotiations and Proposals in 2003

Chile has been one of the most active participants in discussions on how to improve the implementation of Article 6. In preparation for the April 2003 meeting of the SPS Committee, Chile raised several concerns regarding delayed recognition of disease-free zones. Firstly, the OIE grants official recognition of disease-free areas but many importing countries do not automatically accept these. Secondly, administrative procedures required by importing countries are usually very complex, slow and differ from those established by the OIE. Chile made several suggestions for improvement. Chile believed work needed to be done to clarify the valid procedure to be followed. Although importing countries do not automatically adopt OIE verifications, they felt the OIE should verify other important diseases⁴⁴. Finally, Chile suggested work should be done on reviewing the corresponding standards in order for all countries to be able to raise any doubts, so as to update standards that are adopted without difficulties about subsequent application (WTO, 2003c).

Chile submitted additional information to stimulate discussion for the meeting in April 2003. In an attempt to remove delays in the recognition procedure, Chile identified a number of factors which can cause delays. The reasons identified were:

- Information quality
- Timeliness of the information

⁴⁴ Currently the OIE provides verifications for only foot and mouth disease, bovine spongiform encephalopathy (BSE), rinderpest and contagious bovine pleuropneumonia.

- Flexibility in the analysis process
- Lack of adequate channels of communication
- Lack of transparency in information procedures
- Asymmetry in technical and operational capacity
- Requests for irrelevant information (protectionism, technical capacity)
- Lack of harmony in procedures
- Lack of technical and operational resources at national level to address the number of requests effectively (WTO, 2003a)

Chile proposed a procedure that could be adopted by the SPS Committee to help reduce ambiguity to facilitate quicker recognition. They recognize that each of these stages would require close cooperation between the importing and exporting countries to be able to achieve an adequate level of protection. Chile recommended that audits and verifications are conducted to ensure countries are performing the actions they promised. This procedure is as follows:

- Requirement of an official request, usually by the competent national health authority (plant health or veterinary service, depending on the case);
- Request for information, often using questionnaires on the organizational and operational aspects of the veterinary or phytosanitary services, epidemiology, surveillance, quarantine systems and programmes dealing with emergencies and health warnings;
- Analysis of the information and evaluation of the sufficiency thereof;
- Visit to the area in question, if deemed necessary, for on-site verification of the information received;
- Technical analysis;
- Adaptation of procedures on a bilateral basis;
- Issuance of an acceptance or rejection report.
- Making the report available for public consultation at the national level;
- Issuance of the legal instrument recognizing the free area. (WTO, 2003a)

Later that year, Mexico submitted a document which stated they supported Chile's suggestions and made additional recommendations. Mexico's suggestions for procedures generally followed the Chilean model but included recommended time frames. For example, after an exporting country submits a written request for recognition along with a technical file substantiating their claim, an importing country should have to submit whatever comments it considers relevant or suggest a date for officials to inspect the area or region in question within a maximum of two months. Mexico also stated that exporting parties shall be responsible for financing such inspection visits (WTO, 2003b).

At the October 2003 SPS Committee meeting, Chile submitted a proposal of a Draft Decision on the Implementation of Article 6 of the Agreement on the Application of Sanitary and Phytosanitary Measures. The Draft Decision contained a number of noteworthy provisions. Firstly, it reaffirmed that transparency, exchange of information and the promotion of confidence and credibility among trading partners was essential to the recognition of SPS status among Members. Secondly, it stated that the application

of the “principle of regionalization” provides an effective way to ensure trade opportunities are not wasted. As such, it proposed some of the following:

- SPS recognition shall not require the drafting of a formal agreement.
- Importing Members shall explain the requirements and stages involved in obtaining recognition of SPS status with respect to a given disease.
- Importing countries shall respond as quickly as possible to requests from exporting Members for recognition of regionalization (not to exceed two months).
- The exporting Member shall provide information to support its demonstration of SPS status including, *inter alia*, reference to relevant international standards, or relevant risk assessment guaranteeing or largely supporting the SPS status of the zone in question.
- The importing Member shall not impose demands in excess of those relating to the disease in question and shall analyze the information to determine whether their SPS measures achieve the adequate level of protection against the risk under consideration.
- If the importing Member agrees the exporting Member’s efforts are sufficient, the importing Member shall ensure its decision to recognize the regionalization shall not take more than three months to implement.
- If the importing Member rejects the request, they must provide technical grounds for its decision so that the exporting Member can modify and adapt its system with a view to seek recognition again.
- Members shall give full consideration to requests by another Member, especially a developing country, for appropriate technical assistance to facilitate the implementation of Article 6.
- The SPS Committee recognizes the need to continue to develop guidelines for the determination of disease-free areas and areas of low disease prevalence and shall urge the OIE to continue, as appropriate, to draw up guidelines on animal health (WTO, 2003d)

Negotiations and Proposals in 2004

The European Union responded to Chile’s Draft Decision submitted at the October 2003 meeting by submitting a very slightly altered version. The only significant changes were to include statement saying that the expenses related to inspections and tests to demonstrate a SPS status should not be born by the exporting Member and removing the deadline of three months for an importing country to implement a positive determination and replacing it with “no later than a deadline to be established” (WTO, 2004d). Many delegations supported Chile’s proposal when it was discussed in detail at the June 2004 meeting. They suggested that work was needed both at the technical level by the OIE but also trade facilitating guidelines from the SPS Committee. They suggested further work was necessary in the SPS Committee similar to what had already been done for equivalence, consistency and transparency (WTO, 2004l).

In preparation for the March 2004 SPS Committee meeting, Canada submitted a proposal for a Decision on the Implementation of Article 6 of the Agreement on the

Application of Sanitary and Phytosanitary Measures. This proposal reaffirmed the international obligation to adapt SPS measures only to the extent necessary to protect human and animal health. It also recognized that regionalization is an increasingly important issue to trade amongst all countries and that it can be applied between all Members, irrespective of their size and development. The most significant part of the proposal was in relation to the division of labour that should occur between the WTO SPS Committee and the OIE. It reminded Members that Article 12 of the SPS Agreement encourages the SPS Committee to maintain close contact with the relevant organizations in order to ensure that unnecessary duplication of effort is avoided. As such, it stated that the SPS Committee shall urge the OIE to continue, as appropriate, to draw up guidelines on animal health. They shall be invited to regularly inform the SPS Committee of their activities. Members shall provide the SPS Committee with information on their experiences with a view to developing best practices (WTO, 2004c). In practical terms, Canada was stating that the SPS Committee should only be used to facilitate information exchange and not be working to create guidelines for the implementation of Article 6 but rather leaving it to the OIE. When this proposal was discussed in greater detail at the Committee meeting, a number of delegations supported this proposal. They noted that regionalization was a technical issue and thus was best dealt with by the OIE. They also suggested it was not feasible to create general guidelines with timelines due to the differences in specific diseases and pests as well as in regulatory system of countries (WTO, 2004l).

Just after the March 2004 SPS Committee meeting, the US submitted a document with its views on regionalization. The US made several points based on their experience with regionalization. Firstly, any regionalization decision must consider the strength and credibility of the authorities responsible for animal health in the exporting region. A key element in establishing confidence in other countries is a Member's timely, consistent and accurate disease reporting as called for by the OIE. Secondly, regionalization must be based on science and a risk assessment that takes into account the biology of a particular disease and an evaluation of the veterinary infrastructure in the exporting region. Thirdly, the availability and quality of scientific information will dictate to a great extent the length of time and the complexity of the risk assessment. Fourthly, regionalization decisions must be reached in an open and transparent manner, allowing relevant input from all parties. Lastly, the US stated work was needed to address the situation where a region was previously recognized as free, has had an outbreak but has regained its free status. The US stated that it considers the OIE to be the appropriate body to undertake the task of developing guidelines for reaching regionalization decisions (WTO, 2004f).

After the June 2004 SPS Committee meeting, Peru submitted a proposal on Article 6. Peru noted that it costs as much if not more to maintain a disease-free status as to obtain it and maintenance mainly depends on the degree of commercial benefit that the producers gain from the status. Uncertainty in the recognition of disease-free areas puts the sustainability of such areas at risk. Peru also noted that the principles of Article 6 had already been considerably developed by guidelines by the OIE but that the administrative procedures required by importing countries are not clearly defined, are

very complex, expensive and slow and there are no clearly defined time-limits for response. As such, Peru felt it was necessary to differentiate between the procedures and time frames that are required for disease-free areas to be established and declared and the procedures and time frames required for the evaluation and recognition of disease-free areas by an importing Member. In the latter case, there must be certainty in law as to the administrative procedures to be followed by both the exporting and importing country so that recognition can be completed once the status of disease-free area has been obtained. In consideration of this, Peru proposed a number of procedures and time frames that should be applied.

- Areas internationally recognized by the scientific reference organizations for the SPS Agreement shall be accepted by the Member countries using a simplified procedure consisting of a request by the exporting Member accompanied by a technical dossier and the decision of the international reference organization.
- The exporting Member may demand information from the importing Member regarding its specific requirements and procedures for recognition of a disease-free area with respect to a particular disease.
- After an exporting Member makes a request for recognition along with the technical dossier used for the national declaration of recognition, they shall notify the SPS Committee of the initiation of the process within two months of the submission of the request to the importing Member.
- The importing Member shall examine the request within a period not exceeding three months and within that period inform the exporting Member if it needs to carry out an inspection visit to verify information. Following this, the importing Member shall issue an evaluation report.
- If the evaluation report contains comments, the exporting Member shall respond within two months to provide the relevant clarifications, additions or modifications.
- If necessary, the importing Member shall carry out an inspection visit and within two months of the conclusion of the visit, shall issue the corresponding report. The exporting Member shall respond to the report within two months.
- Following the receipt of the exporting Member's comments, the importing Member shall issue its decision approving or rejecting the decision within two months.
- If it is a favourable decision, the importing Member shall carry out the internal administrative changes to eliminate the restrictions and allow exports from the Member that requested recognition within three months.
- If the decision is unfavourable, the importing Member shall provide the technical grounds for its decision to allow the exporting Member a chance to make the necessary changes and reapply.
- The exporting Member shall notify the SPS Committee of the results (WTO, 2004a).

In September of 2004, New Zealand made a submission in which they stated their concern that despite a large number of proposals made to the Committee, there was no clear way forward on the issue of regionalization. Like Canada, New Zealand

expressed the desire to avoid unnecessary duplication of effort. The submission highlighted some of the concerns that have been raised in discussions at the SPS Committee. They grouped these into three main concerns. Firstly, there are no administrative procedures in the form of an international standard or guideline for recognition of disease-free areas. This includes the lack of defined time limits for responses. Secondly, Members are concerned about the limited utilization of official recognition by the OIE. This is because the OIE carries out evaluations and grants recognition of sanitary status for only four diseases and some importing Members do not automatically or speedily accept such recognition. Finally, Members are concerned about the uncertainty involved in obtaining and maintaining disease-free status. This is a result of many factors including that administrative procedures required by importing Members can lack transparency, be complex, expensive, slow and not always clearly defined, there are currently no clearly defined time limits for responses, the time taken to recognize an area can vary from a few months to several years and, finally, administrative procedures between Member lack consistency. New Zealand proposed that the SPS Committee invite the OIE Secretariat to examine, *inter alia*, if it would be appropriate for them to develop and include administrative procedures within their international standards, recommendations or guidelines, the technical feasibility of ascribing defined time limits to the consideration of regionalization requests under existing international standards, recommendations or guidelines and the process for Member acceptance of OIE recognition of disease-free status (WTO, 2004e).

China submitted comments for the Second Review of the Operation and Implementation of the SPS Agreement and regionalization was one of four areas of concern addressed. China stated their primary goal is to facilitate reducing the negative effect of the SPS measures on international trade through more consistent and effective implementation of the SPS Agreement by all Members. China reiterated the difficulties that have been experienced in obtaining recognition from importing Members including divergences in interpretation and implementation of international guidelines, an excessively lengthy administrative process by importing Members and the complexities often involved in risk assessment. China put forward a number of proposals in order to facilitate international trade. China proposes to take full advantage of the OIE in recognizing disease-free areas and areas of low disease prevalence, in order to avoid redundant work, reduce disputes, shorten the recognition period and lower costs. China suggested the OIE should expand the diseases which it will declare countries as being free from to include, *inter alia*, highly pathogenic avian influenza, Newcastle disease and Swine Fever. Once certain areas are recognized by the OIE as disease-free, the importing Member should not make any additional new requirements for recognition. China also states that Members should publish their own recognition agencies, standards, procedures and estimated time period for each step and notify them to Members through the Secretariat. This will help the exporting Member to confirm if it complies with the requirements for disease-free areas of the importing Member. China also called on developed countries to provide developing countries with as much technical assistance and special and differential treatment as possible by, for example, exempting developing countries from being responsible for the costs incurred in arranging for investigations by the importing county (WTO, 2004k).

Chile submitted two documents just before the October 2004 meeting to clarify their position and respond to questions from the Chairman of the SPS Committee. Chile firmly stated that their aim was to strengthen and in no sense replace or duplicate the work of the OIE but fill the need for a framework or guideline for the process of recognition that takes place after a country has attained the status of being disease-free. Chile wishes to see changes which more clearly define the rights and responsibilities in the importer/exporter relationship. Chile also noted the situation when countries' appropriate level of protection is higher and admission requirements are stricter than international norms. They state that such countries would have to justify that situation or propose changes within the OIE if there is a firm scientific basis for such a change (WTO, 2004b). Chile states the role of the SPS Committee should be to oversee the application of the principle in such a way as to ensure that international standards are observed or that there is just cause for any departure, while preventing delays from becoming unjustified barriers to trade while the role of the OIE is to draw up technical and scientific guidelines or recommendations regarding appropriate SPS measures to apply in different situations. Chile also states that it is necessary to generate greater commitment among Members to recognize the verification process of the OIE. With regards to time frames, Chile states that periods established by the OIE for determining when an area is free of a disease should not be subject to discussion, since this involves scientific determination. What Chile thinks should be addressed by the SPS Committee is the administrative time frames for recognition of a given sanitary status (WTO, 2004h).

In December 2004, Argentina submitted comments for the Review of the Operation and Implementation of the SPS Agreement. Argentina stated that it considers the work being done by the OIE not only shows significant and consistent progress but also reflects the Members' concern to make headway in controlling diseases. However, in many cases Members efforts to raise their sanitary status are not rewarded by better market access conditions, owing to the difficulty in obtaining due recognition by importing Members. Argentina notes that they have experienced these difficulties, in particular the excessively lengthy administrative process. As such, Argentina stated they believed that the SPS Committee should devise a procedure for the recognition of disease-free areas including provision for the inclusion of other issues, as well as strictly technical and/or scientific ones and establish a general framework for addressing trade commitments which is the specific domain of the SPS Committee even if it eventually becomes subject to specific OIE technical regulations (WTO, 2004j).

Negotiations and Proposals in 2005

In February of 2005, Chile submitted a proposal that it hoped would further the discussions concerning regionalization at the SPS Committee. Chile acknowledged that while some Members felt the Committee should be developing guidelines similar to those developed for the implementation of the principle of equivalence, certain Members were not convinced of the need to develop such guidelines on the grounds that there would be problems of duplication with the OIE. In view of that, they proposed

four measures aimed at furthering the discussions while at the same time providing the mechanisms to help implement the regionalization principle. Firstly, all countries should fill out the questionnaire sent out by the SPS Committee Chairman on 5 October 2004. Chile feels this will reiterate the distinction between the role of the Committee and that of the OIE and clarify the work to be done in each case. The replies will allow countries to explain the reasons behind their desire or opposition to creating guidelines in the SPS Committee and thus provide a basis for seeking consensus. Secondly, Members should make use of the results of the discussions on this topic at the OIE. Thirdly, the SPS Committee should include a heading in the notification system which information would be provided on initiation and termination of processes of recognition of disease-free areas. Finally, the agenda of the Committee meetings should include two sub-items: a) information from Members regarding requests and recognition of sanitary and phytosanitary conditions; b) information from the scientific organizations on their progress and other elements they wish to discuss with respect to regionalization (WTO, 2005c).

Just prior to the March 2005 SPS Committee meeting, Australia submitted its view on the issue of regionalization. Australia pointed out that the OIE had a work program relating to Article 6 and was working on expanding the chapter relating to regionalization. Australia proposed the SPS Committee invite the OIE to consider and advise the Committee on a number of matters such as whether there is a need for the OIE to develop general guidelines regarding the implementation of Article 6 to assist both exporting and importing Members, how to best ensure a consistent and coordinated approach to these matters by the international standard setting bodies (the OIE and the IPPC), the role of the OIE in relation to the SPS Committee in addressing administrative as well as technical aspects of regionalization in any guidelines on regionalization and the technical feasibility of assigning specific time limits to specific steps in the process of considering regionalization requests. Australia recommended deferring further consideration of the specific question of whether the Committee should develop guidelines for Members on the application of Article 6 until the advice from the OIE was received (WTO, 2005b).

An informal meeting specifically on regionalization was held just before the March 2005 SPS Committee meeting. The meeting centred on the submissions from Chile and Australia explained above. Members indicated broad support for the two proposals and suggested that a practical solution was to be found in the combination of the two proposals. However, several issues were highlighted during the discussions. These included Member's frustration and impatience with the practical difficulties in implementing Article 6, the divergent views over the issue of administrative guidelines and criteria and concerns about the role of the OIE and the SPS Committee. A number of Members proposed the Committee work on the elaboration of general administrative guidelines but without details on timeframes and procedures. However, several Members stated the Committee should await responses from the OIE to the Committee's questions before proceeding to develop guidelines. One Member pointed out that while the problems the Members experienced with the implementation of Article 6 appeared to be trade related, the root of the problem was often related to animal

health. The Chairman proposed that: 1) the Committee submit specific questions to the OIE based on those in the Australian proposal in time for their meeting in May 2005; 2) Members be encouraged to respond to the Chairperson's questions; 3) the issue of regionalization be included as a standing agenda item for Committee meetings; 4) a workshop be organized in June to discuss the issues in more depth; and 5) a draft work programme, and of the questions to be submitted to the OIE be circulated for consideration at the regular meeting of the Committee. Members were in broad agreement with the proposal but some were concerned that the Committee continue to address the issue of establishing general administrative guidelines (WTO, 2005f).

Discussions at the March 2005 meeting regarding regionalization centred on the draft work program. The representative from Paraguay felt the work programme proposed by the Chair failed to reflect some of the concerns expressed in the informal meeting. Argentina, Brazil, Chile, Colombia, Costa Rica, Peru and Uruguay supported the view that the main purpose of the work programme was the elaboration of the guidelines and was for Members to discuss how general or how specific the guidelines should be. The representatives of Australia, Canada and the US indicated that they could accept a work programme which provided for the "possible" elaboration of general guidelines. While these countries felt the OIE would be best to develop over-arching guidelines, they were willing to adopt the proposed work programme in the spirit of moving the issue forward but continued to stress the guidelines should be broad and general. The representative of EU had no objections to the drafting of general administrative guidelines by the SPS Committee but was concerned that this did not result in delays in achieving the practical implementation of Article 6. Japan stated that they could accept the draft work programme with the proposed amendments but opposed the inclusion of working on specific time frames and guidelines. Chile responded by stating that their suggestion that the Committee consider the inclusion of specific timeframes in any guidelines had been put forward only as a possibility to be considered by the Committee, not as a definitive proposal. The Chairperson concluded that there was no consensus in the Committee to adopt the draft work programme (WTO, 2005f).

All reference information in Appendix C is available in the reference list following the main paper.

Appendix D: OIE Newly Adapted Chapter on Regionalization

Chapter 1.3.5 – Zoning and Compartmentalization⁴⁵ was adopted at the 73rd Annual General Session of the OIE held on 22-27 May 2005. The OIE was responding to requests from the WTO to further the work on regionalization. For the purposes of the Terrestrial Code, zoning and compartmentalisation are procedures implemented by a country with a view to define subpopulations of different animal health status within its territory for the purpose of disease control and/or international trade. Zoning is when the subpopulation is based on geography and compartmentalisation is based on management systems related to biosecurity. The OIE states that the procedures in the Chapter are best implemented by trading partners before a disease outbreak. Some of the most important provisions of Chapter 1.3.5 – Zoning and Compartmentalisation are summarized below:

- Zoning may encourage the more efficient use of resources within certain parts of a country to allow trade in certain commodities from the zone
- The procedures used to establish and maintain the distinct health status of the zone should be appropriate to the particular circumstances, and will depend on the epidemiology of the disease, environmental factors, applicable biosecurity measures (including movement controls, use of natural and artificial boundaries, commercial management and husbandry practices), and surveillance and monitoring.
- The extent of a zone and its limits should be established by the Veterinary Administration on the basis of natural, artificial or legal boundaries.
- Animal and herds belonging to the subpopulation need to be clearly recognized as such.
- There is no single sequence of steps which must be followed in defining a zone but the recommended steps are:
 - the exporting country identifies an area that could potentially be a zone
 - the exporting country identifies the procedures which are being used or could be used to distinguished the area from other parts of their territory
 - the exporting country makes a request of importing country and provides information
 - the importing country determines if it will accept the area as a zone taking to account an evaluation of the exporting country's veterinary service, the result of a risk assessment, its own animal health situation with respect to the disease concerned and other relevant OIE standards
 - the importing country notifies the exporting country of its determination within a reasonable period of time
 - attempts should be made to resolve any differences of opinion by using an agreed mechanism to reach consensus

⁴⁵ The entire text of the Chapter can be found online on the OIE's website at http://www.oie.int/eng/normes/mcode/en_chapitre_1.3.5.htm

- the importing and exporting country enter into a formal agreement defining the zone (OIE, 2005c)

All reference information in Appendix D is available in the reference list following the main paper.