

**International Agricultural Trade
Research Consortium**

**NONTARIFF AGRICULTURAL TRADE
BARRIERS REVISITED***

by

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INTRODUCTION

Terminological, as well as substantive, problems with other-than-customs-duty trade protection issues have existed for a long time. After World War II, these problems proved troublesome for trade analysts. Baldwin [1970], Denton and O'Cleiracain [1972], and Lloyd [1973] were among the first who helped clarify language and ideas. Unlike many at that time, I chose to stick with "nontariff barriers" as a generic shorthand to describe a world of government measures, other than tariffs or customs taxes, which restrict or distort international commerce between domestic and imported goods and services. Viewed in this simple fashion, **nontariff barriers [NTBs]** came to mean the totality of instruments, other than customs duties, which restrict international trade.

As to substance, the nontariff barrier issue wasn't new even in the early nineteen fifties. It was getting little attention, however, particularly in agricultural circles. International trade, itself, was a subject which was far down the list of issues important to U.S. policy circles, which were occupied mainly with "parity" prices, supply controls, and product utilization schemes. Most everyone appeared blithely to assume that the United States would continue to be indefinitely a creditor nation and a residual supplier of agricultural products to the world market. About the only works relating to agricultural trade were a 1920s book by Nourse [Nourse, 1924] and Gale Johnson's work on the trade policy dilemma of U.S. agriculture [Johnson, 1950].

As to nontariff protection studies, they were almost nonexistent, and Bidwell's excellent treatise **The Invisible Tariff** seems to have gotten lost during World War II. I still

find it difficult to comprehend why this work is almost universally absent in modern NTB bibliographies. Hence, one sub-theme of my presentation is that one should not be surprised at the early neglect of the NTB topic by academics and policy makers. Agricultural protection in general was not fashionable research in the United States for a period of 40 to 50 years, beginning in the early 1930s. I have examined the inward-looking U.S. agricultural policy during that era elsewhere in a book that was a very early product of the International Agricultural Trade Research Consortium [IATRC, or Consortium]. [McCalla and Josling, Chapter 7].

The first part of this paper will be devoted to revisiting the evolution of the so-called nontariff trade barrier question, and to make some modest hints and suggestions as to what the Consortium might do toward understanding its significance. Initially, I shall describe how the NTB question... through a series of passive actions on the part of governments, eco-political professionals and others... underwent a metamorphosis from a rather vague conglomerate of lists and anecdotal examples of protection to a more definitive pattern of concerns, such as those embodied in the so-called "technical barriers" terminology; then how the trend was reversed by the use of a broader appellation "environmental barriers". I shall not attempt to analyze these phenomena, only to describe how we evolved to where we are today in this sector of agricultural protection.

Second, I shall present broadly some topical areas in which nontariff problems appear to exist for resolution by the World Trade Organization [WTO] in the future. The presentation will, perforce, ask why nontariff barriers came into play as protective devices in selected areas, their social and economic implications, and the groups of interests in their perpetuation.

Third, and finally, some suggestions will be made, and some questions and challenges raised as to what the Consortium can do to encourage its members to be more aggressive in addressing NTB issues.

NONTARIFF TRADE BARRIERS IN AGRICULTURE: AN EVOLUTION.

Prior to World War I, embargoes, or import prohibition, which resulted from plant and animal quarantine constituted the principal nontariff protection in agriculture; but the volume of trade affected by embargoes was relatively small. Then came the quantitative restriction, which was introduced in Europe in the 1920s; e.g., the French flour formula in 1926. The quantitative idea, when coupled with direct market intervention such as that which occurred in the United States Agricultural Adjustment Act [AAA] of 1933 , ushered in a new era...a flood...of agricultural protectionism. Quotas, licensing, exchange controls, and export subsidies, as well as the more elusive, **nonquantitative**, NTB restrictions such as bilateral arrangements, state trading, "voluntary agreements" or executive negotiations, and more restrictive rules and regulations on health, safety and sanitation were all part of this "new protectionism". Exacerbating this protection were increased levels of tariffs and more rigorous administrative enforcement of all protective instruments everywhere. These actions resulted in almost total breakdown of world agricultural commerce in the mid-1930s.

With the passage of the Reciprocal Trade Agreements Act [RTA] of 1934 in the United States, the world began a long, hard slog back toward freer international trade. Periodic renewals of the RTA in 1937, 1940, 1943, 1945, 1948, and 1949 increased the hope for large-scale improvement in commercial relations between nations. It can be

stated quite categorically that the General Agreement on Tariffs and Trade [GATT] resulted from a continuation of the RTA principles.

The principal aim of the GATT, which had its first round of negotiations in Geneva, 1947, was the substantial reduction of tariffs and **other barriers to trade** in order to increase international commerce and prosperity. Unfortunately, "other barriers...." and agricultural protection received little attention in five subsequent rounds of GATT negotiations : Annecy [1949]; Torquay [1951]; Geneva [1956]; Dillon [1960-61]; Kennedy [1964-67]. The Tokyo Round [1974-79] set the stage for addressing technical barriers. However, it was not until the Uruguay Round began in 1986 that these "other barriers to trade", which had been of intense interest to a few of us since the 1960s, became a principal target for negotiation amongst GATT protagonists.

While the United States can be given credit for the RTA leadership and its strong advocacy through the GATT for freer trade, it must bear much of the blame for the failure of the International Trade Organization [ITO] proposal, the so-called Havana Charter of 1948. The same special interests which were so persuasive in enacting unique U.S. farm legislation in the 1930s were leaders in scuttling the ITO. Interestingly, it was the chapter on "commercial policy" of the Charter that contained the principles of a possible trading code with respect to a catalogue of NTBs. These became very prominent later on in GATT negotiations. Namely : preferences, national treatment, quotas, subsidies, state trading, freedom of transit, antidumping duties, valuation, import and export formalities, marks of origin and other technical questions of importance to practical traders were already highly visible...as well as tariffs. [Condliffe, 1951]. Developing country interest in the ITO centered around their desire to be free to impose tariffs, quotas and other devices as a means of

establishing new industries. After The United Nations Conference On Trade And Development [UNCTAD] was established, its bureaucracy spent an enormous effort to inventory these alleged NTBs.

It is instructive to observe that Section 22 of the USDA AAA of 1933, which was the focus of US farm opposition to the ITO, was the policy instrument around which exceptions were made for US agricultural quotas for the next 30 years, or more.^{1/} It became inevitable that, even if tariffs were negotiated down to zero by trading nations in the GATT, then NTBs and administrative protection would be invoked to protect domestic agricultural sectors. And, so it happened...instead of being reduced... agricultural protection increased considerably after WW II, exacerbated by U.S. domestic agricultural policies but even more so by Europe's Common Agricultural Policy [CAP], and by similar trade restrictive agricultural practices in many other nations.

It should, therefore, be emphasized that domestic competitive agricultural policies and trade policies which utilized protective techniques, such as NTBs and administrative regulations, have been closely interlinked throughout the post-WW-II era. Only a fine line separated them.

The Rising Interest in Nontariff Trade Barriers.

Thus, what was a rather obvious outcome, went relatively unnoticed for almost two decades after WW II while nations reconstructed, developed, and enacted domestic farm programs around which many protectionist devices had to be built to make them operable. Even though most of these programs were price oriented, or had their objectives

expressed in elusive terminology, the administrative and regulatory aspects of their operation often left much to the judgement of public functionaries.

My first tangible effort to grapple with the massive subject matter which had been precipitated by this farm legislation came after some attempts to analyze the ramifications of Section 22 on U.S. agricultural policy. It was obvious that tariffs were almost irrelevant to policy constructs of the 1950s and 1960s. An all-inclusive inventory of "potential trade barriers" was outlined but was a bit unwieldy. Fortunately, about that time I began frequenting Washington D.C., as well as Europe, and received encouragement from the U.S. Foreign Agricultural Service [FAS]. My enthusiasm was boosted considerably by UNCTAD, GATT, The Food and Agricultural Organization [FAO] and The Organization for Economic Cooperation and Development [OECD] personnel. Gulbransen at UNCTAD was especially helpful. Other assistance came from the Australian Trade Commission, the New Zealand Meat Board, and the Animal Health Division of the British Ministry of Agriculture, Fisheries and Food [MAFF].

Out of this material, especially from the FAS and UNCTAD compilations, was distilled a list of categories of NTBs and related potentially-restrictive techniques. My modest contribution was to assemble, organize and collate materials of relevancy, and call attention to the general problem of NTBs to a variety of audiences, including IATRC. Table 1 contains one such organized effort and lists five categories of NTBs, and their subcategories: 1] Quantitative restrictions and similar specific limitations; 2] Nontariff charges and related policies; 3] Government participation in trade and restrictive practices...; 4] Customs procedures and administrative practices; and 5] Technical barriers to trade.

The principal problem then became : What to do with this list, the inventories? They were qualitatively interesting as objects, which could be pointed to as containing "barriers" to trade, but in what way, and by how much? Moreover, they were quite cumbersome, and were significant only to the extent that one could ascertain their researchability; or as to the possibility and potential for their quantitative analysis; and as to whether economic analysis should be the sole criterion for judgement. My answer was to pull together a descriptive treatise on the subject as it related to the agricultural protection problem of the 1960s. Ultimately that was published as **Nontariff Agricultural Trade Barriers**. [Hillman, 1978]. Suffice it to say, that book did not set in motion an avalanche of interest and research on NTBs !

The Kennedy Round, then the Tokyo Round, came and went, and the agricultural trade problem became a much larger issue [witness the growth of IATRC]. Fortunately, the acceptance of the anti-dumping code in the Kennedy Round demonstrated that NTBs were negotiable, and in February 1975, the GATT Trade Negotiations Committee established a group to oversee the negotiations on nontariff measures. This group then set up four subgroups to deal with : 1] quantitative restrictions, including licensing, 2] subsidies and countervailing duties, 3] technical barriers, or standards, and 4] customs matters. In July 1976, a fifth subgroup on government procurement was added. Negotiations in these subgroups and between interested countries eventually led to agreement on new rules governing subsidies, standards, customs valuation, government procurement, and import licensing. [Porter and Bowers, p.15].

Despite these developments, there appeared to be little specific interest in academic circles and other research groups in the NTB subject. However, the quantitative aspects of

NTBs, along with the entire set of agricultural policy distortions, became so troublesome that they could no longer be ignored. Thus, in 1986 agricultural policy and corresponding trade issues were forced into the GATT-Uruguay Round agenda by economic pressures in Europe and the United States, and by other countries such as the Cairns Group. With such an acceptance of the agenda, there also appeared a recognition of the potential for trade disruption of the NTB array.

Nontariff issues had for the most part already been dealt with in other sectors. Now the perception about NTBs in agriculture had seemingly been altered. They had to be dealt with. First, because of the necessity of negotiating on tangible and quantitative phenomena; but, also, and this is quite important, because there appeared to be an increasing interest by many parties [researchers and politicians] in the subject, elusive though it might be. The quantifiable NTB restrictions went the way of "tariffication" in the Uruguay Round. [See IATRC publication]. Most all other so-called NTBs were dubbed "technical barriers". In the negotiations on agriculture an important subset of these were singled out to mean sanitary and phytosanitary [SPS] barriers.^{2/}

Changing Terminology: Technical Barriers.

From its beginning in 1947, the GATT recognized the right of countries to adopt health, safety and environmental policies to protect the welfare of their citizens, and explicitly recognized that countries might use such policies to contravene, or to take precedence over, attempts by others to override their laws and regulations in such matters. Petry and Johnson [1993] point out that this presupposes, in principle, two important conditions: first, the purpose of such measures must be to contribute to a legitimate

domestic objective; and second, equivalent regulations must be applied to domestically produced products and imports. [This is the principle of national treatment]. Measures adopted under such policies gradually acquired the designation "technical barriers". In sum, if any restrictions are imposed on foreign imports for health, safety or related reasons, then restrictions on domestic products and services must be similar in order that differential treatment of foreigners does not constitute a form of disguised protection.

It was required that signatories to the Tokyo Round Agreement on Technical Barriers to Trade notify other parties, through the GATT Secretariat, of products to be covered by proposed technical regulations, if the regulation differed from international standards. Through July, 1994, 349 such notifications had been recorded where the objective and rationale of the technical regulation or standard was given as the protection of the environment. This was 8.4% of the total number [4151] of Technical Barriers to Trade [TBT] notifications which were made to the Secretariat during the period 1980-94.[GATT]. As environmental awareness has increased, the use of technical standards has become more common. Such measures tend to reduce international competitiveness through increased costs. Health and safety standards raise costs **via** a variety of NTBs; and environmental standards do so primarily **via** pollution charges and the like. [GATT, 1992].

During the Uruguay Round period one could observe the adaptation of this new terminology. The generic NTBs terminology changed in the minds of many. The new term became "technical barriers". Technical barriers are epitomized by the SPS issues which constituted the "fourth leg" of the submission by the United States on comprehensive long-term agricultural reform during the Uruguay Round. Why then, subsequent to that Round, did the political establishment rather suddenly redirect its interest [etymology] toward

broader areas...in the nontariff barrier sense... such as the environment, property rights, legal and administrative issues that impinge on scientific matters, such as risk, etc.? My opinion is that, on the one hand, it became increasingly necessary for politicians to address "green issues" **via** the use of the environmental terminology and, on the other, to address property rights and other such issues **via** a conservative agenda and rhetoric.

The title of my second book on NTBs was changed to **Technical Barriers to Agricultural Trade** to accommodate, even though its treatment of technical subject matter was not its major thrust. [Hillman 1991]. Many others, however, were taking up the theme, among whom were Bredahl and Forsyth [1988] in a paper prepared for the IATRC Symposium in Annapolis. Boardman [1986], Kramer [1991], and others did analyses, some of which added new insights. Their publications are particularly valuable because of the many helpful additional references to NTB issues. One gets the impression in many of these works that the authors recognize the importance of the subject but, having addressed it, they then find the possibilities for quantitative research elusive. That is, they found traditional trade modeling techniques to be of little value in much of this techno-political and administrative universe.

Even though the terminology became more specific and definitive, both in academic and other institutional circles, the lack of specific research projects on problems at the operational levels of trade was still noticeable. Ironically, there was little argument now about the importance of NTBs and technical instruments in the distortion of trade patterns. Moreover, there appeared to be professional interest in how to identify, define, and research NTBs in this context. Meaningful research tools and models, however, have been scarce. I find the methodology expounded in traditional modes such as those in Deardorff

and Stern [1988] and in Laird and Yeats [1990], not of great use for analyzing technical questions and administrative problems impinging on international agricultural trade.

Hence, though the field of issues apparently has been reduced from the gross, descriptive inventories of the 1960s-70s period to a narrower track of barriers related to science, health, food safety and legal technicalities, the analytical and methodological vacuum remains. This is particularly noticeable now that quantitative restrictions, specific charges, fees and similar trade impediments have been pre-empted from the NTB hierarchy by the Uruguay Round Agreement.

One can be encouraged by a paragraph in the **Conclusions** of a recently published IATRC Working Paper on quantitative challenges: "...new and better ways must be used to discover theoretical and analytical tools to deal with nontraditional issues such as trade and the environment, dispute-settling mechanisms, safeguards, competition policy, trade-related aspects of intellectual property, and labor policy." [Meilke, et.al.] Another of their conclusions is also worth mentioning: It would be unhealthy to leave the analyses of these issues to the research discretion of "...a few, large governmental or international organizations."

This coincides with my views, of which more will be said later.

Trade and The Environment: Another Terminology

Just as it appeared that trade economists and professional colleagues were gearing up for a serious search for methodologies to deal with "technical barriers", which would in turn help attain a larger , long-term objective of defining and quantifying so-called NTBs, there emerged another all-encompassing set of terminologies. The apparent catch-all term

for this new set of restrictions is "environmental restrictions". Are they "new"? Or is it the politico-economic circumstances that is "new"? Language and its use becomes **very** important here.^{3/} It seems that "the environment" is being used to characterize most **everything** that impinges on the production and trade of all agricultural commodities and food products; that is, professionally most everything is covered from science to ethics, including such things as sustainable agriculture, plant and animal production processes, SPS safety standards, air and water pollution, labor practices, and so on. Have we escaped one foggy notion, and amorphous terminology only to become ensnarled in another?

As far back as 1972 "environmental quality" was raised in such a context.[d'Arge and Kneese]. Runge [1992] in a study for OECD called further attention to the trade and environment issue. The IATRC had its own workshop on the subject in 1994. Some analyses have a general lead-in title that includes the implications of "environment" but address a specific problem analytically [Haley, 1993]. This is a step in the right direction. But to subsume the vast array of **potentially-trade-restricting** practices under an umbrella called "environmental restrictions" would be a step backward toward the old days when everything that was not tariffs were simply dubbed NTBs.

The rhetoric in the immediate aftermath of the Uruguay Round, nevertheless, seems to have accelerated the attempts to create a universal approach to so-called environmental issues which have resulted in some very broad generalizations about the inter-action between trade and the "environment". Too broad, in my opinion. In fact it might be a good idea to try deliberately to avoid the use of the word "environment" for awhile and choose a

more differentiated vocabulary. Let us hope that I have the wrong perception; or that the tendency is short-lived.

The above is not meant as a call to abolish the excellent work of the OECD Environment Policy Committee! Its 1995 joint report [with the Trade Committee] contains some excellent observations on the effects of trade liberalization on the environment. [OECD,1995]. I do wish their **Recommendations to the Ministers** [p.32] had called for specific analyses. Note also should be taken of some recent specific attempts to apply methodological tools to trade and environmental issues. Sinner [1994] is headed in the right direction, but I shall be even more pleased when he does a case study-project on a New Zealand problem area. Another current study-manuscript, prepared by ERS personnel, and which I was privileged to look over, is encouraging. [Krissoff, et.al., Unpublished]. The word-theme is "environment", but I was distracted by the multi-terminological language and research procedure. Often a generic-type overview of a problem area is desirable, as in this case, yet it is hoped that specific terminology will emerge and that more case-analysis research will also take place in the Economic Research Service.

I shall argue below that now is the time for the constituents of IATRC to do some specific analyses on a number of so-called NTB issues related to those matters which were not subjected to quantitative analysis in the Uruguay Round Agreements on Agriculture; that is, those that were not subject to tariffication. These issues include, of course, SPS and other " technical barriers"; but they include, also, secondary **phenomena which are associated with** these so-called technical barriers, and which result in their being used as obstacles to international trade. To name but a few of such phenomena:

risk assessment, dispute settlement, market distortion, and equity considerations. There are many other such phenomena, but I shall limit this paper to but a short list, and discuss them in a rather broad, and descriptive, way. Those topics chosen for elaboration are : **the role of science and technical standards; the role of international scientific and/or regulatory institutions; and the administrative bureaucracy within trading nations.**

OBSERVATIONS ON PHENOMENA ASSOCIATED WITH NONTARIFF BARRIERS.

A reduction in protection from explicit economic barriers, such as tariffs, often reinforces the tendency to use less direct, less obvious, means such as technical measures, rules and regulations, and administrative law. As the outer layer of protection is peeled off and disposed of, new layers are exposed; and below these loom still others.^{4/} It is worth repeating that in every case there must be a determination made as to whether the use of a particular technical standard is justified or unjustified, under the rules of the GATT. As already observed, our profession has not come to grips very successfully with this neo-protectionistic **milieu**, perhaps because of the flexibility and uncertainty which characterize the processes by which such protection takes place. As to those being protected, limited conclusions from the literature suggest that "low-level" technical tracks are favored by groups who are relatively unimportant politically, whereas politically powerful groups use "high-level" political tracks. [Finger, et.al.1982; Lloyd and Falvey, 1986; and Anderson, 1988]. The technical, or rules, track tends to be also favored by politicians because it avoids, or delays, decision making.

Public choice literature on the political economy of protectionism has not examined very thoroughly the role of administrative bureaucracies, yet they are the main decision-makers for technical questions.[Messerlin].^{5/} Another strand of the literature suggests that a preference for NTBs in general, over tariffs, is due to the certainty of effect in stopping damaging import flows.[Deardorff, 1987]. However this conclusion seems to be more appropriate to quantitative rather than qualitative import restrictions. For example, the uncertainty surrounding technical standards would seem to make them a less favorable vehicle for domestic agricultural producer groups to restrict foreign competition, even though such standards might be justified. A significant issue that needs more investigation relates to the welfare effects resulting from the downgrading effects on local production, often caused by NTB restrictions. Obviously there are welfare costs when lower quality local production replaces foreign products which are restricted because of a variety of technical and administrative barriers. Contacts in Papua New Guinea report that for some foods there, the welfare costs due to lower domestic product quality are as large as price rises which result from trade restrictions,^{6/}

Finally, the literature suggests that at a rule-making [constitutional] stage, government intervention tends more toward cooperative supplying of public goods, such as internationally harmonized standards which rest on agreed-upon scientific bases. In contrast, government intervention at the operational, day-to-day stage is more concerned with groups using the coercive power of the state to redistribute wealth in an exploitative process. These competing processes often produce free trade rules which are operationally ignored.[Schwartz].

Technical Standards And The Role of Science.

Technical standards have emerged as a critical area of disputation in international trade in food and agricultural products. One of the components of the Uruguay Round of GATT negotiations was to achieve greater harmonization of these technical standards. Under Article XXIV of the Gatt, countries are allowed to have their own technical standards in order to "...protect human, animal or plant life or health...". They are also protected by the Agreement on Technical Barriers to Trade which was negotiated during the Tokyo Round to supplement Article XXIV. Like most of that Round, the emphasis was primarily on industrial standards rather than agricultural.

The literature on standards is vast and complex, but it should be observed that the issue is not of recent origin. In the misty origins of commercial law, e.g., Hammurabi's Code, merchants found it to their advantage to work out rules of fair dealing. Such a code put the force of political authority behind the established practice or standard. Kindelberger [1983] suggests that international technical standards have been adopted in the past because of the power of a dominant economy to force trading partners to harmonize with it.^{7/} The problem is that once a standard has been adopted it is difficult to change, even if challenged by a better one which all users prefer. This difficulty is often due to a coordination problem because each user of the old standard waits for all others to change first. The post-WW II reduction in the dominance of the United States, with no offsetting increase by a dominance from another country has made the negotiation of new technical standards a difficult business. Generally speaking, when each country, or agent, acts in the same manner any desired change to a new standard is not made. [Farrell and Saloner, 1985].

Until recent experience proved otherwise, it was believed by many, including myself, that scientific consensus could prevail in creating standards and corresponding regulations which could be based truly on need criteria with respect to the environment, health, or safety; and which would distinguish them from others motivated by protectionism not sanctioned under the GATT. However, in preparing for this paper, and from other evidence arising from recent national policy decisions and administrative rulings, I discovered evidence which is not encouraging. That evidence points to difficulties ahead for nations coming to terms about harmonization of food safety and other standards, based solely on scientific consensus. For example, in July 1991, the Codex Alimentarius Commission voted not to establish maximum residue levels for four growth-promoting hormones that are widely used in livestock production. What made the action significant is that the Commission's own Scientific Advisory Committee, as well as its Committee on Residues of Veterinary Drugs in Foods, determined that the four hormones are safe under specified conditions of use and had established recommendations for maximum residue limits.[Kramer, RFF.p.12]. There has been a recent approval of the Committee's recommendations.

The hormone and like cases illustrate the difficulty of the role of science in harmonizing standards and regulatory procedures as instruments in reducing agricultural protection. Exacerbating this difficulty is that, as laboratory instrumentation of food and other materials become more sophisticated, technicians can detect smaller and smaller amounts of residue or harmful substances, and product approval is held up for longer periods. All of which raises fears among consumers, whether justified or not, and the suspect-list of retail food or farm commodities grows longer. Good examples of this are

Delaney Amendment^{8/} and the "zero tolerance" guidelines which were issued in 1993 by the USDA in response to residues found in some US packing plants.

Science, therefore, has become the focus of many arguments—economic and political—relative to settlement procedures for disputes over technical standards. In fact, science itself has been faced with the problem of providing answers to "scientific" questions because the phenomena under review are either outside its boundaries, or they are beyond the ability to respond satisfactorily. A fascinating, and to me, most persuasive, treatment of another type of "science" is Liora Salter's **Mandated Science** [1988] in which there is developed a "...special world of policy making..." about standards, with its own definable world of pressures and constraints. Her thesis-narrative is buttressed by case studies which illustrate what can be done in mission-oriented research. It is recommended highly for those who become involved in trade policy research that focuses on technical barriers.

Salter's term "mandated science" refers to the science that is used for the purposes of making public policy: "Science here includes the studies commissioned by government officials and regulators to aid in their decision making. This scientific work is designed and carried out solely for the purpose of supporting particular regulatory decisions. It also includes scientific work originally produced in more conventional scientific settings. This scientific work is indistinguishable on the printed page from an academically-oriented report. It becomes 'mandated' when an individual study is evaluated in terms of the conclusions it can offer to policy makers about the merit of particular regulations". [Salter, p.2]. Woodward [1995] has presented an excellent treatise on the role for science in one nation's international trade policy.

Some of the technical questions facing food and agricultural trade regulators are 'trans-scientific' rather than scientific. This term derives from the seminal article of Alvin Weinberg. [1972]. Public policy questions such as minimum residue levels for toxic pesticides can be asked of science, but there are often no satisfactory answers...in the sense of their being absolute. Science is often able to provide answers about the measurement of risk in these cases but is in no way qualified to make judgements about acceptable levels of safety, because these are essentially normative issues. [Rushefsky, 1982; and Hyman, 1969]. Despite this inability of science to provide assessments of trans-scientific questions, public policy makers appear to be increasingly dependent upon science and often have an idealized picture of the rationality of the technocratic process and its ability to provide recommendations. However, the fact is, when science is given a mandate to produce public policy recommendations, it actually changes the character of the science by exposing the personnel to a set of legal and economic pressures.

Hence, one can agree with Josling [1993, CREDIT] that increased technical instrumentation followed by heightened consumer concerns leaves governments with an uncomfortable dilemma when it comes to food and agricultural product standards. At the same time, the actions and counteractions between the United States and the European Community over the hormone question during the 1980s illustrate the difficulty in resolving differences. Moreover, pressures from consumer groups, reinforced by those from environmental lobbyists, tend to lead toward more regulation and to the banning of substances which often have minimal health risks. Ironically, such tighter regulation tends to reverse, or to counteract, the demand for less government intervention in business and

consumer affairs. Inevitably, exporters take the view that such regulation is just another form of protectionism.

In the opinion of some scientists, it is they, themselves, who must lead a cultural change in the way the public, industry, and an international bureaucracy understand and use science. For example, in Australia the Federation of Scientific and Technological Societies [FASTS] has drawn up a scientific policy with a detailed list of proposals for education, industry, and governmental institutions. Each issue is about achieving cultural change, and involves Australia's internationally competitive export business. Beyond this local example, the general opinion appears to be that the scientist often possesses unique knowledge that affects issues of public policy. That knowledge can often be used to inject discipline into recurring debates about such things as the use of hormones and their impact on the international trade in meats. If science is incapable of this, why not just leave all such questions to politicians and trade administrators?

In addition to the trade disputes involving scientific standards for chemicals, pesticides and related materials, there arise many other arguments in the technical barrier category. For example, labeling practices, licensing, permits, embargoes, etc. [Krissoff, p.21]. Barriers that arise from this entire family of technical phenomena often create externalities in addition to those resulting from an original, or primary, act of production and distribution. As was already noted, other matters are most always attendant to technical issues : property rights and sovereignty are inevitably attendant to these barriers in international commerce. [Sinner, p.181-82]. The area of standards and other technical phenomena are ripe for IATRC analysis, especially as the disputes surrounding them apply to the definitions of goods and services from a market failure or public goods perspective.

The Role of International Scientific and Regulatory Institutions.

A striking feature of the world of agricultural trade in 1995, as compared to 1945, is not only the enormously increased volume and variety of food and agricultural products that enter international market channels but, as we have seen, the increased complexity of that trade. Such a change has been abetted by, among other things, scientific phenomena, and potential technical trade restrictions of all sorts. As a corollary, there has arisen a hierarchy of international institutions which have been created to assist in the monitoring of trade flows and to interpret "the rules of the game" vis-à-vis GATT and related negotiations. Among others that may exist, three international, scientific organizations were designated under the GATT proposals to help provide technical expertise in SPS disputes.

[Casteneda, et.al.].

The Codex Alimentarius Commission is responsible for issues such as food additives, pesticide residues, contaminants, animal drugs, packaging, and food standards. Representatives of government regulatory agencies, the international scientific community, and industry from 150 countries serve on the Commission. The Commission was formed in 1963 as a subsidiary of FAO of the United Nations and the World Health Organization [WHO].

The International Office of Epizootics is responsible for animal health issues. This international veterinary organization, formed in 1924, has members from about 130 countries and maintains a global animal disease reporting network.

The International Plant Protection Convention is responsible for issues involving plant diseases and plant health. The convention, formed in the 1950s, has members from about 90 countries and, like Codex, is a subsidiary of the FAO of the United Nations.

The SPS agreement in the Final Act of the GATT Uruguay Round includes a series of "understandings", or trade disciplines, as to how measures will be established and used by countries when they enact, revise or apply their domestic laws and regulations. For example, though signatory countries maintain the sovereign right to provide a certain level of health protection for their citizenry, they agree that this right will not be used indiscriminately for protectionist purposes. In addition, countries agreed to establish their SPS standards on a scientific basis. As a guide for their actions the agreement encourages countries to use standards set by international standard-setting organizations. Most importantly, the SPS agreement seeks to insure that trade member states will not be discriminated against by arbitrary or unjustifiable measures which disguise trade restrictions. For countries with a federal system such as the United States, member states and local governments are encouraged to abide by the SPS agreement but are not required to lower their own standards if they are scientifically based.

Detailed studies have been undertaken in the United States...principally at the request of the Congress...the consensus of which is : 1] that sovereignty is guaranteed to each nation to establish its own standards so long as these standards are based on science; 2] the authority of local states and governments to establish more stringent standards than their federal government is recognized, provided these do not violate the GATT, SPS agreement; and 3] the agreement is a means of opening markets to U.S.

products. [General Accounting Office, 1991 and Vogt, 1994]. One would assume that markets for all signatory countries would be improved.

The role of international scientific organizations and the success of GATT, SPS agreement toward resolving trade disputes, and toward trade liberalization, will necessitate coordinated study and consultation among the major agricultural producers and traders of the world. There are, however, complicating factors. One is that policy on food safety differs greatly from country to country; i.e., the level of focus, risk assessment methods, and safety standards often vary greatly. [Kramer, 1991, p.14.] Another is that local taxes and subsidies affect local agricultural producers...hence food safety standards, and other costs...in differing ways among trading countries. In the United States as an example, this involves state and local taxes, and subsidies as well. Recently subsidies on irrigation water were withdrawn by the Federal Government in Arizona only to be replaced by state and local subsidies. These actions can be instrumental in the encouragement or the discouragement of input or food product use, thus adding to trade discrimination.

There are still other complicating factors many of which involve differences among countries for legislative authority and for promulgating and enforcing a variety of standards at all levels of the distribution process. Ultimately, success in dispute resolution will greatly depend on the communication of scientific and regulatory information about technical standards among countries. The International Plant Protection Convention [IPPC], for example, is moving forward with attempts to draft international standards for phyto-sanitary measures [IPPC Secretariat, 1995]; and a framework for standardizing acceptable levels of risk has been proposed. Beginning very soon, the IATRC with its ability to attack applied research issues can play a vital role in this arena.

To emphasize it again, the process of dispute resolution within the scientific organizations is not the exclusive jurisdiction of "science" to settle differences about agricultural protection. As things now stand that proposition is not well understood by the public. My impression is that the public views the settlement process as being characterized by an ideal picture of the scientific enterprise which relies on rational procedures of risk assessment. I will venture **relies too heavily** because there exists an almost naive perception that scientific statements used by the various organizations [e.g., "average daily intake" and "good agricultural practice" as used by Codex Alimentarius and its affiliates within the UN] have the same meaning, regardless as to who interprets them. Moreover, these organizations, like most institutions, change slowly; and when they do, it is not always in response to scientific data and rational procedures that are based on free international commerce.

Despite these misgivings about the capacity of the international scientific organizations to resolve NTB-technical barrier questions and disputes, other alternatives do not readily present themselves. The GATT Uruguay Round negotiations recognized at the outset technical barriers such as food safety standards to be very important, so set up a mechanism for recognizing legitimate differences among countries over these and other problems; and for resolving disputes. A current appraisal of the food safety regulation problem has been presented in **Food Review**. [Unnevehr, et.al.] "Harmonization" appears to be the central theme this review offers for the resolution of country differences. Accompanying this quest for harmonization are the protectionist brambles of : 1] Appropriate levels of protection, 2] Scientifically based measures, 3] Transparency, 4] Equivalence, 5] Regionalization, and 6] Dispute resolution.

Others have offered a variety of strategies for regulatory rapprochement with harmonization being only one of the management processes. [Jacobs]. **Harmonization** via actions of international scientific agencies is not a cure-all for the technical barrier problem and the implicit subsidies which might arise because of different standards and a lax enforcement by exporting countries. **Mutual recognition**, or the acceptance of regulatory diversity as meeting common goals [sometimes called reciprocity] has certain advantages in that a product that is legally produced within a bloc will be legal for sale throughout the bloc regardless of whether it meets the host country's domestic standards. **Equivalency** lies somewhere in between and is a variant in the United States- Canada Free Trade Agreement and in some GATT agreements. **Coordination**, or the gradual narrowing of differences between regulatory systems, covers a wide variety of efforts to align policy through consultations, adoption of voluntary standards, and other means. In my experience, ultimately, the problem is not **different standards** but, instead, an **ignoring of the standards that exist** by administrative personnel in exporting countries [and by importing conglomerates] in order to gain trade advantages and market share. There is sufficient grist in the area of dispute settlement to provide IATRC with a considerable volume of specific and definitive research material based on country-commodity-technical phenomena.

Administrative Protectionism

In facing up to the new and complex questions of **possible** agricultural protection in a post-Uruguay-Round world, we must reckon with the fact that the **basic** institutional patterns

of governments in democratic countries, as well as the entire administrative structures of those governments have changed little in recent years; certainly not to the same degree as have science and technology. Yet, there has been thrust upon these same governments massive overlays of international organizations [as described in the last section] and new layers of domestic administrators the actions of which tend to clash head-on with the ideals of unrestricted freedom of trade, competitive equilibrium, and an egalitarian welfare model.

Before the Uruguay Round came along and addressed the issue, there had been a dramatic increase in indirect, or administrative protection, most of which had a symbiotic relationship with the laws and regulations related to science and technology. Only now are we as professional economists coming to terms with what might be involved in a research and analysis program in this area. As was seen in the section on " Science...", research on technical standard setting and the beliefs and values of standard setting technocrats has advanced further in political science and public choice analysis than in economics. But there is a paucity of research everywhere on the functional issue of the administrator's role in trade restriction, particularly in agricultural trade. Most of the attention has been of an anecdotal nature, compilations of incidents, and descriptive material, with little background, or in-depth analysis. Recently this lack of specificity and analytical procedure has changed; the vacuum has attracted some studies which will be noted in the next section.

Suffice it to say, following the enactment of massive intervention programs all over the world beginning in the 1930s, power began to devolve from the legislative to the administrative branches of government. This passing of power from legislative to administrative forms of government has resulted in increasing opportunism in policy making, and policy interpretation, and has rendered it necessary for decisions to be made

more quickly and more complicated detail. One has but to observe the decision-making possibilities of the Common Agricultural Policy [CAP] at Brussels, or the Environmental Protection Agency [EPA] and the Food and Drug Administration [FDA] in Washington, D.C. to appreciate the strategic positions of certain administrators.

In all these and similar agencies the decisions of which impinge on agricultural trade, what pressures are actually effective in making and interpreting policy ? Who has the ear of those who must take action ? Whose judgement and advice are used ? To what extent are decisions based on practical considerations concerning which responsible officials alone have, if not full, at least the best, information available ? Do the administrators tend to consult experts, who must almost necessarily be individuals with a direct personal interest in the decision to be made ? Are the administrators more or less open to the pressures of vested interest, and are their actions further removed than those of lawmakers from public criticism ?^{9/}

Even though these questions do not have clear and decisive answers, certain generalizations can be made. In the first place, however high-minded and able the administrators who conduct day-to-day policy, there is a real danger of their progressive withdrawal from direct and detailed public criticism and responsibility. Those who question this assertion ought to go into the burrows of officialdom in Brussels, Tokyo, Washington, and elsewhere and try to pinpoint who **really** is responsible for decisions and their implementation with respect to laws, regulations, and various rules. The real danger is not so much the possibility of corruption and graft, though this is not to be overlooked, but the more subtle danger of the concentration of power in those who are not subject to direct public action and whose cumulative errors in judgement are not brought to immediate

account. In the United States, the Freedom of Information Act is a step in the right direction toward administrative accountability.

The concentration of policy-making power in administrators puts a premium upon organized pressures from directly interested groups and lessens the consideration likely to be given to the general public interest, particularly unorganized consumer interest. In the case of agriculture, the result is that government policy and regulation in the area of NTBs has historically been dominated by organized producers. Agricultural marketing schemes, export programs, and regulatory activities are in many cases directly accountable to producer interests. The various producer boards and commodity control programs, set up to regulate production, trade, and prices, are designed to protect the financial structure of existing investments, often even at the expense of new investment opportunities in the same country.

Those administrative practices which are likely to lend themselves to discriminatory actions range from the imposition of fees and the issuing of licenses at the discretion of government officials, to the use of regulatory measures such as veterinary, health, quarantine, and similar restrictions imposed for specific purposes; or merely the application of wide powers taken by governments to insure adequate inspection, classification, statistical recording, allocation of quotas or valuation of imports. Since there is a well recognized procedure of judicial interpretation and appeal in most countries, estimates of the effectiveness of these laws and regulations should be made by **analyses of the actual administrative practices** in each country rather than by analyses of the powers granted by legislation.

Briefly, it is the administrative aspects of protection, rather than the essence of law and regulations, that need to draw our research attention. In many instances appointive or elective administrative officials are invested with power to formulate rules and regulations on their own, which may facilitate the interpretation of legislation, and which carries the same authority as statutes. There appears to be no uniformity among countries in the manner and sequence in which administrative directives are issued. In many cases new administrative officers may issue their own revisions or supplements to the regulations. This in itself creates problems in administrative procedure, as it is often difficult to ascertain details of the latest set of regulations. The implications are essentially political, because in most instances each newly elected regime in a country brings with it selected [new] appointive officers.

In the years leading up to the Uruguay Round, because of their direct costs, it became increasingly possible to identify the discriminatory practices with respect to quantitative restrictions...quotas, license fees, exchange controls, and the like. Accordingly, some type of measuring procedure to determine the extent of protection could be developed. With respect to the interpretative norms of typical regulatory activities, however, discovery and measurement are more difficult. I have often repeated the statement given me by a highly-placed administrative official in one EC country : "Honestly, it depends on the local price of _____ as to how rigorously I enforce this particular regulation [on imports] ". Another way of addressing this and similar issues : It is not what the **law says** it is what the **law does not say** that is so important to administrative protection.

There is little doubt that administrators often use their flexibility to discriminate against foreign competition. It is evident that administrative protection occurs on a wide scale and

that special interests avail themselves of opportunistic application of administrative authority to the benefit of particular groups. Further, in many cases where injured foreign parties ask for judicial review of administrative practices, decisions and relief are slow in coming. Whereas judicial review is more rapid when the protected interest is a domestic producer.^{10/}

In Figure 1, I have attempted to sketch the critical position administrators occupy in the public institutional network associated with international trade flows. The diagrammatic logic of this figure may not please the purists, but the message is clear: administrators play a key role in attaining and maintaining a world trading system. There are other schemata which illustrate the same position of administrative personnel, and make the same point. [Roberts and Orden p.6]. A different, less direct, picture of regulatory impingement on technical barriers and the processes of public policy is shown in a diagram borrowed from Salter [p.184]. In this picture-model the sphere of **mandated science** expresses not only the values, norms, and other economic and trade relationships, but also the public policy, legal and regulatory processes. The regulatory-administrative issues, **via** the technical aspects of science, will play a vital role in the future WTO sphere of dispute settlement.

As a final observation, just as tariffs and related quantitative restrictions were easier to identify and deal with than the so-called nontariff and technical restrictions in GATT Rounds of the past, the setting of scientific standards and the strengthening of settlement procedures for disputes over technical principles will come easier than administrative objectivity and agreement among bureaucratic decision-makers. Thus, when neither science nor bureaucracy can provide appropriate solutions, political decisions, based

Figure 1. Influencing Trade Legislation and the Administrative Bodies.

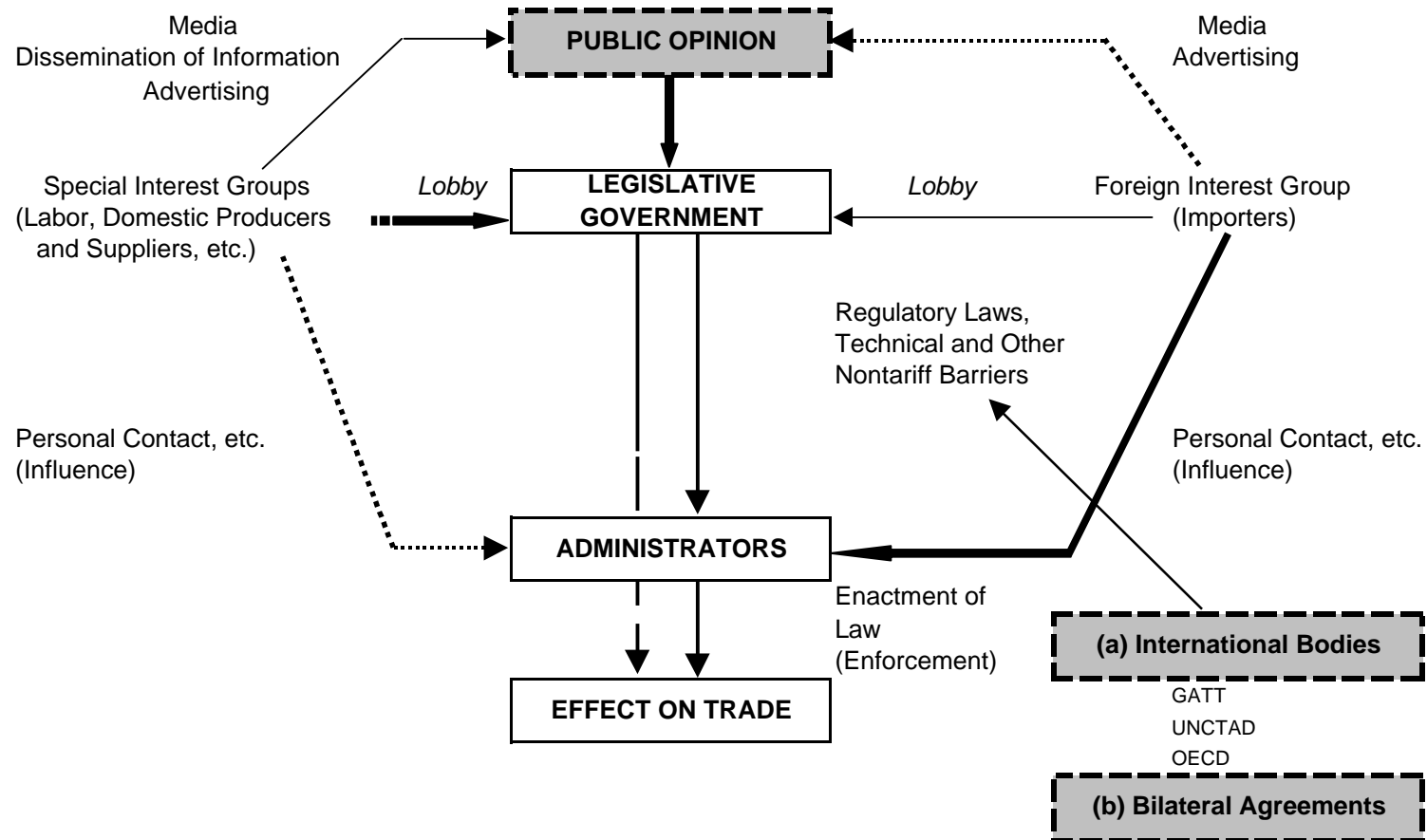
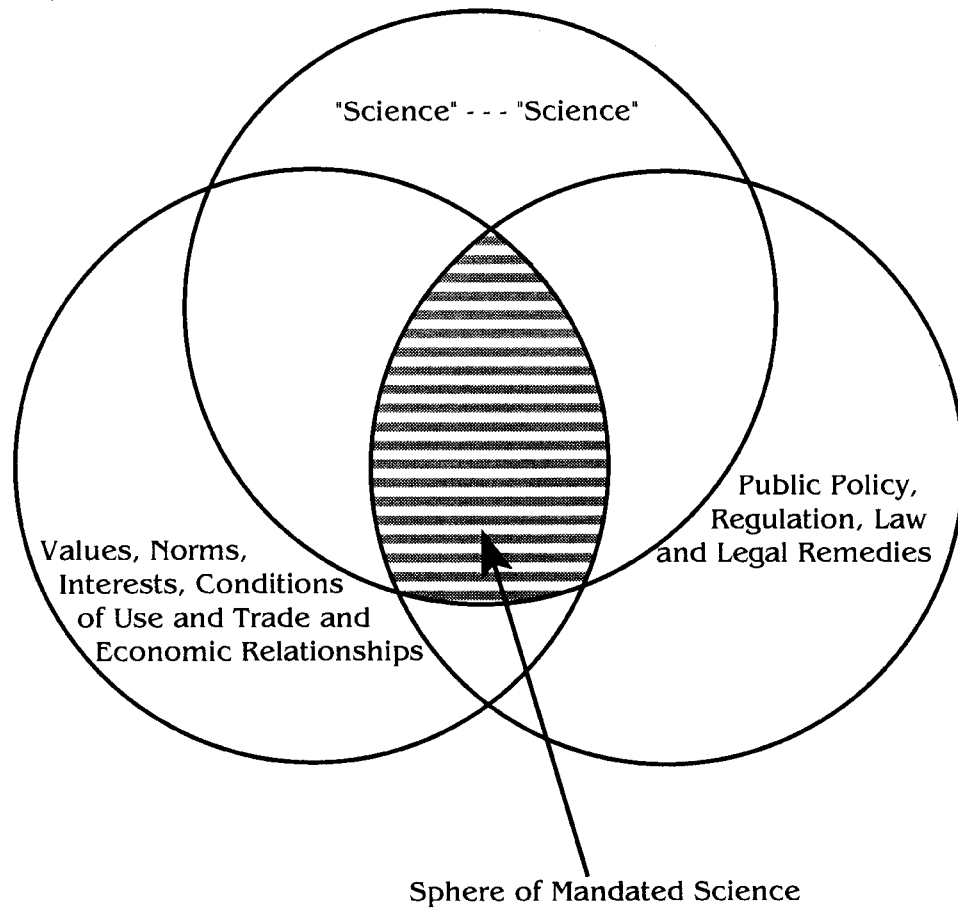


Figure 2. Relationships of Standard Setting and Mandated Science.



Source: Salter, p. 184.

largely on economic criteria, will most likely be imposed.^{11/} The WTO could make an important contribution to the resolution of disputes arising from technical phenomena...environmental issues and health and safety differences...if it could improve on settlement procedures. Experience shows that scientific criteria alone are insufficient for settlements.

Will there be a "race to the bottom" with respect to environmental, labor, food safety and other standards, as businesses and multinational firms are attracted to countries with lower, or different, standards, and with slack regulation? [The Economist]. Not likely, if the WTO can build a strong position and become endowed with sufficient power to effectively referee world trade activities.

CHALLENGES FOR IATRC

Several years back I proposed to the Executive Committee of the Consortium a Commissioned Paper which would explore in a detailed fashion the subject matter area of nontariff trade barriers on the hypothesis that facets of this area might wind up center-stage in future protectionistic arguments, and would certainly become part of any future WTO trade negotiations agenda. The idea for the Commissioned Paper was not approved, but this theme-day treatment of the subject is platform enough for me to again call for specific and definitive study of the problem area, especially as it relates to international agricultural trade. A Commissioned Paper might still be a good IATRC stratagem. At this point I shall repeat some of the suggestions which were prepared for the current Program Committee; then shall outline some ideas about specific studies that are underway and others that might be undertaken

The Central Issues

Most analyses of NTBs and related trade problems center on short-term implications or results. An example is the " hormone war " of 1988-89 between the United States and Europe. Was any considerable thought or analysis given to the long range implications for the parties concerned ? Very unlikely. Such studies, especially the academic ones, deal principally with the short run and have emphasized the problem by measuring the degree of protection or by suggesting negotiating procedures. But they fail to address the longer-term impacts on agriculture, related industries, and the bureaucracies associated with agriculture of a radical change in agricultural policies, and diminished administrative intervention.

One view of NTBs is that policies which distort trade should be removed in whatever form they exist. As we have observed, the reduction of tariffs has exposed NTBs. As certain NTBs have in turn been removed, other impediments to trade have been revealed. As one arm of government removes a trade restriction, often another arm of government has intervened. The process of trade liberalization seems never ending, leading into the very depths of domestic policy making.

Countering this view is a growing body of opinion that liberal trade itself poses a threat to domestic policy autonomy, to labor and environmental legislation, and to consumer safety. According to this view, the dictates of trade should not be allowed to circumvent or weaken domestic rules. Trade should be controlled to avoid such conflicts, and free trade allowed only when no such threat exists. Raising the standards in other

countries, harmonizing such standards, or some form of mutual recognition and coordination of standards in this view are prerequisites to allowing free trade.

Competitiveness, equity, market failure, public goods and sovereignty all become facets of any study which fully addresses NTB questions. Some principal overall objective of a research program do appear quite necessary : 1] How to define "free trade" ...i.e., the level playing field...in a way that does not disallow legitimate, efficient and transparent government policy instruments, such as the setting of standards and the provision of public goods; 2] How to identify government measures which are trade-distorting under such a definition; 3] How to reinstrument domestic policies, including regulatory activities, in order to avoid the use of such measures; and 4] How to incorporate these ideas into international rules to allow liberalization of agricultural and food trade to proceed without impinging on legitimate environmental, food safety, and public health concerns?

Our most immediate need is a research methodology to deal with technical and administrative barrier cases. Perhaps we could start with technical barriers arising from SPS sources and ask why they are more elusive than others in terms of international standards.^{12/} Then we might proceed with a case-study-subject-matter type of research. Popularized by Glenn Johnson [1986] subject matter investigations do not aim to solve a particular problem or add to the theoretical corpus of the discipline, but rather, seeks to produce knowledge about a multidisciplinary subject relevant to a set of problems faced by decision makers. The formation and evolution of technical standards represents a substantial research challenge for agricultural trade economists.^{13/} Administrative and regulatory decision procedures are even more disputational. Knowledge of participant beliefs and values is almost totally absent. Yet this knowledge is essential if we are to

increase our understanding of the forces shaping technical standards and their administration, when these are likely to become trade barriers, and what institutional arrangements can shield the scientific process from protectionist pressures.

Practically speaking, what are the economic impacts of such NTBs on trade in primary products ? How do environmental practices originate and what are their likely use as trade barriers? How can we verify the technical validity of phytosanitary barriers? The increased interest of industrial trading countries in health and food safety issues has evoked a series of studies aimed at answering these and other questions related to NTBs.

Case Studies.

In the past several years some studies have been published, others initiated, which illustrate the direction which I believe academic, and allied academic-government, research projects should be moving. In **Appendix 1** are presented the titles, authors, institutional identities, and the briefest of abstracts for five such case studies. Surely there exist many more, hence we can expand this list. I charge the IATRC to redirect more of its effort in this direction.

Explicit Research Suggestions.

The manuscript by Krissoff, et.al.[ERS manuscript in progress] provides an economic framework and background, even a momentum, for undertaking research on NTB issues, and it introduces subject matter which may be confronting the agricultural trade sector in the immediate future. Let me propose several project areas in which more specific research might begin.

With respect to the major commodities, I suggest some studies which analyze the effects of standards and quality regulation on trade between countries and/or regions. [But not a world model]. Product quality could be analyzed, taking into account other factors above in the **Challenges** section, as a barrier, assessing its impact on producer competition in the respective countries. One such study on the meat trade between the United States and New Zealand is already in its planning stages. [Hooker]. The dairy trade, as well as the fruit and vegetable industries lend themselves to the same type analysis.

Increasingly there are likely to be unilateral attempts by countries to restrict access in order to influence actions by an exporter who is trying to sell products produced under conditions which do not meet the standards of the domestic [importing country] market. These actions may vary from a physical production issue, e.g., adding a pesticide; to labor or education practices; to phenomena such as animal rights. For example, should health, unemployment, retirement and other related "environmental costs" be offset with equivalent import fees to create a "level playing field"? One argument is that such a procedure would create incentives for developed countries not to reduce social programs, while at the same time it would create incentives in developing countries to improve social conditions such as health. Such an offsetting tax has been labeled Measurement of Aggregate Government Imposed Costs [MAGIC] by the Hawaii Sugar Producers Association. In some commodity circles, including Europeans, I find this type of strategy attracting increasing attention. It is not a new argument to economists, of course, but agricultural producer groups are ever on the lookout for new ways to protect their position. Comparative costs studies to include social and environmental phenomena provides a rich field for IATRC analyses.

Finally, administrative costs of regulatory agencies in importing **versus** exporting countries also are ripe for particular analyses. The large regulatory bureaucracies, national and international, which administer day-to-day operations often move ahead under their own momentum. Salter [pp.36-97] has demonstrated what can be done. What she has not done is to "cost out" the amount spent on the creation of standards, on their enforcement, on regulations, etc. Caswell [1988] has suggested a research agenda which is built around analyses of the trade-offs between food safety and quality regulations that are fine tuned to local areas and uniform national policy. Even though her agenda is confined to federal-state regulatory actions within the United States, it is not outside the bounds of reason to suggest an extrapolation of her methodology to the international sphere.

These are but three suggestions for study. There are many more, and I hope the Consortium will give attention to them.

Summing Up.

Attention to NTBs has evolved from a broad interest in inventorying and list-making, including anecdotal recounting of particular incidents of protectionistic harassment to a narrower focus and interest in "technical barriers" during the Uruguay Round of GATT, and more recently to the subject of "environmental barriers", a more amorphous terminology. As to administrative protection, after WW II there existed for a long time only a fine line between the trade policies of many countries and their agricultural competitive policies. Hence, there is still a danger that protectionist intent will be lost in a move to a broader, more legalistic jargon which might prevent international scientific organizations from cutting

through the layers of national bureaucracies to expose such intent. Included in these bureaucracies are vast administrative fiefdoms.

The IATRC can be of great assistance to the cause of freer international trade in agricultural and food products if, along with other research agencies, it would mount a program of NTB studies with applied methodologies and which would be focused on vertically-oriented and market-function phenomena. One would hope that appropriate analyses would adduce the facts, as well as the intent of agricultural protection which use a NTB rationale, and such protection as is justified by the GATT rules.

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ENDNOTES.

1. Section 22 was conceived strictly as a quantitative instrument. It authorized the President of the United States to restrict the importation of commodities, by the imposition of fees or quotas, if such importation would render ineffective, or materially interfere with, the policies of the Department of Agriculture in relation to agricultural commodities. The scope and permissible action of the original legislation was expanded by the Trade Agreements Extension Act of 1951, under which no trade agreement or other international agreement can be applied in a manner inconsistent with requirements found in Section 22. The Trade Expansion Act of 1962 and the Trade Act of 1974 also make that exception. The United States in 1986, as part of its negotiating position in the Uruguay Round of multilateral negotiations, expressed a willingness to negotiate the repeal of Section 22, but certain domestic farm interests continued to resist this change.
2. The submission by the United States in the Uruguay Round negotiations for long-term, comprehensive agricultural reform insisted that problems be attacked through a subset of policy instruments categorized as **market access, export competition, internal support, and sanitary and phytosanitary measures**. [See Table 2].
3. To be sure, language is often used deliberately to obscure and confuse, rather than to clarify; but I have argued elsewhere [Hillman, 1971] that in order to have more effective policy our language must be as clear and as objective as we can make it. Liola Salter makes the same point. [Salter, pp 93–97, 202–204].
4. State trading and export subsidies are two areas of special concern. I have treated state trading briefly elsewhere [Hillman, 1978, p. 67ff.] but note should be taken here of the recent increased activities by exporters toward export subsidization and enhancement policies. And, special note should be made of **export deterring** policies by countries which use NTBs [in the form of export disincentives--XDs] not only for national security and foreign policy reasons, but also for such objectives as health safety and protection of the environment [Richardson].
5. I am indebted to John Gibson for some observations in this section.
6. John Gibson, private correspondence 24 July, 1995.
7. Illustrating this point, the following quotation was taken from a research interview with John Hellstrom, Chief Veterinary Officer MAF, New Zealand in 1989: **QUESTION:** "What New Zealand does about its own access and then what it argues about its access into foreign countries has to be the same thing because we're too small to be able to make our own double standard?"
Hellstrom: "Right...in fact the overseas consumer is influencing our monitoring and registration standards for these types of products and that is then influencing

New Zealand consumers to demand higher standards in terms of these products. I don't believe it's driven by NZ consumers...whether that's an issue of ignorance or just a reflection of the much bigger and more real concerns in Europe and N. America. So the Health Department in the end is developing standards which are reflecting that situation overseas rather than what's happening over here...I see that leading us into increasing the standards for the movement of products...no doubt about that. I think there is a real reluctance amongst NZ producers and manufacturers to accept consumer demands in Europe which don't have a logical scientific base and I think that's one of the difficult areas because so many of the standards that are being set now are reflecting anxiety levels, emotional concerns, rather than strict science. Science is running behind the demands of the consumer and of course we are arrogant about our understanding of what constitutes toxic levels and then those are disproved after a couple of years and you've got the whole dose-response effect being questioned. I'm very conscious of the fact that EPA, for example, in the US which sets many of the standards which are used internationally has got a very empirical approach to setting residue levels. There's a lot of debate between the producers and manufacturers on the one hand and the consumers on the other about where those standards should be set. But at the end of the day there's no right answer so it's a question of compromise, negotiated setting of the standard. Once one country has been through a protracted process to reach that point it becomes very difficult for another country to go and argue for a shift. And I believe, for example, the hormonal growth promotant in Europe, that was very much the case, there was a protracted battle within the Community over that issue but in the end a negotiated resolution was reached which was not scientifically based but which represented a consensus of everyone involved. For Americans, or as NZers or Australians to go in and try and overcome that meant that we were really challenging something that was quite well concreted in place. In Europe the hormone frauds which continue to go on in the face of the ban will only increase consumer demands for tighter controls even though the current controls are not achieving the desired effect."

8. The following reference to the Delaney Clause was adapted from Vogt [1994, p.11]:

The Delaney is not a disguised nor a country specific discriminatory policy. All products, domestic or imported are treated alike[Article I of the GATT, the most-favored nation clause, requires non-discriminatory treatment of imported products from different foreign suppliers. Article III requires that such products be treated no less favorably than domestically produced goods with respect to any laws or regulations affecting their sale]. The agreement allows member governments to apply their health measures in a manner that meet their own chosen level of protection. The Delaney clauses establish a US Level of protection: zero risk from carcinogens, for food additives, color additives and feed additives.[Pesticides are one subset of food additives, and they are considered food additives if they are found to concentrate only in processed foods.]

Congress decided that there should be no risk from cancer to humans from certain substances which cause cancer in animals, and put this standard in the Federal Food and Cosmetic Act [FFDCA]. By doing so, Congress made a risk

decision that it wanted zero carcinogens added to processed foods. The fact that the Delaney Clause gives us a more conservative approach to carcinogens [zero risk] than CODEX does not render it vulnerable to challenge, according to the current Administration in Washington. The Delaney Clause treats all pesticide residues on products the same [in a constant manner] whether the products having pesticide residues are produced domestically or are imported.

9. The administrative problem in many types of regulatory activities is analyzed in depth by Gerard and Victoria Curzon [1970]. However, their treatment deals more with manufacturing and industrial issues, and not so much with agricultural regulations.
10. For example, in June 1995 a court action in New Zealand decided for the NZ Asparagus Growers Association against the Ministry of Agriculture and Fisheries [MAF] in an injunction to stop imports of fresh asparagus. The court action followed discussions between MAF and asparagus growers earlier when the growers advised MAF that fresh imports of asparagus could pose a serious threat to the New Zealand asparagus industry because of the importation of new diseases. This example does not fit the classic case where there is a decision involving a domestic versus a foreign producer, but it does illustrate the rapidity with which decisions can be precipitated by domestic producer interests.
11. But, as Salter observes, this is met with "an almost schizophrenic attitude toward economic issues among the participants in standard setting organizations. On one hand, almost every participant attested to the necessity of making decisions that were economically sound. On the other hand, these same participants sometimes denied that economic considerations were taken into account in the development of standards." [Salter, p.168].
12. Hugh Bigsby of Lincoln University has an interesting observation: "I have a feeling that the approach, or analysis, inherent in SPS differs substantially from that of general trade issues. The essence of the difference is that winding back tariffs between nations is a gain-gain game a-la Ricardo [assuming equal bargaining power and, in the longer term, after adjustments have been made], while winding back SPS restrictions is a gain-gain game with Russian Roulette thrown in. That is, in SPS problems the game takes on a different type of risk and the down side always looms more ominously. It is made all the more complicated by the inability of science to define how many chambers there in the gun, and how many are loaded. The result is an ultra-conservative approach to SPS standards which focuses on potential bad effects of pests and diseases, and virtually ignores the welfare gains from that trade which would have initiated the risk.

"The current International Plant Protection Convention [IPPC] effort to develop standards is a focus on process rather than standards per se, although I think it is anticipated that eventually common practice and standards, if not an international body, will emerge. The emphasis on process should at least make public and

available for discussion the opinion of a country on how many barrels it thought the gun had, how many were loaded, and how mortal the wound would be if they lost."

13. I agree with Donna Roberts of the U.S. Department of Agriculture Economic Research Service who, in personal correspondence to me (November 21, 1995) has observed: "I agree that the area of standards and other technical phenomena are ripe for IATRC analysis, especially as the disputes surrounding them apply to the definitions of goods and services from a market failure or public goods perspective. In a recent (ERS/FAS/USDA June, 1995) survey of all technical barriers facing U.S. agricultural exports (which I coordinated), product standard barriers showed up as surprisingly important. And, in fact, a product quality case (the South Korean maximum shelf life case) was the highest profile issue in U.S. agricultural policy circles in 1995."

APPENDIX 1. ILLUSTRATIVE CASE STUDIES.

1. **Nontariff Barriers in the Beef Industry**, by Mark Lynham , Arizona Agricultural Experiment Station Technical Bulletin 261, November 1987. The bulletin develops a taxonomy of NTBs which is used to identify and categorize prominent NTBs in the world beef trade. It discusses trade-restrictive, trade-diverting, and country-neutral Nontariff barriers.
2. **Pigmeat Inspection in Australia : an Economic Analysis of the Human Health Benefits**, by David R. Thompson, MS Thesis, University of New England, Australia, October 1988. The thesis analyzes inspection requirements to achieve health standards for imported pork. It is aimed at enlightening the public about a situation provoked by the rejection of Canadian pork by Australian inspectors.
3. **Economic Analysis of Phytosanitary Barriers in the Australian Apple Market**, by Maria V.C. Rodriguez, MS Thesis, Lincoln University, New Zealand, 1993. The thesis analyzes phytosanitary barriers in the apple trade which prohibits New Zealand apples importation into Australia because of Fire Blight disease.
4. **Trade Effects of Economic Assistance to Fishing : A New Zealand Case Study**". MAF Fisheries and Lincoln University, June 1992. This study lists the major categories of NTBs, discusses total allowable catch, major holders of quotas, and other market data for the New Zealand fishing industry.
5. **Determinants of Technical Barriers to Trade : The Case of U.S. Phytosanitary Restrictions on Mexican Avocados, 1972–1995**, by Donna Roberts and David Orden, July, 1995. This paper examines the long-standing dispute between Mexico

and the United States over the U.S. phytosanitary regulations that have prohibited imports of Mexican avocados.

6. **The Political Economy of U.S. Phytosanitary Trade Restrictions: The Case of Nursery Stock and Ornamental Plants in Growing Media**, by Eduardo O. Romano, MS Thesis, Virginia Polytechnic Institute and State University, September, 1995.

In this thesis, the determinants of the regulations governing the importation into the United States of nursery stock and ornamental plants are analyzed in a political economy framework.

Table 1. Major categories of nontariff barriers and related policies

I. *Quantitative restrictions and similar specific limitations*

- | | |
|---|--|
| 1. Import quotas | <ul style="list-style-type: none"> • Restrictions on quantity and/or value of imports of specific commodities for a given time period; administered globally, selectively or bilaterally. |
| 2. Export limitations | <ul style="list-style-type: none"> • Same as above but with reference to exports. |
| 3. Licensing | <ul style="list-style-type: none"> • Some system of licensing is required to administer the foregoing restrictions. Licensing may also be discretionary and liberal, including use for statistical purposes. |
| 4. Voluntary export restraints | <ul style="list-style-type: none"> • Restrictions imposed by importing country but administered by exporting country; administered bilaterally; requires system of licensing; essentially similar to an orderly marketing arrangement. |
| 5. Exchange and other financial controls. | <ul style="list-style-type: none"> • Restrictions on receipts and/or payments of foreign exchange designed to control international trade and/or capital movements; will generally require some system of licensing; may involve multiple exchange rates for different kinds of transactions. |
| 6. Prohibitions | <ul style="list-style-type: none"> • May be selective in respect of commodities and countries of origin/destination; includes embargoes; may carry legal sanctions. |
| 7. Domestic content and mixing requirements | <ul style="list-style-type: none"> • Requires that an industry use a certain proportion of domestically produced components and/or materials in producing final products. |
| 8. Discriminatory bilateral agreements | <ul style="list-style-type: none"> • Preferential trading arrangements that may be selective by commodity and country; includes preferential sourcing arrangements. |
| 9. Countertrade | <ul style="list-style-type: none"> • Arrangements involving barter, counter-purchases of goods, and payments in kind. |

Table I, cont'd:

II. *Nontariff charges and related policies affecting imports*

- | | |
|--------------------------------|---|
| 1. Variable levies | <ul style="list-style-type: none"> Based on a target domestic price of imports, a levy is imposed so that the price of imports reaches the target price whatever the cost of imports. |
| 2. Advance deposit requirement | <ul style="list-style-type: none"> Some proportion of the value of imports must be deposited in advance of the payment, with no allowance for any interest accrued on the deposit. |
| 3. Antidumping duties | <ul style="list-style-type: none"> Imposition of a special import duty when the price of imports is alleged to lie below some measure of foreign costs of production; minimum prices may be established to “trigger” antidumping investigations and actions. |
| 4. Countervailing duties | <ul style="list-style-type: none"> Imposition of a special import duty to counteract an alleged foreign Government subsidy to exports; normally required that domestic injury be shown. |
| 5. Border tax adjustments | <ul style="list-style-type: none"> When indirect (e.g., sales or value added) taxes are levied on the destination principle, imports will be subject to such taxes but exports will be exempt; the effects on trade will be neutral except in cases in which the adjustments more than compensate for the taxes imposed or exempted, or when the size of the tax differs across commodities. |

III. *Government participation in trade and restrictive practices and more general Government policies*

- | | |
|------------------------------------|--|
| 1. Subsidies and other aids | <ul style="list-style-type: none"> Direct and indirect subsidies to exports and import-competing industries, including tax benefits and credit concessions. |
| 2. Government procurement policies | <ul style="list-style-type: none"> Preferences given to domestic over foreign firms in bidding on public-procurement contracts, including explicit cost differentials and informal procedures favoring procurement from domestic firms. |

Table I, Section III, cont'd:

3. State trading, Government monopolies and exclusive franchises	<ul style="list-style-type: none"> • Government actions which may result in trade distortions, including Government-sanctions, discriminatory international transport agreements.
4. Government industrial policy and regional development measures	<ul style="list-style-type: none"> • Government actions designed to aid particular firms, industry sectors, and regions to adjust to changes in market conditions.
5. Government financed research and development and other technology policies	<ul style="list-style-type: none"> • Government actions designed to correct market distortions and aid private firms; includes technological spillovers from Government programs, such as defense and public health.
6. National systems of taxation and social insurance	<ul style="list-style-type: none"> • Personal and corporate income taxation, unemployment insurance, social security and related policies which may have an impact on trade.
7. Macroeconomic policies	<ul style="list-style-type: none"> • Monetary/fiscal, balance-of-payments, and exchange-rate actions which have an impact on national output, foreign trade and capital movements.
8. Competition policies	<ul style="list-style-type: none"> • Antitrust and related policies designed to foster restrict competition and which may have an impact on foreign trade and investment.
9. Foreign investment policies	<ul style="list-style-type: none"> • Screening and monitoring of inward and/or outward foreign direct investment, including performance requirements affecting production and trade.
10. Foreign corruption policies	<ul style="list-style-type: none"> • Policies designed to prohibit or restrict bribes and related practices in connection with foreign trade and investment.
11. Immigration policies	<ul style="list-style-type: none"> • General or selective policies designed to limit or encourage international movement of labor and which have an impact on foreign trade and investment.

Table I, cont'd:

IV. Customs procedures and administrative practices

- | | |
|--------------------------------------|--|
| 1. Customs valuation procedures | <ul style="list-style-type: none">• Use of specially constructed measures of price rather than the invoice or transactions price for the purpose of levying tariffs. |
| 2. Customs classification procedures | <ul style="list-style-type: none">• Use of national methods of customs classification rather than an internationally harmonized method for the purpose of levying tariffs. |
| 3. Customs clearance procedures | <ul style="list-style-type: none">• Documentation, inspection and related practices which may impede trade. |

V. Technical barriers to trade

- | | |
|--|--|
| 1. Health and sanitary regulations and quality standards | <ul style="list-style-type: none">• Actions designed for domestic objectives but which may discriminate against imports. |
| 2. Safety and industrial standards and regulations | <ul style="list-style-type: none">• See above. |
| 3. Packaging and labeling regulations including trademarks | <ul style="list-style-type: none">• See above. |
| 4. Advertising and media regulations | <ul style="list-style-type: none">• See above. |

Table 2. Submission by the United States on Comprehensive Long-term Agricultural Reform in the Uruguay Round

Market Access

Objective: Substantial progressive reduction in all import protection

Export competition

Objective: Elimination of export subsidies and export prohibitions

Initial Support

Objective: Development of new GATT rules and disciplines covering all trade-distorting subsidies leading to the elimination of the most trade-distorting policies

Sanitary and Phytosanitary Regulations and Barriers

Objective: Establishment of an international process for settling trade disputes involving food safety, animal health and plant health issues and for promoting harmonization